THE
2025-26

Dental UPDATE

A 20-hour Survey of Pressing Clinical, Practice Management, Legal and Risk Management Issues in the Practice of Dentistry

American Educational Institute, Inc.

111 E. Merrill Street • Suite 300
Birmingham, MI 48009

1 800 354-3507
AEIseminars.com

American Educational Institute, Inc.
Leading Edge Instruction Since 1982
111 E. Merrill Street • Suite 300 • Birmingham, Michigan 48009
Seminar Information (800) 354-3507 or (248) 433-0606
Fax (248) 433-0911
www.AEIseminars.com E-Mail: DVictor@ AEIseminars.com

David R. Victor, JD
CEO

Dear Registrant:

You practice in a dynamic and challenging environment. While keeping clinically current is imperative, it isn't enough. You must also acquire the knowledge necessary to successfully manage your practice, avoid legal pitfalls and minimize myriad liabilities exposures. ***The 2025-26 Dental Update*** is designed to assist you in that endeavor.

In one course you will receive 20 hours of vital instruction from national experts in the fields of dentistry, law, medicine, asset protection, pharmacology, accounting, and practice management. And their presentations include topics ranging from substance abuse, pain management, malpractice insurance policies and financial literacy, to patient treatment acceptance, the oral-systemic connection, practice acquisitions and non-surgical orthodontic approaches.

To help you assess your level of comprehension we offer brief self-evaluations that may be taken either before or after the presentations concerned. These tests are included in this syllabus and are identified by the black edges of the pages on which they are featured.

As always, I am very interested in your reaction to this year's presentation. Please do me the favor of taking the time to complete the evaluation questions presented on screen for each presentation. In addition, I encourage you to contact any of our faculty members directly with questions or comments.

Finally, I urge you to take advantage of the experience and expertise of your colleagues taking the course via our real-time and interactive chat feature. Should you have any technical or other questions about the program's operation just ask them at our help desk and AEI's experienced staff will respond promptly.

Thank you for your participation and please accept my best wishes for a safe, enjoyable and enlightening visit.

Cordially,
American Educational Institute, Inc

David R. Victor, Esq.
CEO

TABLE OF CONTENTS

TABLE OF CONTENTS

THE 2025-26

Dental UPDATE

COURSE OBJECTIVES

After completing ***The 2025-26 Dental Update*** you should have acquired the knowledge that will better enable you to better:

- Understand the essential principles of diagnosis, treatment planning, and foundational techniques **in root canal therapy.**
- Identify, diagnose and treat ulcerative changes to **oral mucosal soft tissues**
- Understand and meet today's **practice challenges**.
- Understand how to **compare dental laser technologies** to determine the most appropriate tool for specific soft- and hard-tissue procedures in clinical practice.
- Identify and manage **substance-abusing patients**.
- Identify **financial controls** to prevent fraud and increase revenue
- Understand the terms and implications of alternative **associate agreements**.
- Understand recent innovations and core principles in endodontics to enhance the **effectiveness and predictability** of root canal therapy.
- Enhance early detection of **oral cancer** through effective screening, risk assessment, and diagnostic examination techniques.
- Identify the characteristics of a great **dental practice culture and team**.
- Identify **insurance gaps and litigation** stress management techniques
- Identify dental considerations relating to **cannabis**.
- Identify legal and practical issues associated with **buying or selling a dental practic**e.
- Understand the comparative outcomes of **implants versus endodontic therapy**, emerging regenerative endodontic techniques, and systematic diagnostic protocols to improve treatment planning.
- Identify and evaluate the clinical signs of **ankyloglossia and maxillary labial frenula** in infants, understand their impact on breastfeeding, and determine when surgical intervention is appropriate.
- Recognize, diagnose, and manage **endodontic emergencies and traumatic dental injuries** using evidence-based approaches.
- Understand the oral impact of and treatment approaches for **acid airway reflux and DM2.**
- Understand the legal and ethical pitfalls of **salivary diagnostics and genomics**.
- Discuss the evaluation, diagnosis and treatment of **acute pain**.

All learning objectives above address IOM/ACGME core competencies.

THE 2025-26

Dental UPDATE

FACULTY DISCLOSURES

The individuals listed below have control over the content of ***The 2025-26 Dental Update***. None of them have a financial relationship with an ineligible company.

David R. Victor, Esq., CEO, American Educational Institute
Billy J. Allen, president, American Educational Institute
Perry Perzov, DDS, advisory committee member
Michael Kleiman, DMD, advisory committee member
Carole C. Foos, CPA, faculty member
John F. Dombrowski, MD, faculty member
Eric J. Ploumis, DMD, JD, faculty member
Susan Maples, DDS, MSBA, faculty member
Robert D. Kelsch, DMD, faculty member
Steven M. Katz, DMD, MAGD, faculty member
Thomas A. Viola, RPh, CCP, CDE, CPMP, faculty member
Robert Convissar, DDS, faculty member
Thomas Cox, ARM, faculty member
Gary Glassman, DDS, faculty member

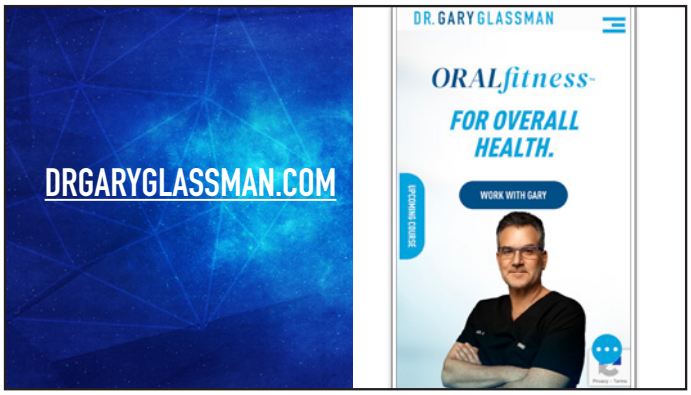
All relevant financial relationships have been mitigated prior to the start of this activity in accordance with ACCME standards.

FACULTY

Gary Glassman, DDS

Gary Glassman, DDS, of Toronto, Ontario, is a board certified endodontist and national recognized speaker. The author of numerous publications, Dr. Glassman lectures globally on endodontics, is on staff at the University of Toronto, Faculty of Dentistry in the graduate department of endodontics, and was an Adjunct Professor of Dentistry and Director of Endodontic Programming for the University of Technology, Kingston, Jamaica from 2010 to 2017. Gary has presented at major dental conferences around the world including the annual conference for the European Society of Endodontology, The Canadian Dental Association, The Ontario Dental Association, The California Dental Association, The Texas Dental Association, The Greater New York Dental Meeting, The Pacific Dental Conference, Washington's Nation's Capitol Dental Meeting, The Chicago Mid Winter Dental Meeting and the Irish Dental Association. A Fellow of the Royal College of Dentists of Canada, Fellow of the American College of Dentists, Fellow of the Academy of Dentistry International, Fellow of the Pierre Fauchard Academy, and Fellow of the Academy of Dental-Facial Aesthetics, Gary is the endodontic editor for *Oral Health Dental Journal* and *Inside Dentistry*. You may contact Dr. Glassman with your questions or comments at gary@rootcanals.ca

Introduction to Root Canal Treatment
Gary Glassman, DDS

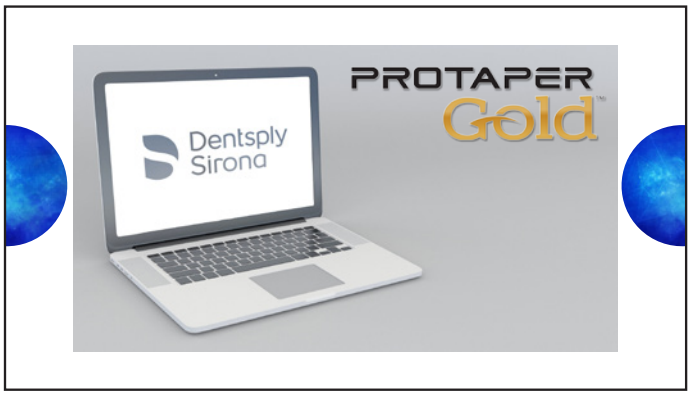


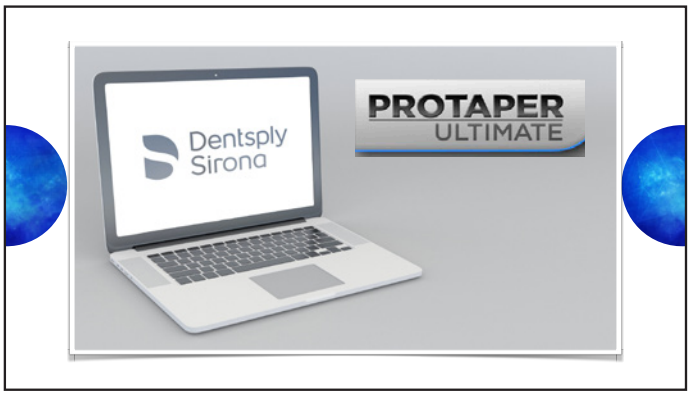

point of view
Quality
of excellence,
distinguished


Confidence


FAIR BALANCE


WHAT DO YOU NEED TO GET STARTED?
wave•one GOLD
Reciproc™ Blue
PROTAPER Gold
PROTAPER ULTIMATE
TruNatomy®


Dentsply Sirona
PROTAPER Gold


Dentsply Sirona
PROTAPER ULTIMATE


Dentsply Sirona
wave•one GOLD


Dentsply Sirona
Reciproc™ Blue

MB2 MB2 MB2

MB2 MB2 MB2

"I solve problems you don't know you have in ways you can't understand.

"BE EXCELLENT IN THE MOMENT"

-LITA, STRATEGIST, VISIONARY

AGENDA

- ✓ Endodontic Breakthroughs and Advancements
- ✓ Essential Endodontic Concepts
- ✓ Criteria for Successful Endodontic Procedure
- ✓ Isolation: Dental Dam Isolation and Placement
- ✓ Radiology: Radiograph for Endo: Placement
- ✓ Success Vs. Failure
- ✓ Implant Vs Endo: Evidence Based Discussion
- ✓ Apexification, Apexogenesis and Revasularization
- ✓ Systematic Diagnostic Protocol
- ✓ Case Presentations: Real World Endodontics
- ✓ Treating Endodontic Emergencies
- ✓ Dental Trauma

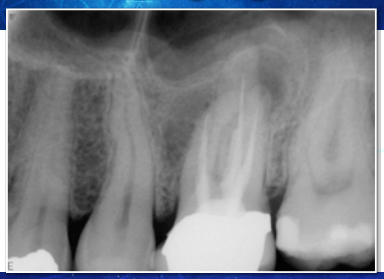
AGENDA

- ✓ Bugs and Drugs: Pain Control in Endodontics and Antibiotic Treatment
- ✓ Access for Success
- ✓ Root Canal Shaping
  - ✓ Protaper Gold
  - ✓ Protaper Ultimate
  - ✓ TruNatomy
  - ✓ WaveOne Gold
  - ✓ Reciproc Blue
- ✓ 3-D Disinfection of the root canal system
  - ✓ Endovac apical negative pressure
  - ✓ EndoActivator Sonic Irrigation
  - ✓ Laser Assisted Endodontic Irrigation
  - ✓ Gentle Wave Multisonic Endodontic Irrigation
- ✓ Obturation:
  - ✓ Continuous Wave of Condensation
  - ✓ Gutta Core Carrier Obturation System
- ✓ Restoration of the Endodontically Treated Tooth

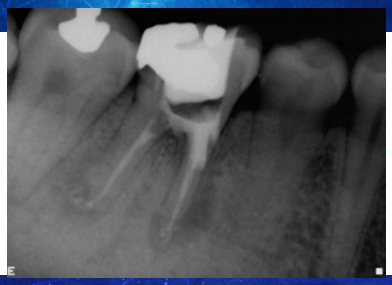
HAS THIS HAPPENED TO YOU?

HOPEFULLY NOT!
IF YOU FOLLOW MY CONCEPTS

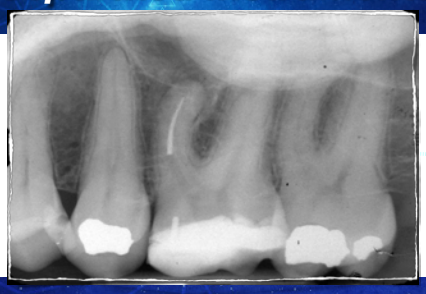
Ledging



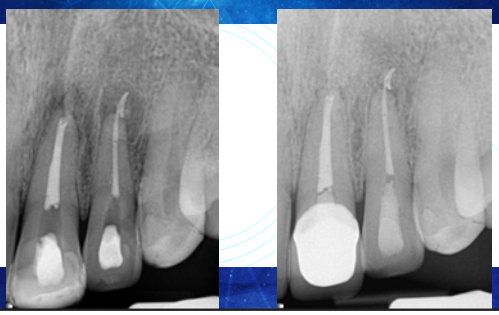
Perforation



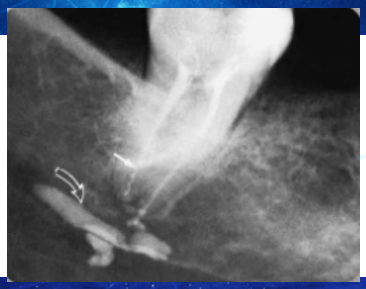
Separated Instruments

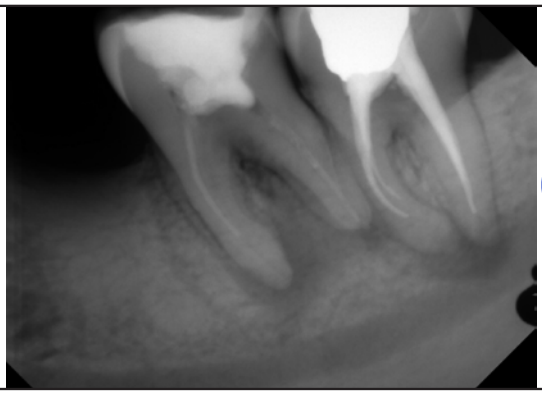


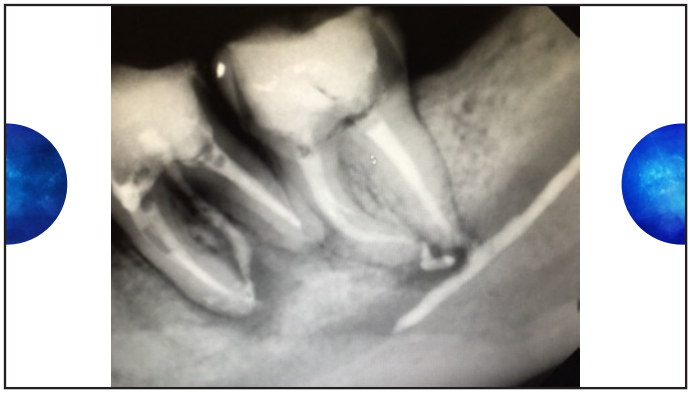
Overfill

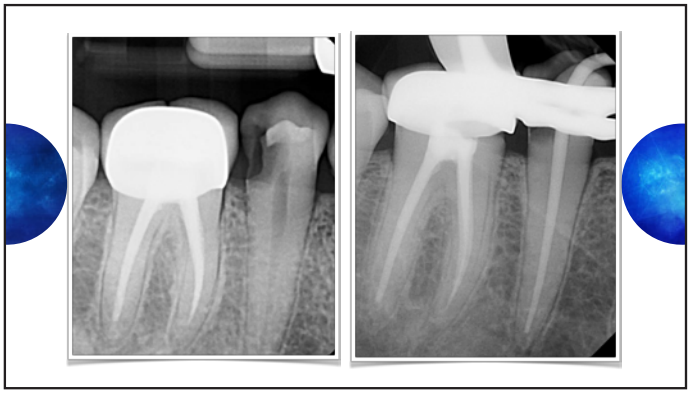


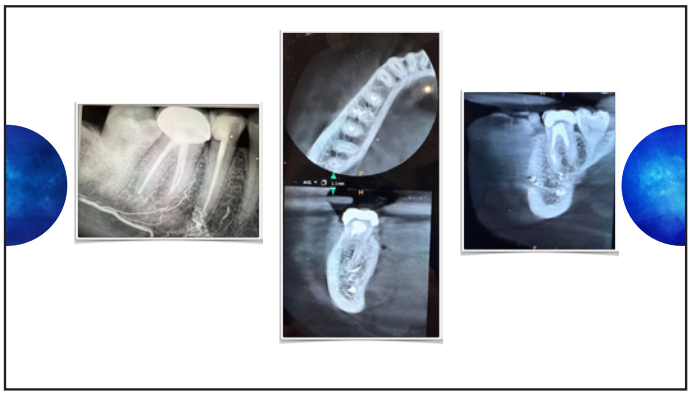
Uncontrolled Obturation



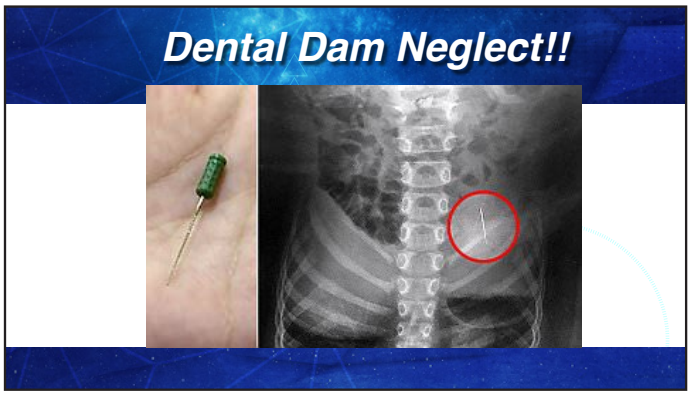


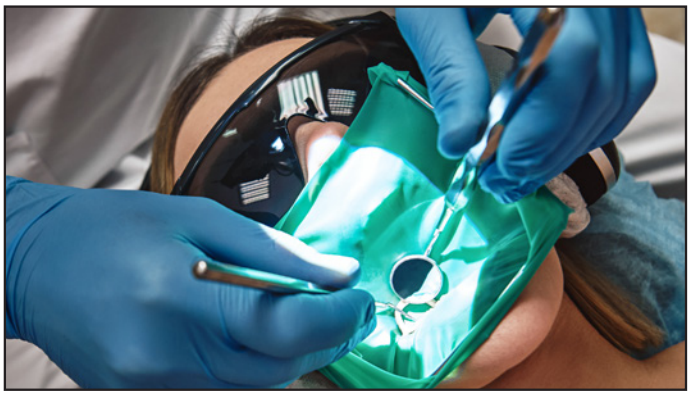


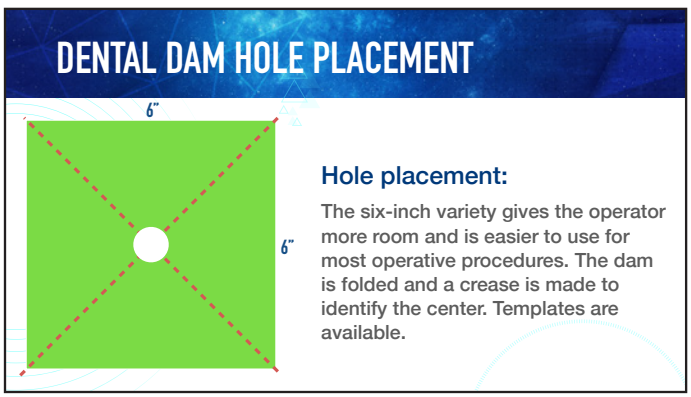


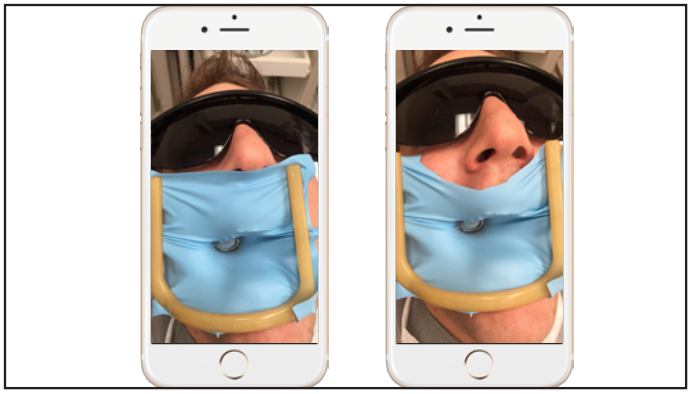



Irrigation Accident


Dental Dam Neglect!!




DENTAL DAM HOLE PLACEMENT
6"
6"
Hole placement:
The six-inch variety gives the operator more room and is easier to use for most operative procedures. The dam is folded and a crease is made to identify the center. Templates are available.



DENTAL DAM

J Endod. 2013 Dec;39(12):1481-4. doi: 10.1016/j.joen.2013.07.036. Epub 2013 Sep 13.

Rubber dam use during post placement influences the success of root canal-treated teeth

Joshua Goldfein [1], Chad Speirs, Matthew Finkelman, Robert Amato

DENTAL DAM

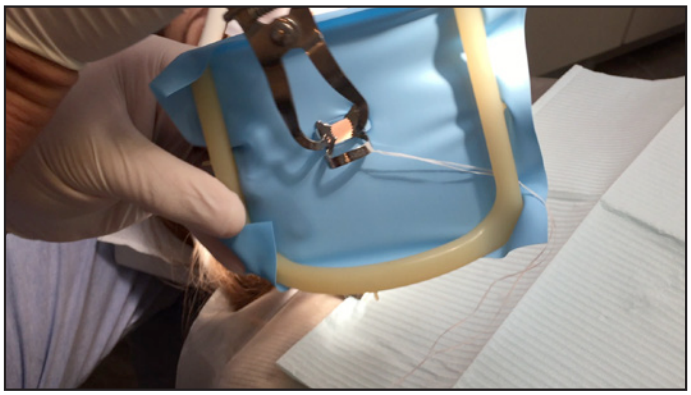
Abstract

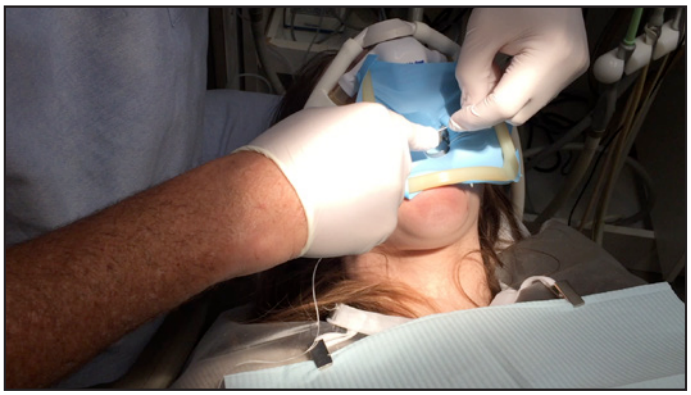
Introduction: Salivary leakage after root canal therapy is of great concern and can lead to failure of the endodontic therapy. The aim of this study was to investigate whether the use of a rubber dam (RD) during post placement impacts the success of root canal-treated teeth.

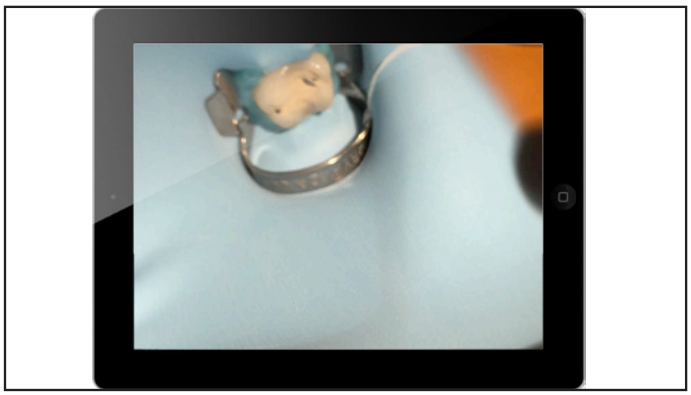
Methods: Retrospective chart reviews of 185 patients with an average recall of 2.7 years were assessed for the incidence of a new periapical lesion (periapical index score >2) after root canal therapy and post placement. The patients were divided into 2 groups based on the presence or absence of an RD clamp in the verification radiograph during post placement.

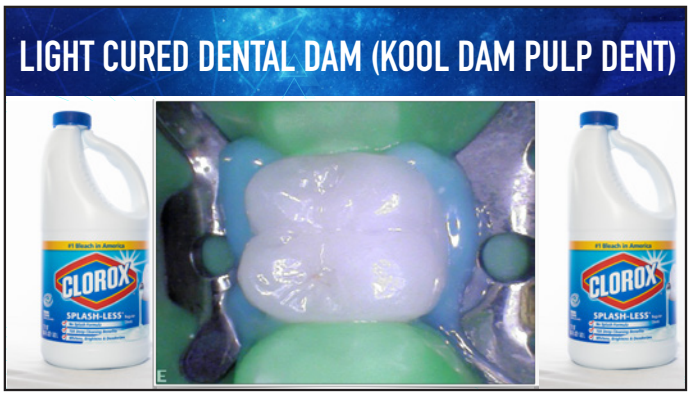
Results: Twenty-six patients (30 teeth) had a post placed with the use of an RD, and 159 patients (174 teeth) had a post placed without an RD. In the non-RD group, 128 (73.6%) teeth were considered successful at follow-up. In the RD group, 28 (93.3%) teeth were considered successful at follow-up. Based on the bivariate GEE model, the difference in success between these 2 groups was statistically significant (P = .035).

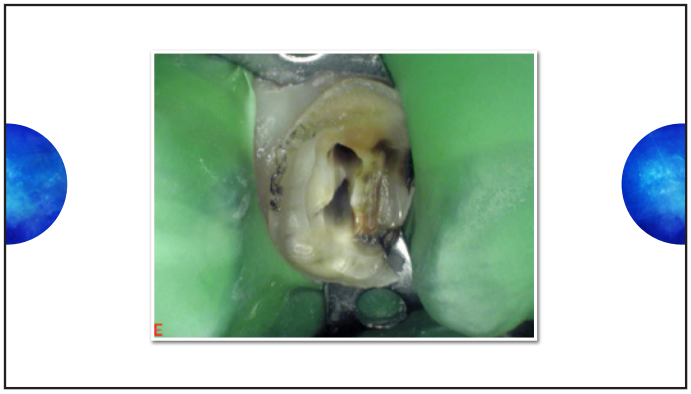
Conclusions: The use of an RD during prefabricated post placement provides a significantly higher success rate of root canal-treated teeth. Using an RD is already considered a standard of care for nonsurgical root canal therapy; in addition, using an RD during restorative procedures that involve open teeth should also become a standard of care.





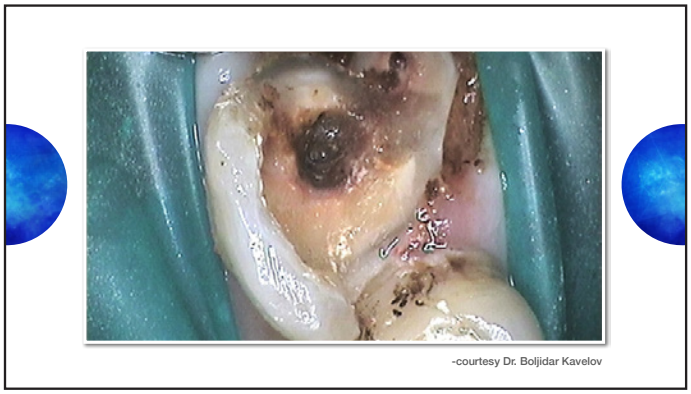


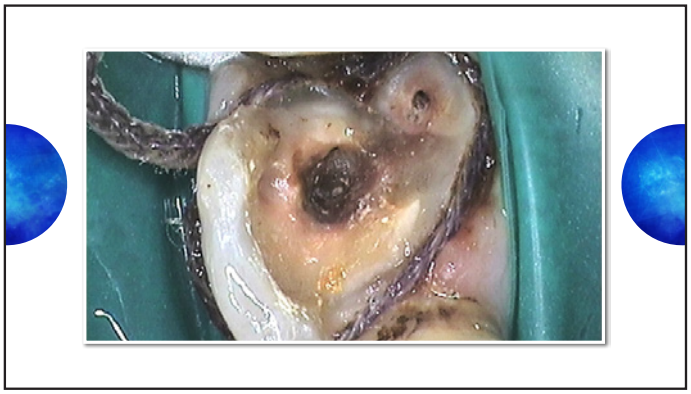


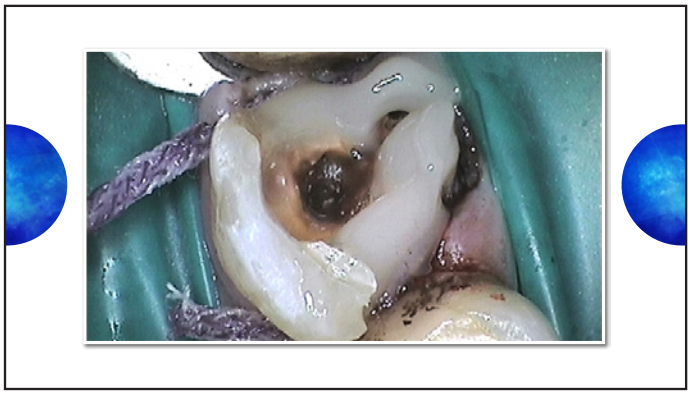


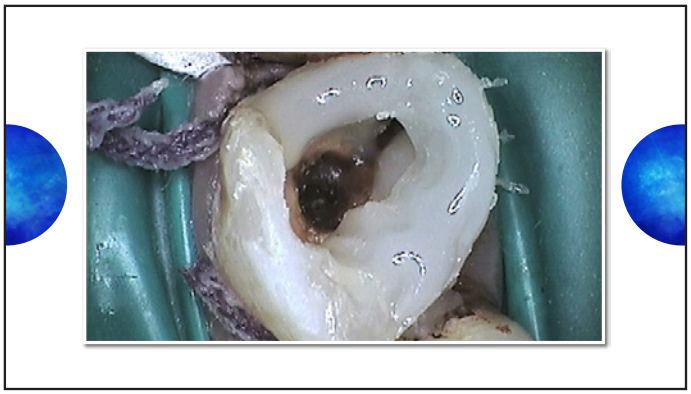
PRETREATMENT

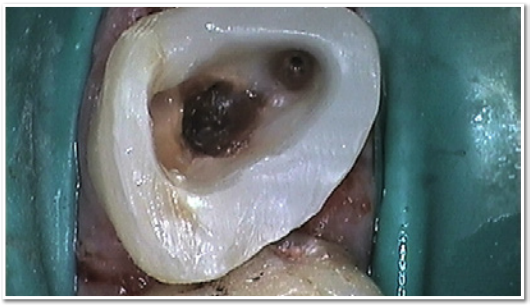
ISOLATION

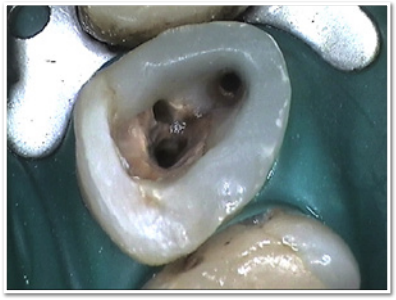

-courtesy Dr. Boljidar Kavelov

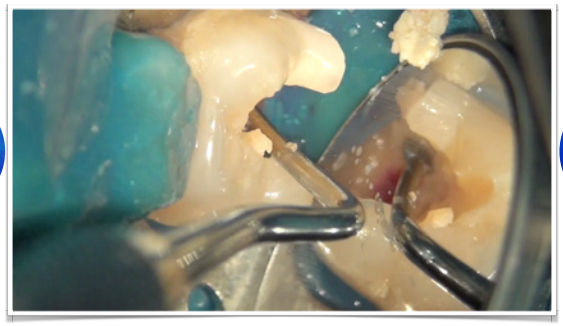










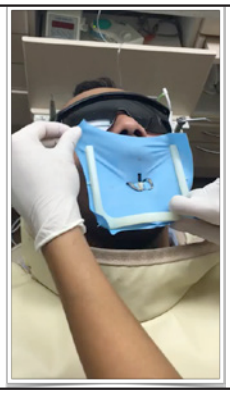


-courtesy Dr. Brett Gilbert

X-RAY PLACEMENT

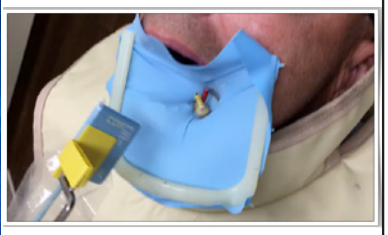
DENTAL DAM PLACEMENT

MANDIBULAR ANTERIOR



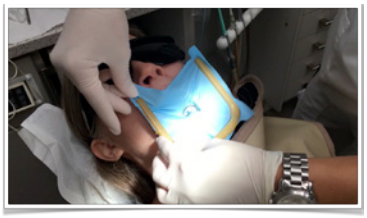
DENTAL DAM PLACEMENT

MANDIBULAR PREMOLAR



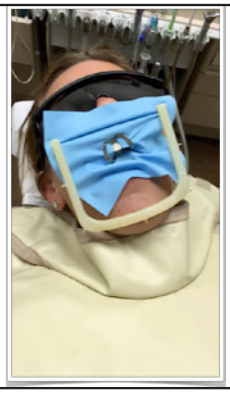
DENTAL DAM PLACEMENT

MANDIBULAR MOLAR



DENTAL DAM PLACEMENT

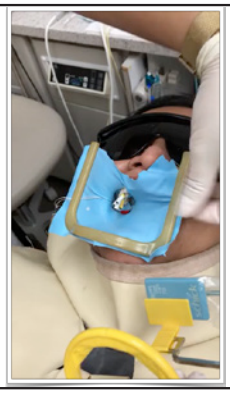
MAXILLARY ANTERIOR



DENTAL DAM PLACEMENT

MAXILLARY PRE-MOLAR & MOLAR

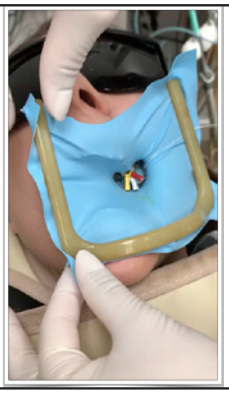
(RIGHT)



DENTAL DAM PLACEMENT

MAXILLARY PRE-MOLAR & MOLAR

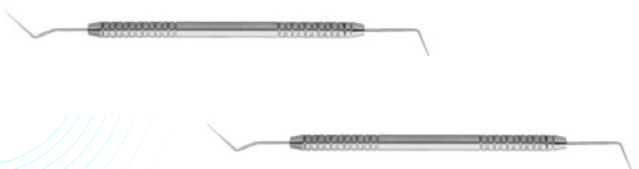
(LEFT)



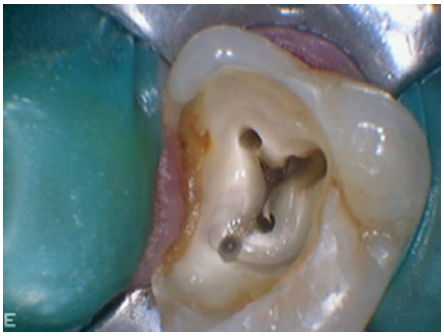
MOLAR ENDODONTICS

TIPS AND TRICKS TIME!

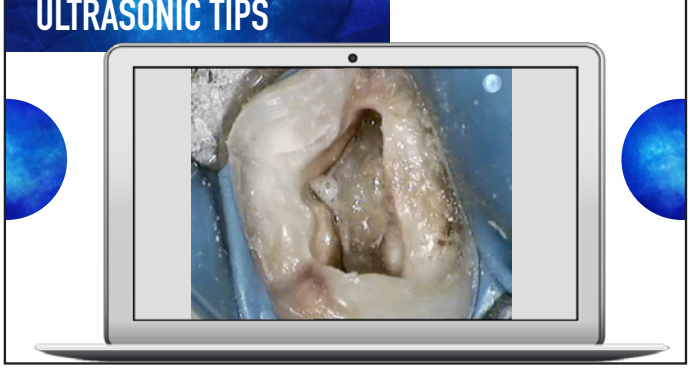
DG 16 ENDODONTIC EXPLORER

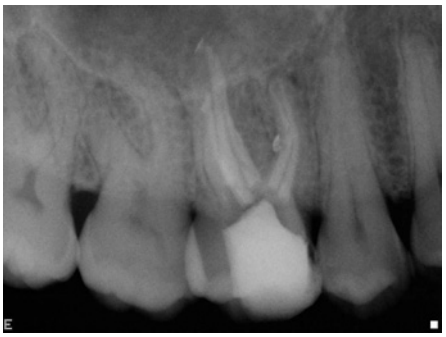


SHAPE THE CANALS YOU FIND FIRST



ULTRASONIC TIPS

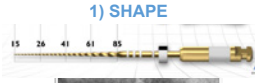




ROOT CANAL BASICS

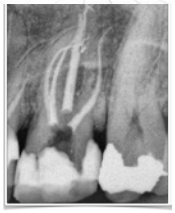
ENDODONTIC TRIAD

1) SHAPE



2) CLEAN

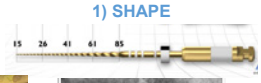
3) OBTURATION



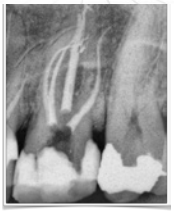
ENDODONTIC TRIAD

1) SHAPE

35%

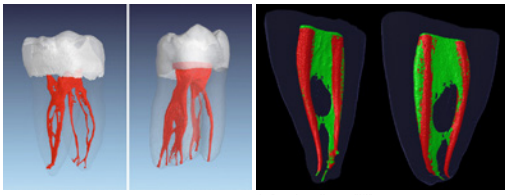


DR. OVE PETERS



2) CLEAN

The Challenge: The Root Canal System is Complex



Paque, F. (2017). Molar Root Canal Anatomy. In O. A. Peters (Ed.), The Guidebook to Molar Endodontics (Vol. eBook, pp. 1–25). Berlin: Springer.

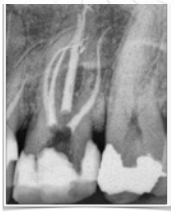
http://rootcanalanatomy.blogspot.com/2012/05

- Instruments Shape and Provide Gross Debridement
- Chemical/Fluid Irrigation is Critical

ENDODONTIC TRIAD

1) SHAPE

3) OBTURATION



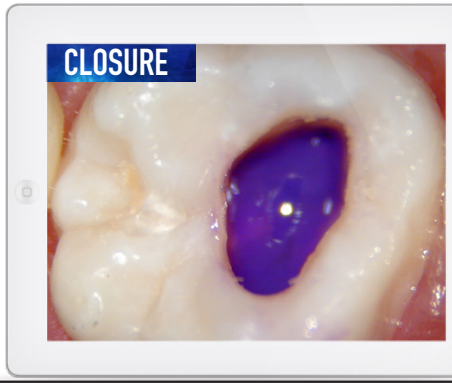
2) CLEAN

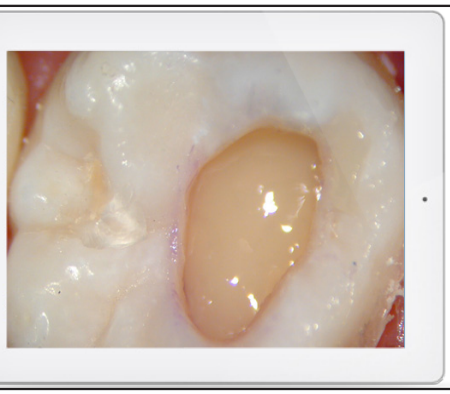
RESTORATION OF THE ENDODONTICALLY TREATED TOOTH

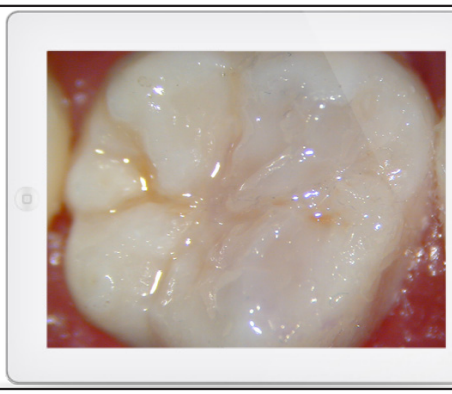
ENDODONTIC THERAPY IS NOT COMPLETE UNTIL THE TOOTH IS RESTORED TO FUNCTION…

CORONAL LEAKAGE

CLOSURE







ENDO MEETS RESTO

Patients are not well served if the endodontic treatment is successful but the tooth fails

Ree & Schwartz, 2010

Gluskin. Peters & Peters 2014

RETENTION VS. POST ENDO EXTRACTIONS

RESTORATIVE	43.5%
ENDODONTIC	21.1%
ENDO-RESTO	19.1%
VFR	10.9%
PERIO	4.1%
PERIO-ENDO	1.4%

73.5% OF EXTRACTIONS RELATED TO TREATMENT PROTOCOLS

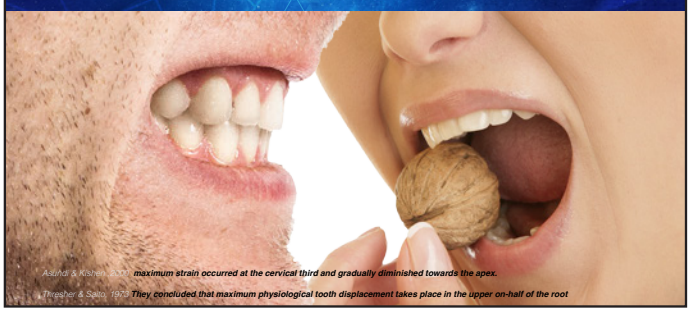
Fuss, Lustig & Tamse, 1999 Where restoration was compromised or the tx weakened the tooth enough whereby a vert root fx can occur
Boyen et al 2015 10 yr survival rate 91.3% with crown and 73% without. 7% of exod teeth were correlated to end pathology and caries and root fx contributed to 58% of exod cases.

A PROMISING FUTURE

Dentists need to reassess and recalibrate the endodontic and restorative techniques to best suit the way that they practice today.

Mukherjee, et al 2017

POST-TREATMENT TOOTH STRENGTH



Asundi & Kishen, 2000 **maximum strain occurred at the cervical third and gradually diminished towards the apex.**

Thresher & Saito, 1973 **They concluded that maximum physiological tooth displacement takes place in the upper on-half of the root**

RESTORABILITY CONSIDERATIONS

- IS THERE A SUFFICIENT CROWN TO ROOT RATIO?
- CAN A FERRULE BE CREATED?
- CAN WE KEEP SUFFICIENT DENTIN THICKNESS? MIN 1 MM

Influence of Access Cavity Design on Root Canal Detection, Instrumentation Efficacy, and Fracture Resistance Assessed in Maxillary Molars

Gabriela Rover, DDS, MSc, Felipe Gonçalves Belladonna, DDS, MSc,† Eduardo Antunes Bortoluzzi, DDS, MSc, PhD,* Gustavo De-Deus, DDS, MSc, PhD,‡ Emmanuel João Nogueira Leal Silva, DDS, MSc, PhD,‡§ and Cleonice Silveira Teixeira, DDS, MSc, PhD**

(*P* > .05). **Conclusions:** The current results did not show benefits associated with CECs. This access modality in maxillary molars resulted in less root canal detection when no ultrasonic troughing associated to an OM was used and did not increase fracture resistance. (*J Endod 2017;43:1657–1662*)

Access Cavity Preparations: Classification and Literature Review of Traditional and Minimally Invasive Endodontic Access Cavity Designs

Juzer Shabbir, MDS, BDS,* Tazeen Zehra, FCPS, BDS,* Naheed Najmi, MCPS, BDS,* Arshad Hasan, FCPS, BDS,† Madiha Naz, BDS,*Lucila Piasecki, DDS, PhD,‡ and Adham A. Azim, BDS‡

Introduction: Several endodontic access cavity designs have been proposed in the past decade to access the root canal space in a minimally invasive manner. **The rationale for this approach was derived from the assumption that preserving more tooth structure during access preparation will improve the tooth's resistance to fracture and its long-term surviv- ability.** However, is this assumption valid? Also, can this approach compromise other treatment-related aspects?

Methods: We conducted a literature review using 4 online databases and classified the access cavity designs presented in each article according to our proposed classification.

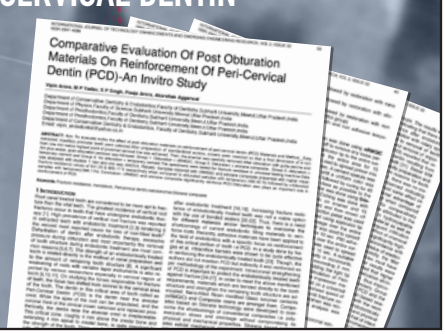
Results: Through the literature search, we identified **49 articles** that evaluated the effect of the access cavity design on 11 different treatment parameters. **The majority of the studies failed to demonstrate clear benefits of the minimally invasive access designs, whereas others raised concerns regarding the ability to adequately disinfect, fill, and restore teeth with a minimally invasive access cavity design.**

Conclusion: Minimally invasive access cavity designs present more risk than benefit on the outcome of endodontic treatment. Clinicians should reconsider the application of a minimally invasive access cavity for routine endodontics and cautiously apply it in selected cases when the proper armamentarium is available. (**J Endod 2021;47:1229–1244.**)

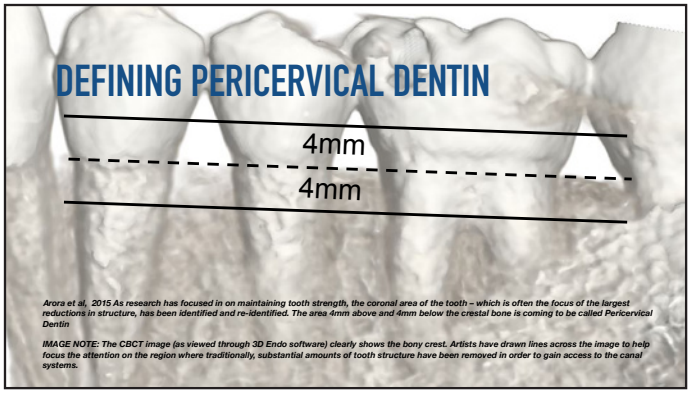
PROTECT PERICERVICAL DENTIN

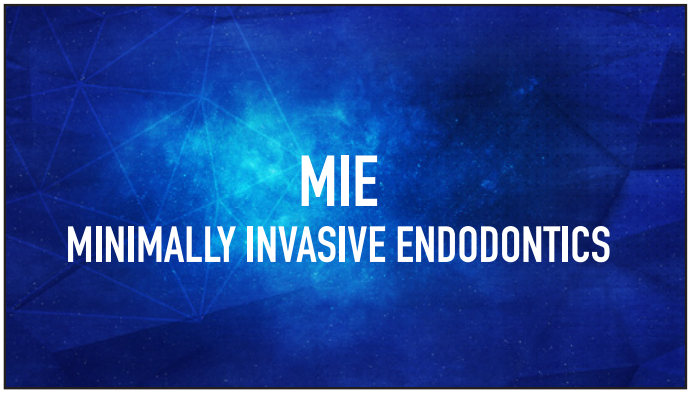
...preservation of tooth structure in cervical portion of tooth...

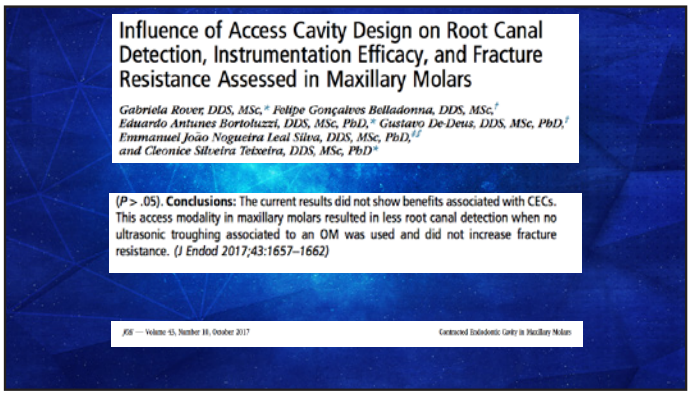
This area is considered to be most susceptible to fracture from occlusal forces.



Arora et al, 2015



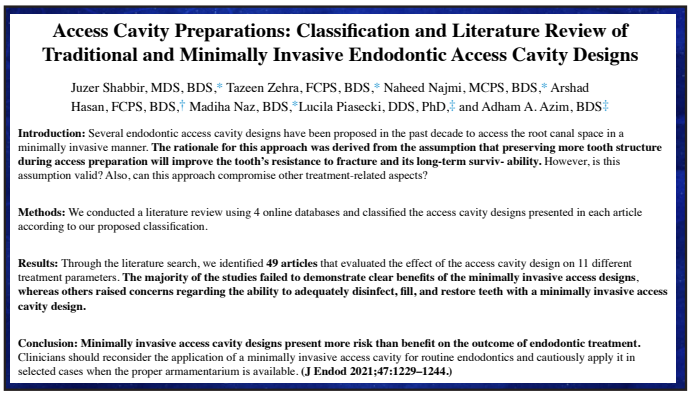



Influence of Access Cavity Design on Root Canal Detection, Instrumentation Efficacy, and Fracture Resistance Assessed in Maxillary Molars

Gabriela Rover, DDS, MSc, Felipe Gonçalves Belladonna, DDS, MSc,† Eduardo Antunes Bortoluzzi, DDS, MSc, PhD,* Gustavo De-Deus, DDS, MSc, PhD,‡ Emmanuel João Nogueira Leal Silva, DDS, MSc, PhD,‡§ and Cleonice Silveira Teixeira, DDS, MSc, PhD**

(*P* > .05). **Conclusions:** The current results did not show benefits associated with CECs. This access modality in maxillary molars resulted in less root canal detection when no ultrasonic troughing associated to an OM was used and did not increase fracture resistance. *(J Endod 2017;43:1657–1662)*

JOE — Volume 43, Number 10, October 2017 Conserved Endodontic Cavity in Maxillary Molars


Access Cavity Preparations: Classification and Literature Review of Traditional and Minimally Invasive Endodontic Access Cavity Designs

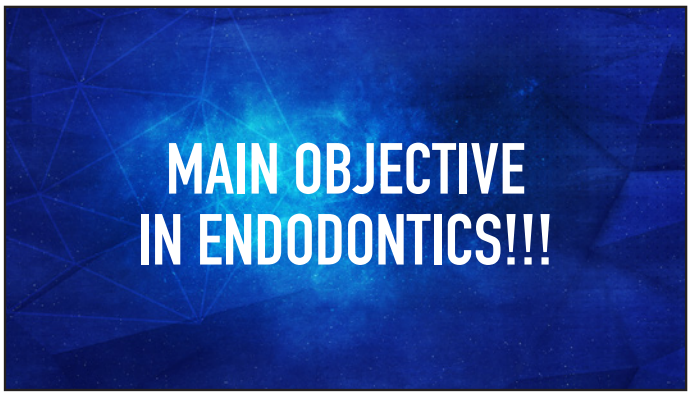
Juzer Shabbir, MDS, BDS,* Tazeen Zehra, FCPS, BDS,* Naheed Najmi, MCPS, BDS,* Arshad Hasan, FCPS, BDS,† Madiha Naz, BDS,* Lucila Piasecki, DDS, PhD,‡ and Adham A. Azim, BDS‡

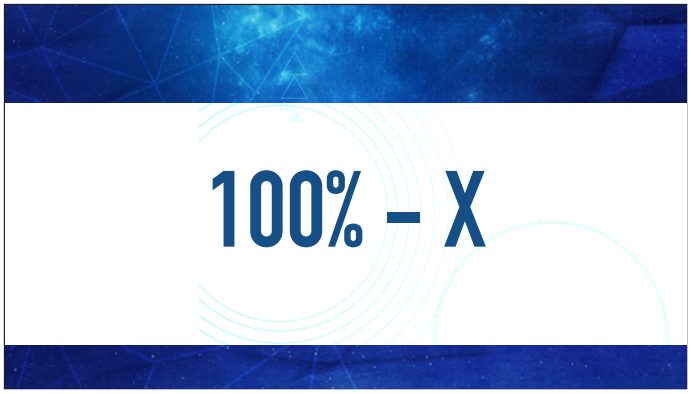
Introduction: Several endodontic access cavity designs have been proposed in the past decade to access the root canal space in a minimally invasive manner. **The rationale for this approach was derived from the assumption that preserving more tooth structure during access preparation will improve the tooth's resistance to fracture and its long-term surviv- ability.** However, is this assumption valid? Also, can this approach compromise other treatment-related aspects?

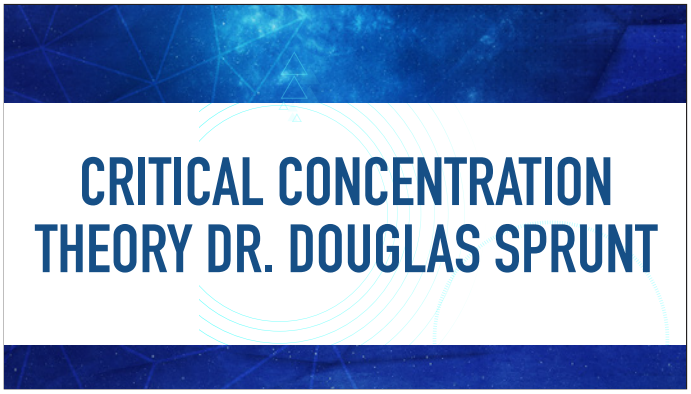
Methods: We conducted a literature review using 4 online databases and classified the access cavity designs presented in each article according to our proposed classification.

Results: Through the literature search, we identified **49 articles** that evaluated the effect of the access cavity design on 11 different treatment parameters. **The majority of the studies failed to demonstrate clear benefits of the minimally invasive access designs**, **whereas others raised concerns regarding the ability to adequately disinfect, fill, and restore teeth with a minimally invasive access cavity design.**

Conclusion: Minimally invasive access cavity designs present more risk than benefit on the outcome of endodontic treatment. Clinicians should reconsider the application of a minimally invasive access cavity for routine endodontics and cautiously apply it in selected cases when the proper armamentarium is available. **(J Endod 2021;47:1229–1244.)**




100% – X


CRITICAL CONCENTRATION
THEORY DR. DOUGLAS SPRUNT

SELF EVALUATION

Introduction to Root Canal Treatment

True/False

1. The main objective of root canal treatment is to eliminate infection and prevent reinfection by thoroughly cleaning, shaping, and sealing the root canal system.

2. The use of a dental dam during root canal treatment is optional and does not significantly impact the outcome of the procedure.

3. Proper placement of the dental dam ensures a clean, dry operating field and helps prevent the ingestion or aspiration of instruments and irrigants.

4. The quality of the final coronal restoration has no bearing on the long-term success of a root canal treatment.

5. Magnification tools, such as dental loupes or an operating microscope, enhance visualization of complex anatomy and are important for successful endodontic treatment.

6. Endodontic irrigation is used only to moisten the canals and has minimal effect on bacterial reduction.

7. A successful root canal treatment depends solely on the technical ability of the dentist and not on adherence to protocol or aseptic measures.

Answer Key: 1. T, 2. F, 3. T, 4. F, 5. T, 6. F, 7. F

Robert D. Kelsch, DMD

Robert D. Kelsch, DMD, of Rockville Centre, New York, is a specialist practicing clinical and microscopic oral & maxillofacial pathology, and Director of Clinical Oral Pathology in the Division of Oral Pathology of the Department of Dental Medicine at Northwell Health. He is associate professor in the Departments of Dental Medicine and Pathology and Laboratory Medicine at the Zucker School of Medicine at Hofstra/Northwell. Dr. Kelsch is also an attending physician at several area hospitals and holds numerous advisory council, consultant and course director positions at medical foundations, medical centers and professional organizations. He is a Fellow of the American Academy or Oral and Maxillofacial Pathology where he was a member of its executive council and chair of several committees. Dr. Kelsch is a Director of the American Board of Oral and Maxillofacial pathology, an editor at several medical and dental journals, the recipient of a number of professional awards and prolific writer and speaker.

You may contact Dr. Kelsch with your questions and comments at 718-470-7341, or by email at rkelsch@northwell.edu.

Robert D. Kelsch, DMD
Northwell Health
Department of Dental Medicine
Division of Oral Pathology

270-05 76th Ave
New Hyde Park, NY 11040
rkelsch@northwell.edu
718-470-7110

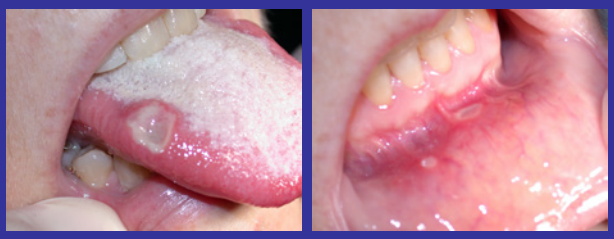
Associate Professor, Donald and Barbara Zucker School of Medicine at Hofstra Northwell
Director, Clinical Oral Pathology

Red, White and Ulcerative Lesions

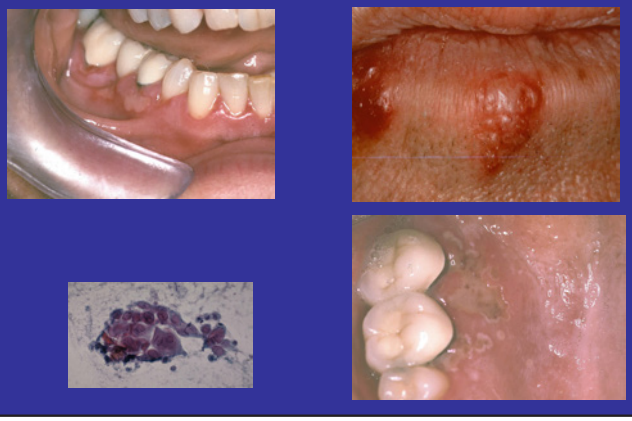
ORAL ULCERATIVE CONDITIONS

- APHTHOUS ULCERATIONS
- TRAUMATIC ULCERS/FACTITIAL
- HERPES SIMPLEX VIRUS INFECTIONS
- LICHEN PLANUS
- VESICULOBULLOUS DISEASE
- ORAL CANCER

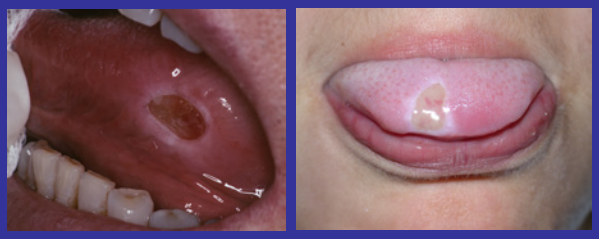
APHTHOUS ULCERATIONS



HERPES SIMPLEX

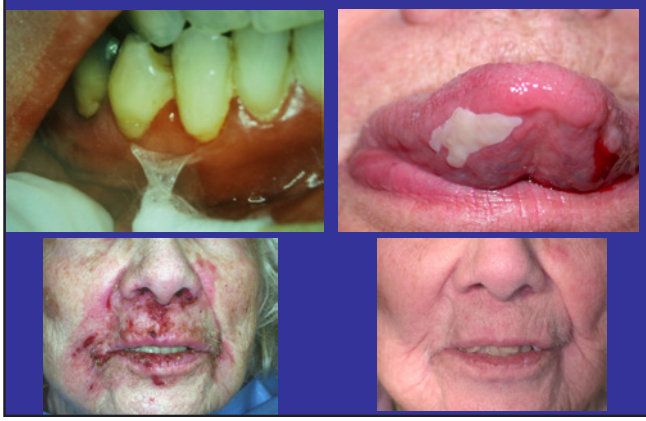


TRAUMATIC ULCER

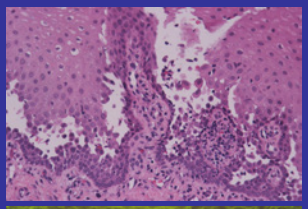
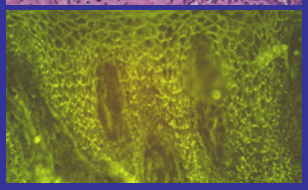
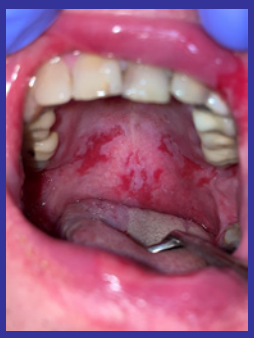


PEMPHIGUS VULGARIS

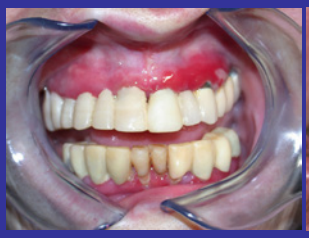
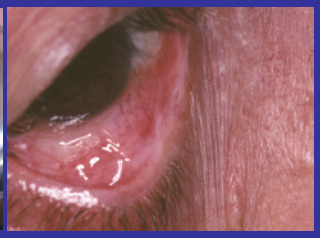
PEMPHIGUS VULGARIS



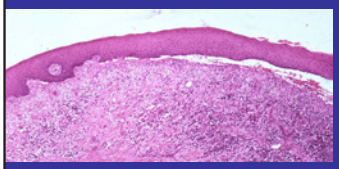
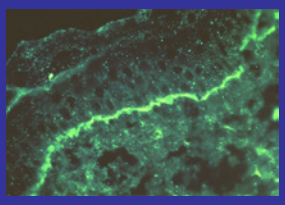
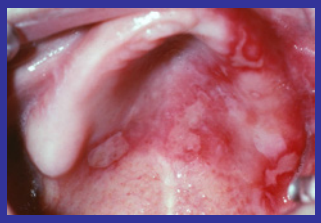
PEMPHIGUS VULGARIS

PEMPHIGOID

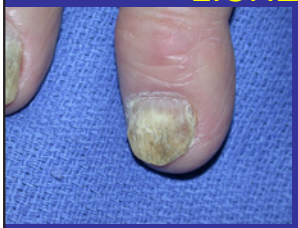
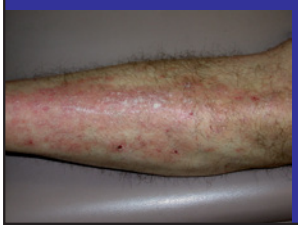
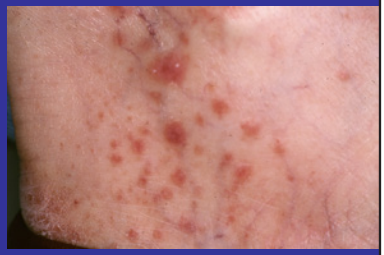
PEMPHIGOID

LICHEN PLANUS

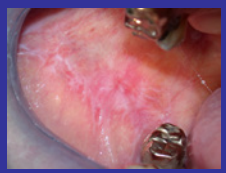
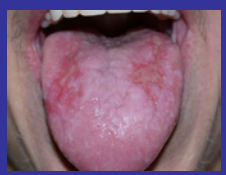
- INITIALLY DESCRIBED IN 1869 AS INFLAMMATORY SKIN CONDITION
- MIDDLE AGED ADULTS
- F > M
- PURPLE POLYGONAL PRURITIC PAPULES
- WICKHAM' S STRIAE

LICHEN PLANUS

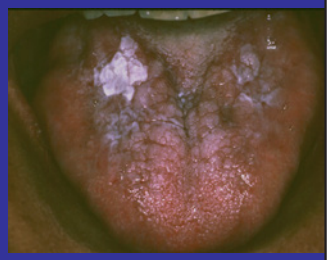
LICHEN PLANUS

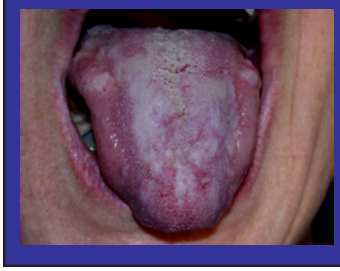
- RETICULAR
- EROSIVE

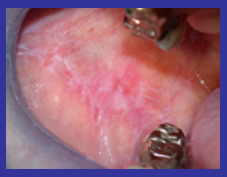
LICHEN PLANUS

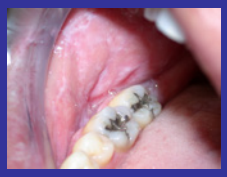
- PLAQUE LIKE

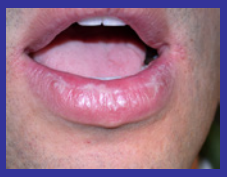


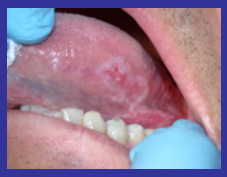


LICHEN PLANUS

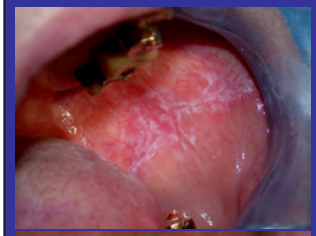


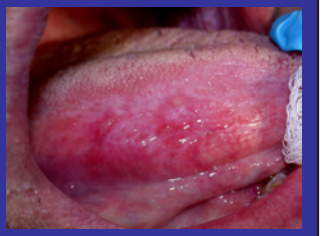


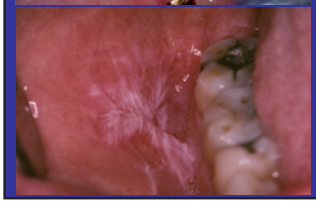


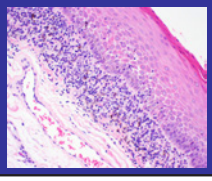


LICHEN PLANUS



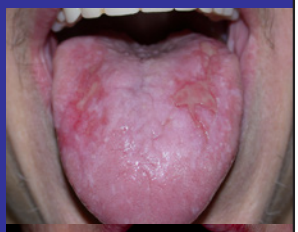


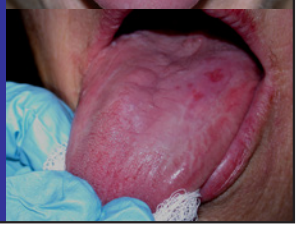


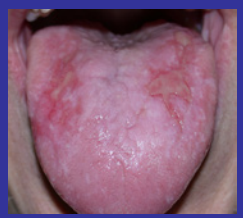


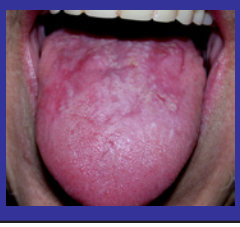
LICHEN PLANUS

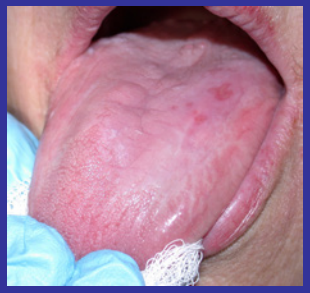
- ASSOCIATIONS
  - LICHENOID REACTIONS TO AMALGAM
  - HEPATITIS B/C
- TREATMENT
  - TOPICAL
    - STEROIDS
    - NON-STEROID
      - TACROLIMUS
  - SYSTEMIC
    - STEROIDS
    - HYDROXYCHLOROQUINE







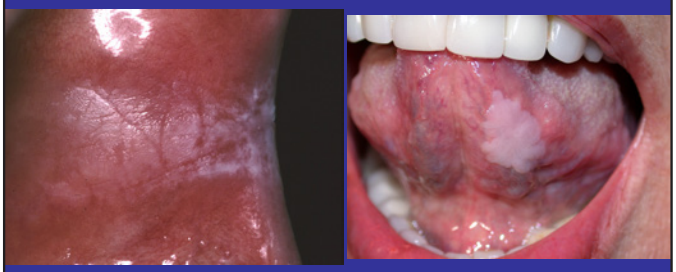




LICHEN PLANUS

- PROGNOSIS
  - CHRONIC
  - NO CURE BUT MANAGEABLE
  - NO SPECIFIC INCREASED RISK OF MALIGNANCY
    - ? EROSIVE TYPE

LEUKOPLAKIA



LEUKOPLAKIA

- LEUKOPLAKIA - WHITE PATCH
- WHO
  - A WHITE PATCH OR PLAQUE THAT CANNOT BE RUBBED OFF OR CHARACTERIZED CLINICALLY OR PATHOLOGICALLY AS ANY OTHER DISEASE
- STRICTLY A CLINICAL TERM - NO CORRELATION TO MICROSCOPIC FEATURES

LEUKOPLAKIA

LOCATION

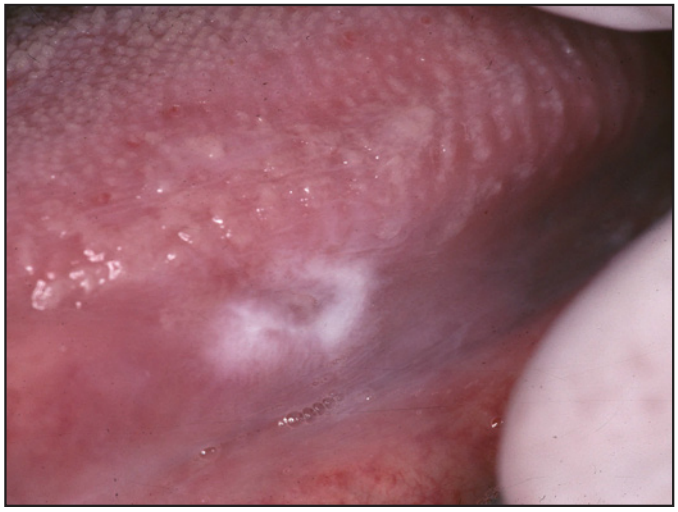
• Mandibular mucosa/sulcus	25.2%
• Buccal mucosa	21.9%
• Maxillary mucosa/sulcus	10.7%
• Palate	10.7%
• Lip	10.3%
• Floor of mouth	8.6%
• Tongue	6.8%
• Retromolar pad area	5.9%

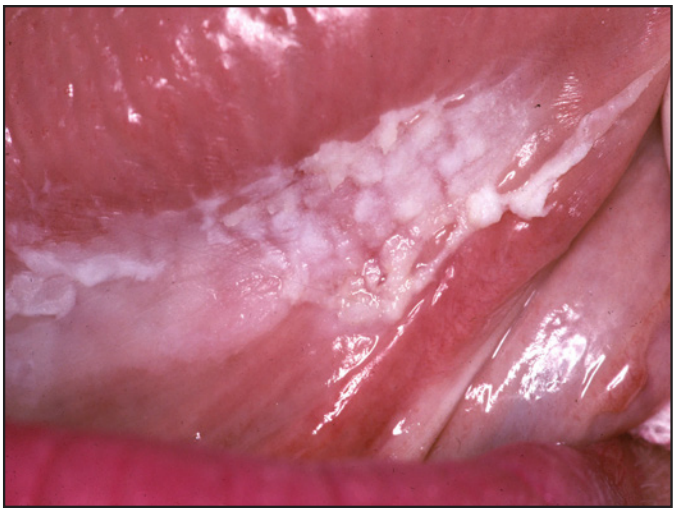
LEUKOPLAKIA

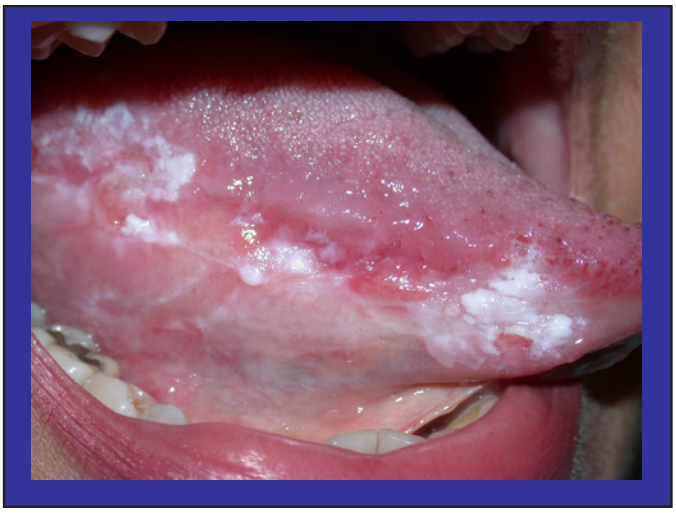
SITE	DYSPLASIA OR CARCINOMA (%)
FLOOR OF MOUTH	43
TONGUE	24
LOWER LIP	24
PALATE	19
BUCCAL MUCOSA	17
VESTIBULAR MUCOSA	15
RETROMOLAR PAD	12

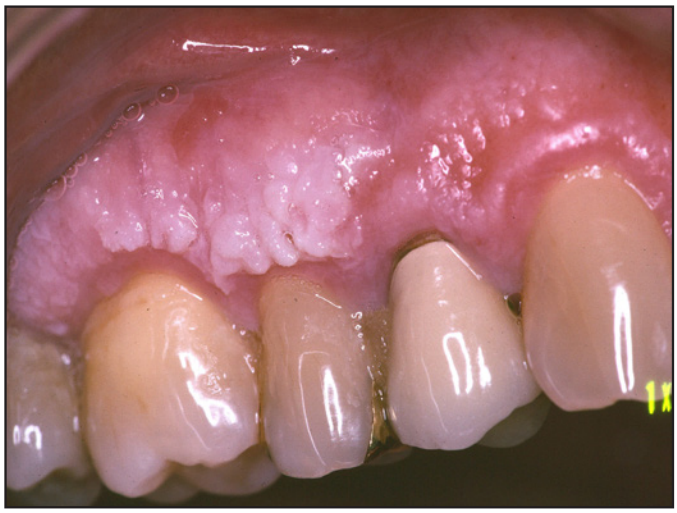
LEUKOPLAKIA

- Histologic Diagnosis
  - Squamous Cell Carcinoma — 7.6%
  - Carcinoma in-situ
  - Severe Dysplasia
  - Mild to Moderate Dysplasia — 12.2%
  - Hyperkeratosis/ No Dysplasia — 80.1%



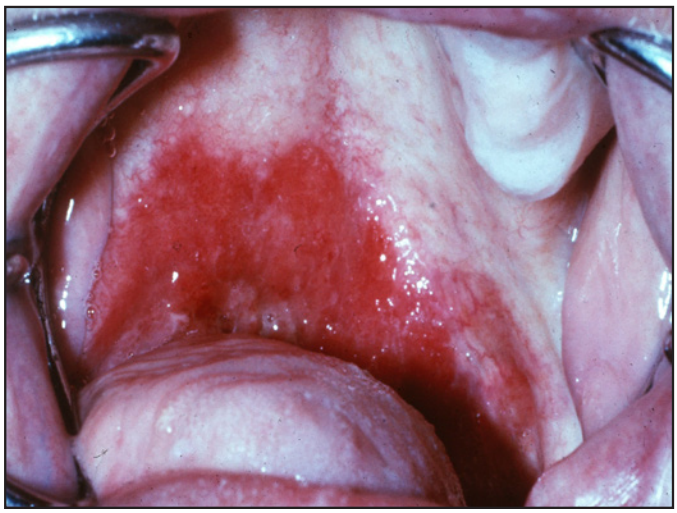


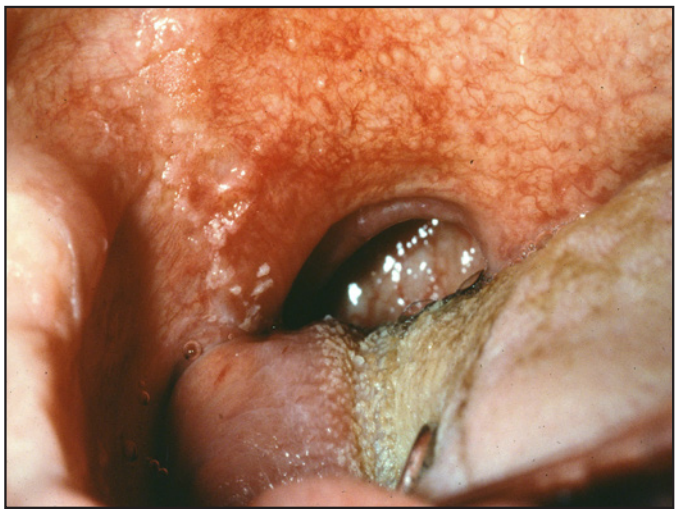


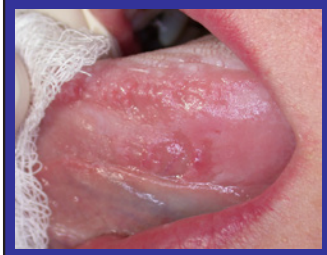


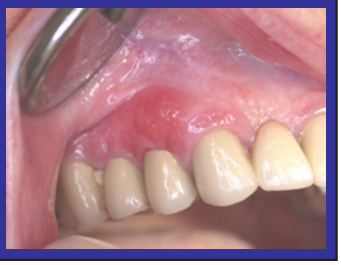
ERYTHROPLAKIA

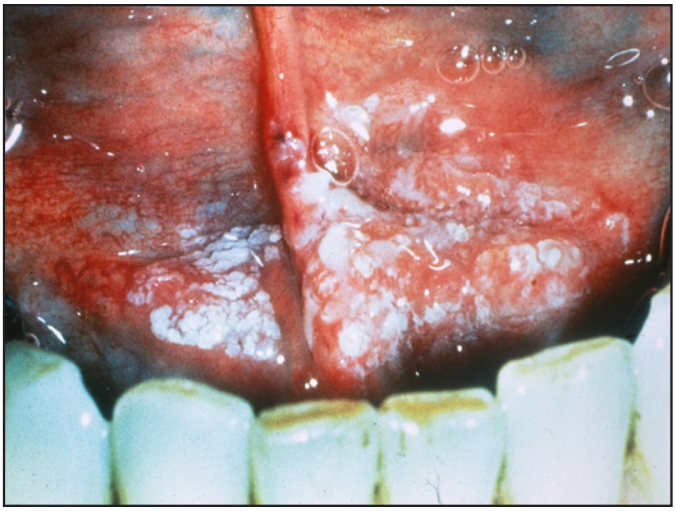
- A RED PATCH THAT CANNOT BE CLINICALLY OR PATHOLOGICALLY DIAGNOSED AS ANOTHER CONDITION
- PROPOSED ETIOLOGY SIMILAR TO SQUAMOUS CELL CARCINOMA
- CAN BE ASSOCIATED WITH LEUKOPLAKIA











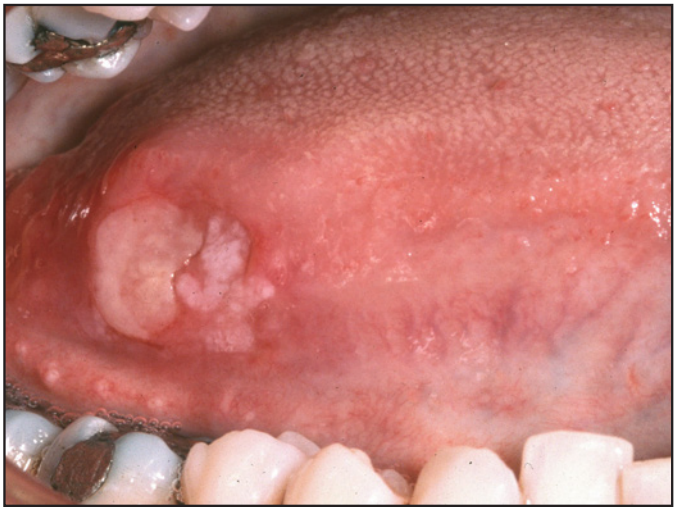
ERYTHROPLAKIA

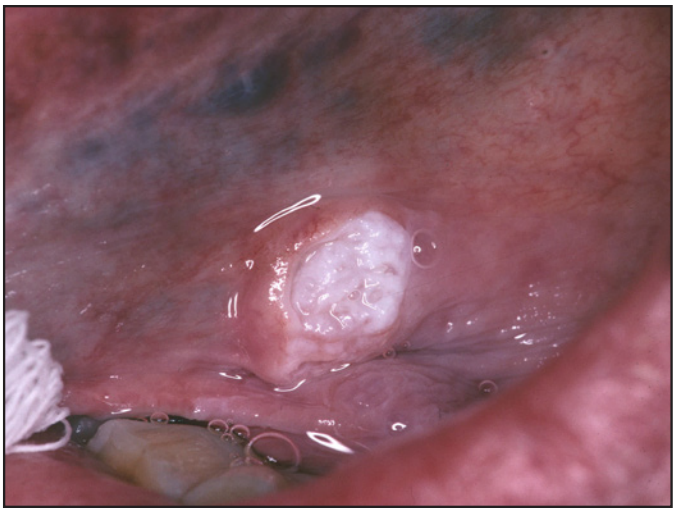
- DIFFERENTIAL DIAGNOSIS
  - MUCOSITIS
  - ERYTHEMATOUS CANDIDIASIS
  - VASCULAR LESIONS
- TREATMENT AND PROGNOSIS
  - BIOPSY !!! - ESPECIALLY ON FLOOR OF MOUTH AND TONGUE
  - RECURRENCE COMMON
  - LONG TERM FOLLOW - UP NECESSARY
  - DEFINITIVE TREATMENT DEPENDS ON HISTOPATHOLOGIC DIAGNOSIS

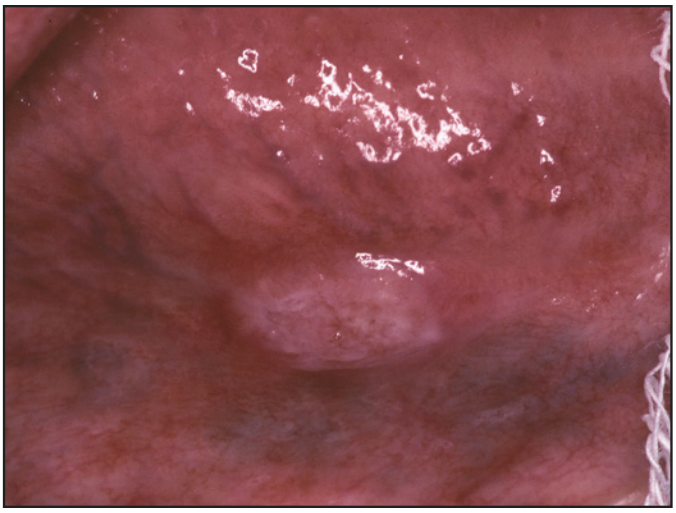
SQUAMOUS CELL CARCINOMA

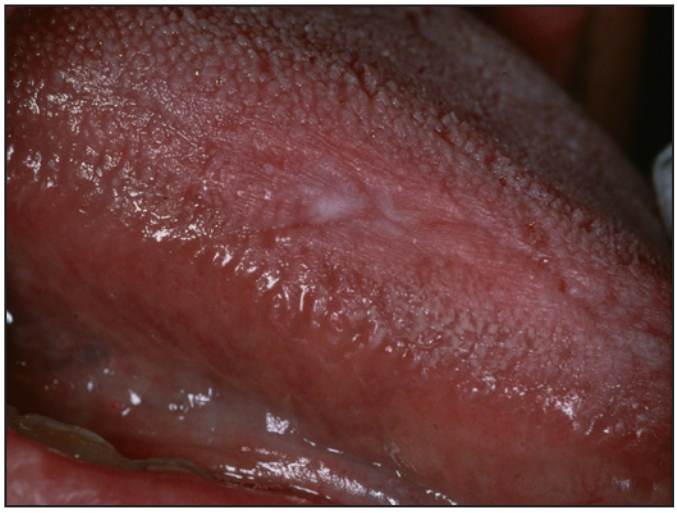
SQUAMOUS CELL CARCINOMA

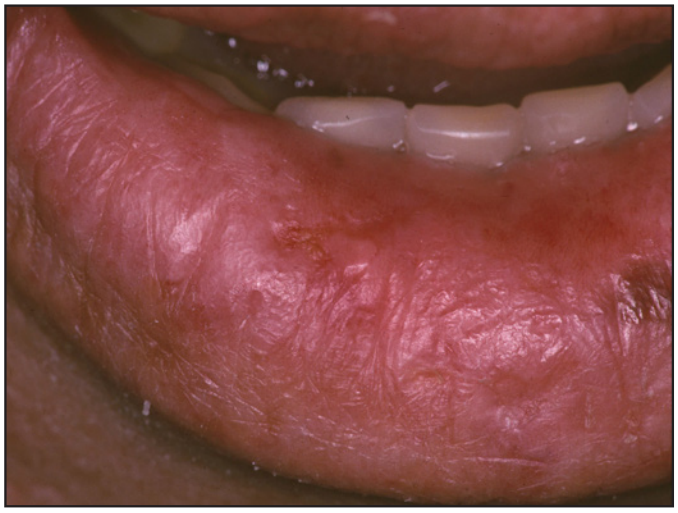
- CLINICAL FEATURES
  - MINIMAL PAIN OR DISCOMFORT
  - DELAY IN SEEKING CARE
  - SEVERAL MONTHS UNTIL DIAGNOSIS
    - EXOPHYTIC - IRREGULAR SURFACE USUALLY INDURATED
    - ENDOPHYTIC - ULCERATED, DEPRESSED ROLLED BORDER - INFILTRATION UNDER MUCOSA
    - LEUKOPLAKIC
    - ERYTHROPLAKIC - SPECKLED

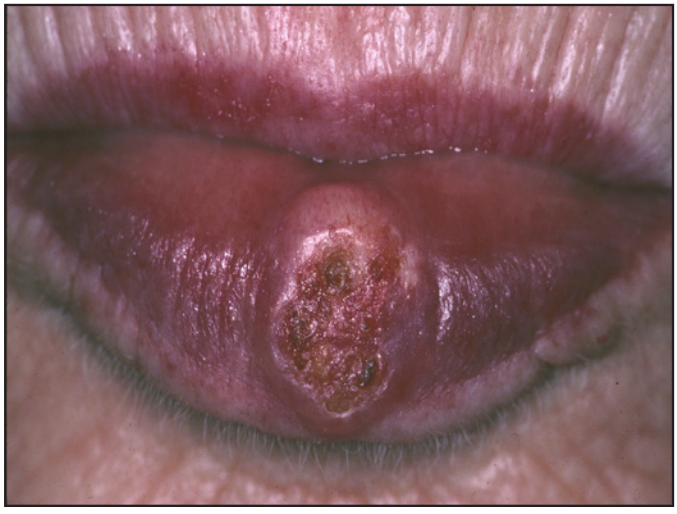


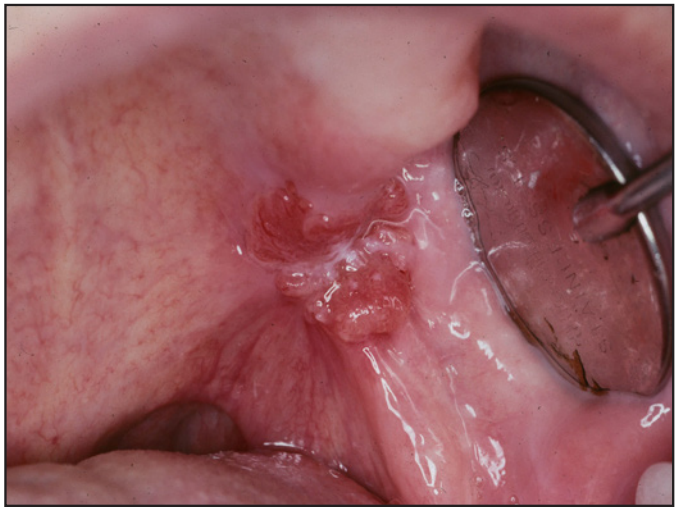


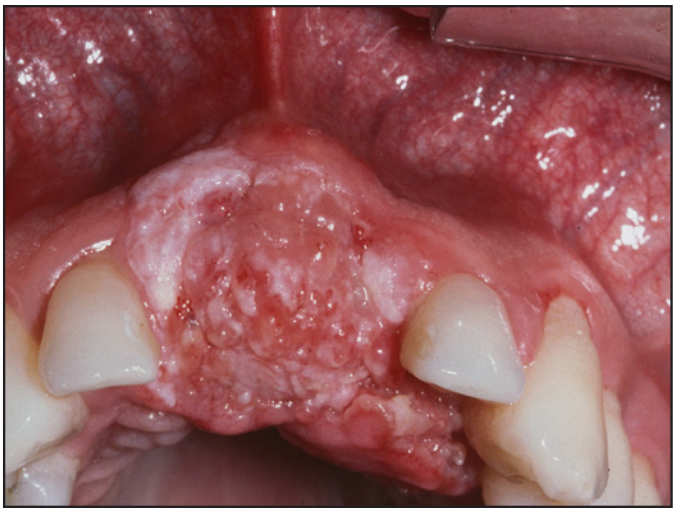


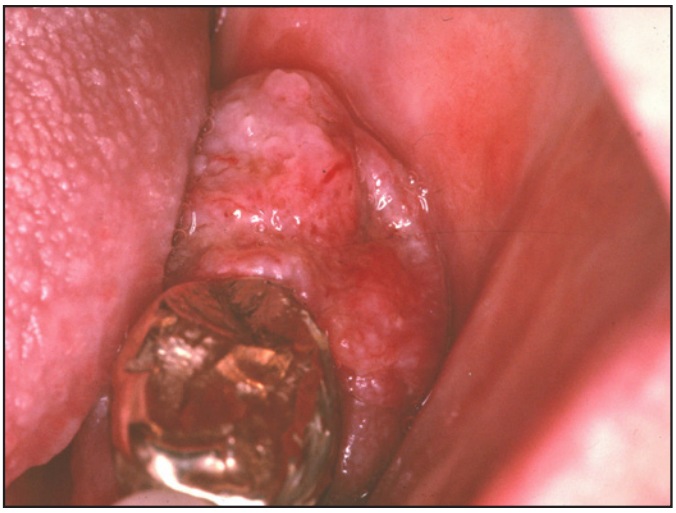


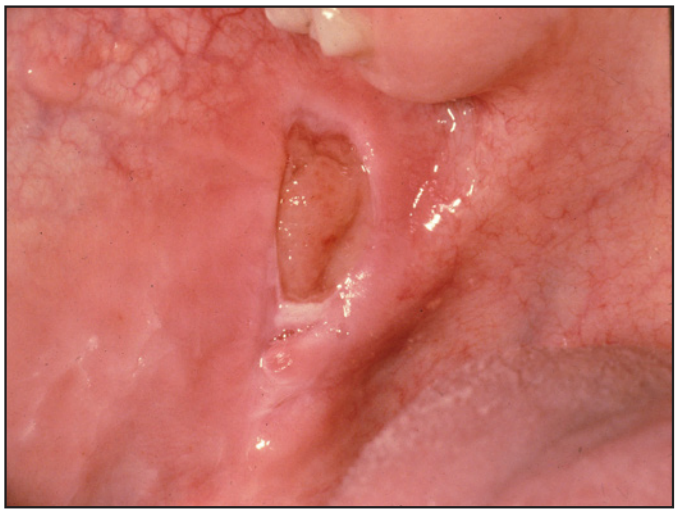


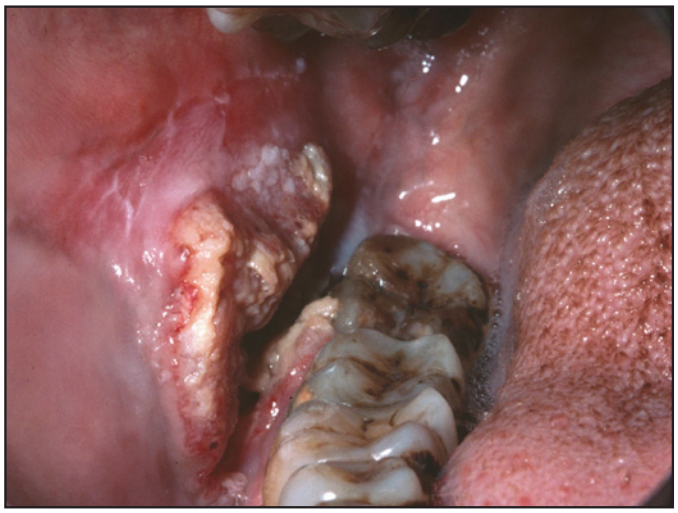


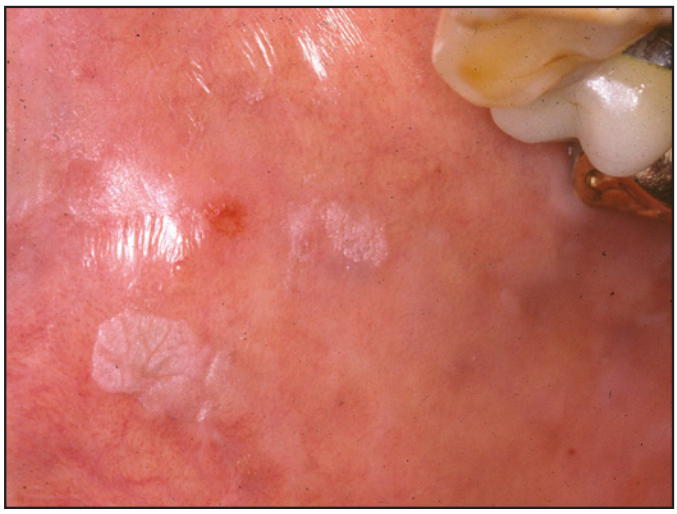






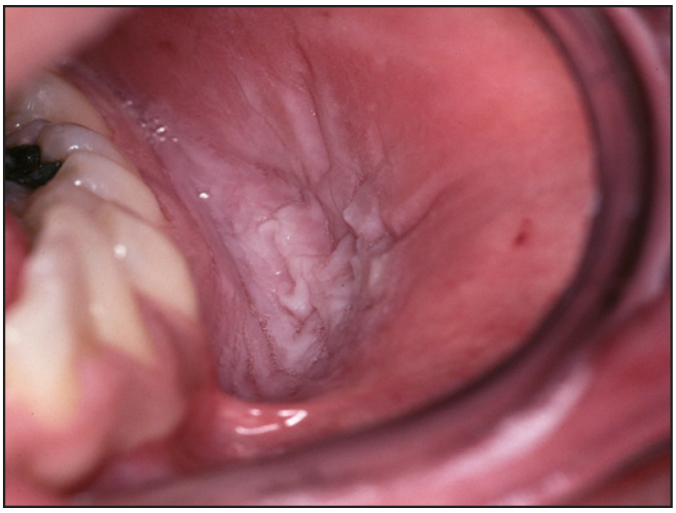


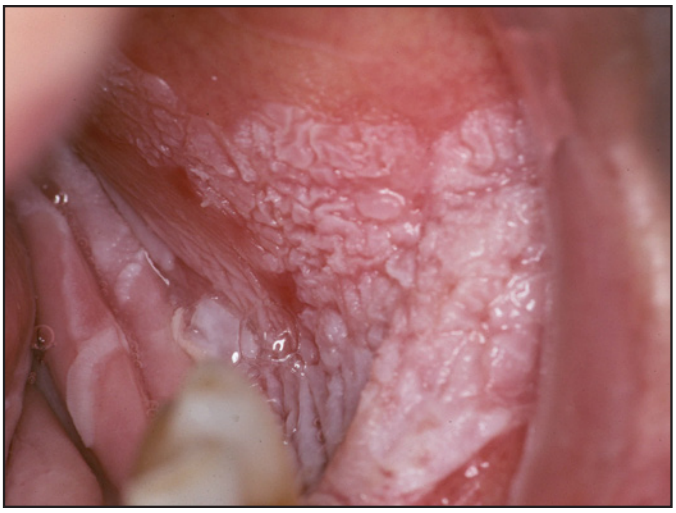


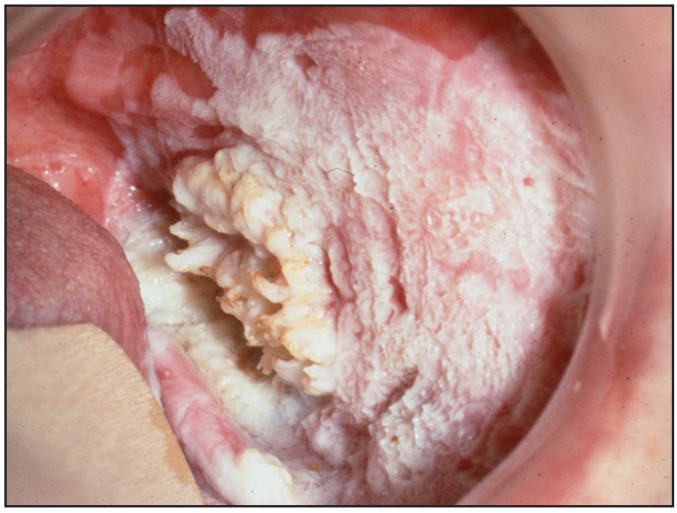


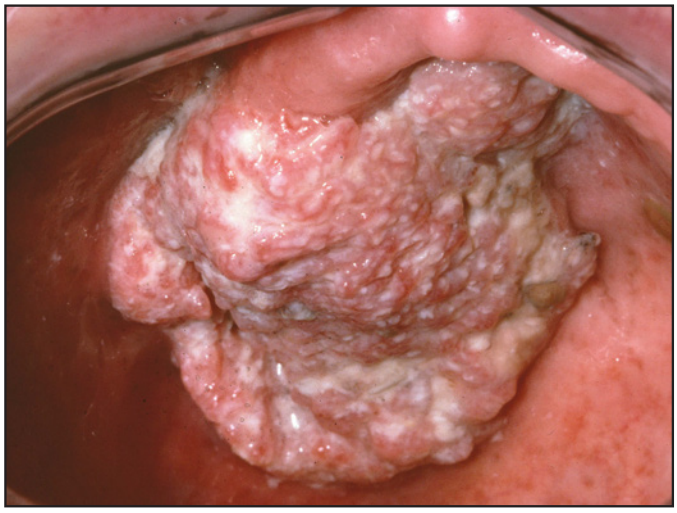
VERRUCOUS CARCINOMA

- LOW GRADE VARIANT OF ORAL SQUAMOUS CELL CARCINOMA
- 1 - 10 % OF ORAL CARCINOMAS
- MOST DIAGNOSED IN SMOKELESS TOBACCO USERS
- 20 % IN NONUSERS
- MANDIBULAR VESTIBULE, BUCCAL MUCOSA, HARD PALATE









SELF EVALUATION

Red, White and Ulcerative Lesions

1. Which of the following can present as a white patch upon initial examination?

a. Traumatic keratosis
b. Plaque like lichen planus
c. Both
d. Neither

2. Verrucous carcinoma is a high grade malignance with frequent metastasis.

3. Most oral cancers diagnosed are associated with history of alcohol and tobacco use.

4. Topical steroids are often the first line treatment recommendation for management of lichen planus.

5. Most biopsies of leukoplakias show high grade dysplasia.

Answer Key: 1. C, 2. F, 3. T, 4. T, 5. F

Steven M. Katz, DMD, MAGD

Steven M. Katz, DMD, MAGD, of Jericho, New York, had a thriving private practice and then experienced a series of setbacks, including two years of disability. A student of practice management techniques and a recipient of a degree in business and finance, he implemented a number of goals and strategies which enabled him to triple the revenue of his practice in just a few years. Dr. Katz founded Smile Potential Dental Practice Coaching to help his professional colleagues optimize their practices' culture and systems. He is a Master of the Academy of Dentistry, a Fellow of the International College of Dentists, and an attending at North Shore University Hospital. Dr. Katz was also team dentist for the New York Jets for 10 years, a dental consultant to Fox News, a recipient of multiple speaking awards, and is the author of *They Didn't Teach Us THAT in Dental School*.

You may contact Dr. Katz with your questions and comments at (516) 524-7573, or by email at DrKatz@smilepotential.com.

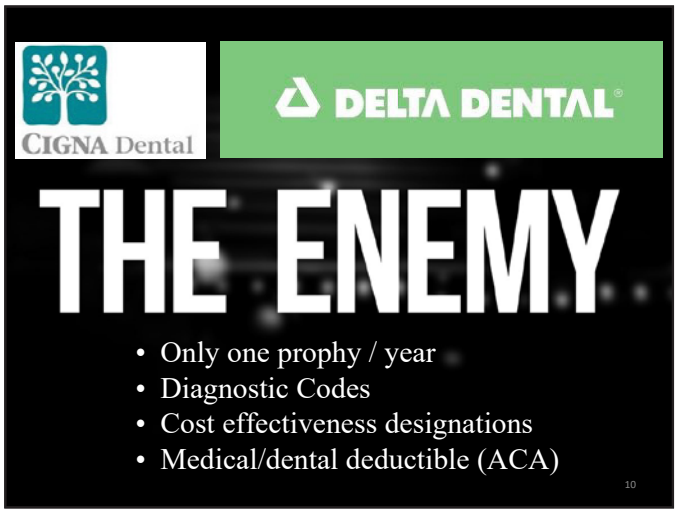
Smile Potential Practice Growth Coaching
Steven M. Katz, DMD, MAGD, FICD
https://smilepotential.com
coaching@smilepotential.com
516-599-0214

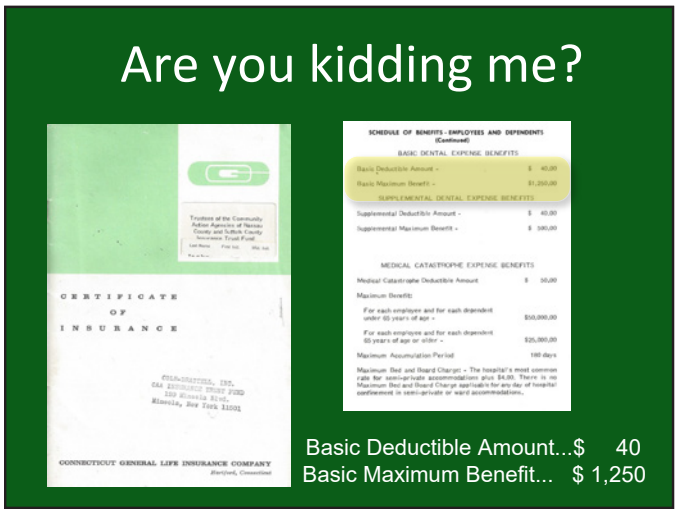
Dental Practice Success in a Challenging Environment


COMMODITIES
Charmin
ULTRA STRONG
SAVE MORE
Bounty
DAWN
Tide


CVS/pharmacy
smile
DIRECT CLUB
NEW


THE FUTURE OF SMILE DESIGN
BRIGHTER IMAGE LAB
$149
#1 ALTERNATIVE
BRACES
VENEERS
BRIGHTER IMAGE LAB.COM


CIGNA Dental
DELTA DENTAL
THE ENEMY
• Only one prophy / year
• Diagnostic Codes
• Cost effectiveness designations
• Medical/dental deductible (ACA)
10

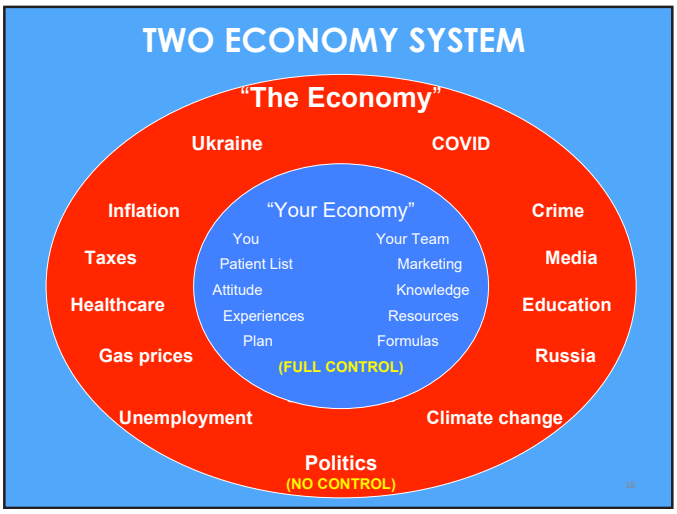

Are you kidding me?
CERTIFICATE
OF
INSURANCE
CONNECTICUT GENERAL LIFE INSURANCE COMPANY
SCHEDULE OF BENEFITS - EMPLOYEES AND DEPENDENTS
BASIC DENTAL EXPENSE BENEFITS
SUPPLEMENTAL DENTAL EXPENSE BENEFITS
MEDICAL CATASTROPHE EXPENSE BENEFITS
Basic Deductible Amount...$ 40
Basic Maximum Benefit... $ 1,250


2021: The Year Of The
Bankrupt Dentist
by Graig Presti
"I've noticed a recent uptick in dentists on the verge of bankruptcy…
…and it's happening faster than anyone expected."
Graig Presti, Marketing Guru
The Profitable Dentist Newsletter
Dentists all over North America go bankrupt every day. I talk to thousands every year. Bankruptcy can sneak up FAST on a private practice, one day things are fine, then a year later…boom… you're in a tail spin.
I've noticed a recent uptick in dentists on the verge of bankruptcy… pleading for my help. Unfortunately for them, it's too late.
A year ago, sure…things were "fine". But times are changing, and facts for this occurrence (but are ignored by 99% of dentists who refuse to change):
1. Corporate dental practices have been invading cities and breaking private practices over their knees in a matter of months, regardless of market size (urban or rural).
2. Patients are spending less money than ever (hoarding cash due to economic uncertainty, looming economic policies, employment uncertainty
Let's save this industry from its slow, lengthy undoing and raise it up to greatness again. I want to help you put an action plan together to fight this.
One of my private clients (who will remain nameless) is already breaking his competition in half … buying practices, just killing practices that
12

"PUTIN, BIDEN, UKRAINE & Now The Russian/Chinese Alliance Has Sealed The Financial Fate Of The Solo Dentist. "At Least ⅓ Of Solo Dentists Will Go Bankrupt In The Next 18 Months Without This Information..."

"81.7% Of Solo Dentists Lack The 3 Critical Survival Strategies Needed To Weather The Storm And Come Out Mostly Unscathed... This Is Your Final Warning."

** Registrations Are Limited to ONLY 350 2 Doctors.**




CONTROL YOUR ECONOMY
MEDIA
INTERNET
TELEVISION
RADIO
MAGAZINES
NEWSPAPERS


RAISE
YOUR
STANDARDS


PATIENT PERCEPTION OF
VALUE


DIFFERENTIATE
Smile Potential

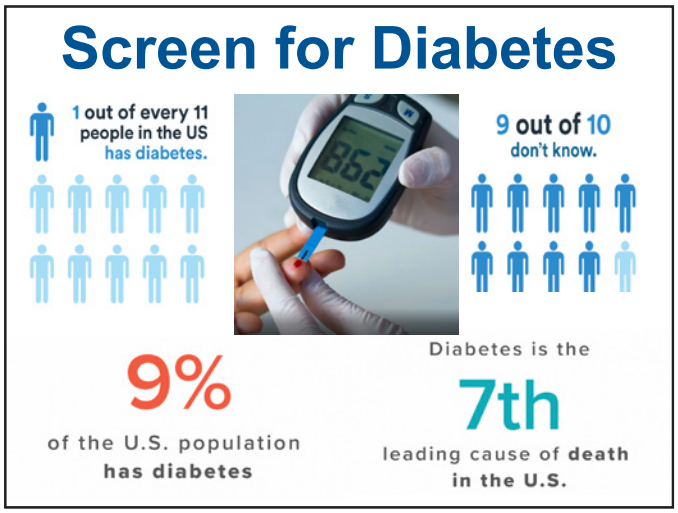

The key to success is
COMMUNICATION

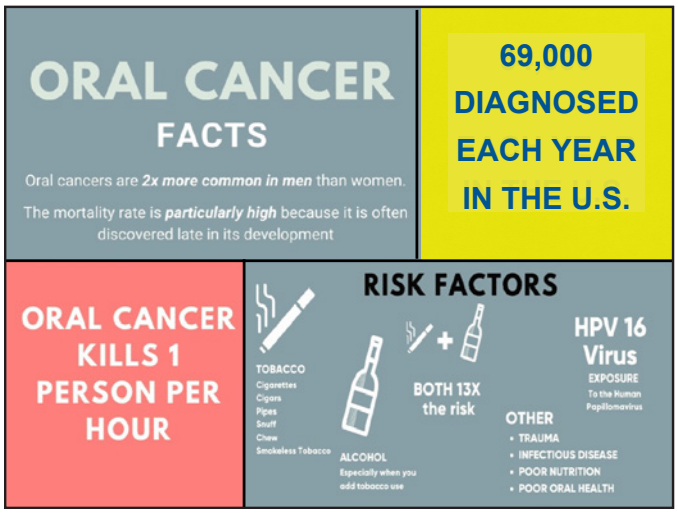

People are your #1 asset.
Keep them happy!
CULTURE


You are about to enter an
A Team Driven Practice
The goal of empowerment is to create a team
EMPOWERMENT ZONE
that drives the practice, rather than having to be pulled along.
25


Do you want to make a difference?


Take patients' Blood Pressures…
Routinely
Screen for Diabetes


Screen for Diabetes
1 out of every 11 people in the US has diabetes.
9 out of 10 don't know.
9%
of the U.S. population has diabetes
Diabetes is the
7th
leading cause of death in the U.S.


ORAL CANCER FACTS
Oral cancers are 2x more common in men than women.
The mortality rate is particularly high because it is often discovered late in its development
69,000 DIAGNOSED EACH YEAR IN THE U.S.
ORAL CANCER KILLS 1 PERSON PER HOUR
RISK FACTORS
TOBACCO
Cigarettes
Cigars
Pipes
Snuff
Chew
Smokeless Tobacco
ALCOHOL
Especially when you add tobacco use
BOTH 13X the risk
HPV 16 Virus
EXPOSURE
To the Human Papillomavirus
OTHER
• TRAUMA
• INFECTIOUS DISEASE
• POOR NUTRITION
• POOR ORAL HEALTH


Brittany


DENTISTS DO
AMAZING
THINGS


WE HAVE
THE POWER
TO CHANGE
LIVES !!!


SMILE POTENTIAL
DENTAL PRACTICE COACHING
coaching@smilepotential.com
516-599-0214


If you would like any additional information about anything discussed in this program, or copies of any of the slides or resources mentioned…
Use QR code…
or send email to:
coaching@smilepotential.com
Include name and phone number.

SELF EVALUATION

Dental Practice Success in a Challenging Environment

1. T/F - Challenges in life can only make you bitter.

2. DSO's can have the following effects on the Dental community

- **a.** They create viable opportunities to sell a practice
- **b.** They compete for patients in the community
- **c.** They create entry level jobs for graduating dentists
- **d.** They increase the public's awareness of dental services
- **e.** All of the above

3. Baby Boomers:

- **a.** Hate going to the dentist
- **b.** They do not like to spend money
- **c.** Spend money on things that make them look and feel better
- **d.** Are getting too old for cosmetic dental procedures

4. T/F - In the "Two-economy system" it makes sense to concentrate on trying to change the global situations and conditions around us.

5. Strategies which improve the likelihood of success in a challenging environment include:

- **a.** Raising your standard of care
- **b.** Increasing patients' perception of value in the care
- **c.** Improving communication skills
- **d.** Fostering an improved office culture
- **e.** Embracing the oral-systemic connection
- **f.** All of the above

6. T/F - Patients covered by Medicaid may present for cosmetic treatment even though it will not be covered by their insurance.

7. Of the following procedures, all but one of them should be included in the screening and evaluation of dental patients.

- **a.** Take routine blood pressures
- **b.** Perform vision and hearing screenings
- **c.** Screen for elevated blood-glucose
- **d.** Do a thorough head, neck and oral cancer screening

Answer Key: 1. F, 2. E, 3. C, 4. F, 5. F, 6. T, 7. B

Robert Convissar, DDS

Robert Convissar, DDS, of New York, New York, is a pioneer in the field of laser dentistry. One of the first dentists in the world to incorporate lasers into general practice he has close to 4 decades of experience with CO2, Diode, Erbium, Nd.YAG and PBM wavelengths. He has authored over twenty peer-reviewed papers and 7 laser textbooks. As an international lecturer, he has delivered close to 400 Laser Certification and Laser Tongue Tie Certification courses worldwide. He practices laser-assisted dentistry in New York City. He is the only dentist in the world to have the triad of awards: Diplomate of the American Board of Laser Surgery, Fellow of the American Society of Laser Medicine and Surgery, Master of the Academy of Laser Dentistry, as well as being a Fellow of the Academy of General Dentistry His seminal textbook *Principles and Practice of Laser Dentistry*, now in its 3rd edition, has been the standard textbook on laser dentistry for over a decade. He practices laser dentistry in New York City, where he also serves as Director of Laser Dentistry at New York Presbyterian Hospital of Queens.

You may contact Dr. Convissar with your questions or comments at laserbobdds@gmail.com.

Choosing the Right Dental Laser: Technology, Applications, and Clinical Outcomes

Robert Convissar, DDS

How To Choose The Best Laser For Your Practice

We Know In Real Estate The 3 Most Important Things are:
Location
AND
Location
AND
Location

In Laser Dentistry The 3 most Important Things Are
Training
AND
Training
AND
Training

Dentists Always Ask Me:
"What's The Best Laser For My Practice? For My Patients? For My Bottom Line?"

The Answer Is Simple:
It's The Laser That:

1) GIVES YOU THE BEST, MOST COMPREHENSIVE TRAINING (more on training in a minute)....*AND*

2) Allows You To Perform ***The Most New Procedures....instead of referring them out***

AND

3) Saves You The Most Valuable Commodity You Have In Your Office...
(what's that?)
Think about restaurants.....

What's the ONLY thing we sell?

We don't sell crowns
We don't sell prophys
We don't sell implants

There is only ONE THING we sell:

CHAIR TIME!!!!!

Anything that saves me chair time will make me money!!!

4) Has The LOWEST OPERATING EXPENSE

Never Look At Purchase Price
Look ONLY At Operating Expense

Will The Laser Companies Tell You What The True Operating Expense Of A Laser Is?

HECK, NO!!!
If They Did, You Would Not Buy It!!

Before We Even Ask What's The Best Laser, Let's
Tackle Something The Laser Companies
WILL NEVER DISCUSS WITH YOU – EVER!!!!

Purchase Price vs. Operating Expense

Did You Know That Diodes Are Among The MOST EXPENSIVE LASERS On The Market!!!

Really? Aren't They Around $5K...and Other Lasers Are $30K - $100K Or More???

Please don't confuse
`operating expense`
with
`purchase price`

I am buying a new car tomorrow – deciding between Car A and Car B
both cost $40k

PURCHASE PRICE is $40k
Whats the ***OPERATING EXPENSE?***

Car A – regular gas
Car B – premium gas
Difference in price $1/gallon.
I drive 10,000 miles/year
I keep my cars for 5 years and they get 20 miles/gallon

That's $500 more in gas for car B Per Year...or $2500 over 5 years

The Premium Gas Car Has Run-Flat Tires, Which Cost Around $500 More Than Regular Tires

Purchase price of a diode:
$5000

Operating cost of a diode?
Fasten your seat belts!

True Operating Cost of a Diode Laser

Lets say the cost of a disposable tip is $8

(some tips are more expensive than that…but lets be conservative here)

$8 x 10/day =
$80…..WHAT????

$80 x 4 = $320/wk

.

$320 x 4 = $1280/month

$1280 x 10 months=
$12,800/year

Purchase Price
$5000

Op. Cost =$12,800/yr.
+
the cost of the laser - $5K
for a total of $17,800

After 2 years, Op. Cost =
$17,800 + $12,800=
$30,600

After 3 years,
Op. Cost = $30,600
+
$12,800=
$43,400

So.....whats the more economical laser:
the $5000 device with RIDICULOUSLY HIGH OP. EXP.
OR
the $30,000 device With An Op. Exp of ZERO (If You Buy The Right Device) ?

Moral of the story:
NEVER EVER look at purchase price
ALWAYS find out op. cost

Questions You MUST ASK Because The Laser Companies Will NOT Volunteer This Info:

How Long Is The Factory Warranty?

How Much Is an Extended Warranty After The Factory Warranty Expires?

What Does the Extended Warranty Cover?

What Is Consumable/Disposable? What Do I Throw Out After Every Patient?

Tell Me About The Delivery System

What About Software Updates? Will You Guarantee That You Will Support This For AT LEAST FIVE YEARS????

If You Do Not Yet Own A Laser, After You Have Answers To The Op. Exp. Questions, The Most Important Question To Ask Is:
What Kind Of COMPREHENSIVE Laser Training Do You Provide?

IT MUST BE A CERTIFICATION COURSE GIVEN BY A UNIVERSALLY RESPECTED ORGANIZATION....
NOT BY THE LASER COMPANY

Certification Courses Given By Companies Are Biased Towards That Device – You DO NOT Get The Truth

Certification Courses Given By Organizations That Take Money From Laser Companies (Like The Academy of Laser Dentistry, for example) May ALSO Be Biased

Courses where there is only ONE manufacturer or ONE wavelength are nothing more than thinly veiled sales seminars. You MUST have multiple laser wavelengths/manufacturers at a course

Look around your operatory:
Digital Impression Scanners
Botox®
Digital Radiography
CBCT
Implant Placement

If you think you will become a millionaire overnight by using the laser for a little troughing and a little perio pocket treatment, you are dead wrong

How Much Can You Charge P/P For Laser Troughing??
How Can You ETHICALLY Perform Perio Pocket Tx???

You will never have a quick ROI if you just do a little troughing and pocket therapy.

Use your device to its fullest. Maximized use means Maximized profits

Learn how to perform procedures you currently send out

You need to maximize the # of procedures you perform with the laser – OPEN your front door to more patients by performing more procedures.....
CLOSE your back door by referring fewer patients!

Procedures You Are Not Doing

Aphthous Ulcer	$125 x one/week = $500/mo.
Biopsy	$500 x one/month = $500/mo.
Frenectomy	$500 x 2/month = $1000/mo.
S.T. Crown Length	$500 x 1/ week = $2000/mo.
Operculectomy.	$250 x 1/month = $250/mo.
Vestibuloplasty	$600 x 1/month = $600/mo.
Smile Lift/Zenith	$750 x 1/month = $750/mo.
Canine Exposure	$250 x 1/month = $250/mo.
Perio Pocket Tx	$500 x 4/month = $2000/mo.

TOTAL MONTHLY INCOME = $7850
MULTIPLY BY 10 MONTHS = $78,500

More Procedures

ONE BABY/MONTH	$750/MO = $7500/YR
ONE GRAFT RESURFACING/QTR	$500 EA. = $2000/YR
ONE PERIIMPLANTITIS TREATMENT/QTR	$750 EA. = $3000/YR

Total from this page = $12,500/year
Total from previous page = $78,500
Total increase in income = $91,000

How do you get the extra $91,000/year?
Simple one word answer:

EDUCATION!!

Education and Hands-on Training is CRITICAL for Successful Laser Use

Education and Hands-on Training Are the Keys to maximizing ROI

Post -op discomfort
Delayed healing
Thermal damage adjacent and subjacent to the surgical site are ***not acceptable*** results

How Do You Ensure That You Do NOT Inadvertently Create
Post-Op Discomfort
Delayed Healing
Thermal Damage
If You Are Not FULLY TRAINED?

The More Training You Receive With The Laser, The More Procedures You Will Be Able To Perform And The More Successful You Will Become

The Better And More Comprehensive The Training, The More Income You Will Generate

A good laser education course ***must*** include the following:

Initial (Non-Surgical) Periodontal Pocket Therapy

Periodontal Surgery (Frenectomy, Gingivectomy)

Regenerative Periodontal Surgery

Implantology – Including Peri-implantitis/Perimucositis

Fixed Prosthetics – Including Smile Design around Laminates, Gingival Troughing, Soft Tissue Crown Lengthening, Ovate Pontic Site Formation, Emergence Profile Maintenance, (that's also critical in Implantology as well as Cosmetic Dentistry!) etc.

Removable Prosthetics and Pre-prosthetic Care

Pediatric Dentistry and Orthodontics

NEONATAL Dentistry

Oral Surgery/Oral Pathology/Oral Medicine/Biopsy

Esthetic/Cosmetic Dentistry

Endodontics

Practice Management

Snoring/Sleep Apnea/Airway Dentistry

Melanin Depigmentation

PBM

AND MORE!!

Anesthesia-Free Operative Dentistry – is there such a thing?

Osseous Periodontal Surgery

Osseous Crown Lengthening

Desensitization

Laser Physics – Laser Tissue Interaction

During the hands-on segment of the course, attendees MUST perform ***at least all of*** the following procedures (***if not more!!!!***)

Aphthous Ulcer Tx
Biopsy
Crown Lengthening
Frenectomy/TT Release
Gingivectomy
Hand-Speed Exercise
Hemostasis
Perio Pocket Therapy
Spot Size Exercise
Troughing
De-epithelialization of Flaps (Perio/Implant)
AND MORE!!!

If you took a laser course and didn't do ALL of these procedures– ***and more***, during the hands-on you were *CHEATED*

If you bought a laser and did not receive ***three full days*** of education that included all of the material on the preceding slides, you were cheated by the laser company

If you bought a laser and did not have a full day of in-service with a laser specialist, you were cheated by the laser company

CRITICAL QUESTIONS TO ASK BEFORE YOU BUY:
When the Laser Is Delivered....
Who Will Be Training Me?
Who Will Be Training My Hygienist?
Who Will Be Training My Assistant? (Break down/Set-up)
Who Will Be Training My Front Desk? Billing/Language

And I Assume The Trainer Will Be In My Office For A Full Day
AND
Will Guide Me In Over The Shoulder Procedures
AND
Will Be Available for Phone/FaceTime Training PRN AT NO COST!!!

If you were not given a copy of the American Dental Association Clinical Practice Guidelines regarding laser use

For Canadians:
If You Did Not Get The ***Clinical Practice Guidelines From the Royal College of Dental Surgeons of Ontario***, You Were REALLY REALLY TRULY CHEATED!!

You Need Certification From A Bona-Fide Laser Organization That DOES NOT TAKE ANY MONEY From Any Laser Company

That DOES NOT ALLOW Laser Company Representatives To Be Part Of their Organization

Why Do We Even Use A Laser?

Why laser?
Hemostasis

No Suction Tip Constantly In The Way of the Surgeon's Vision=
Unparalleled Visualization of the Surgical Site=
A Clear Unobstructed View of the Target Tissue

If You Can See If Better, You Can Treat it Better

Superior Visualization = Superior Results

Superior Visualization leads to a ***faster*** procedure - critical when working on infants

Superior hemostasis = Sealing off of blood vessels and lymphatics = Less edema, which is critical when working in a space of less than 1 cubic cm.

Less edema= Less postoperative swelling= Less postoperative discomfort

Less Post-Op Discomfort = Happier Patients And More Referrals = More Success

Lasers are bactericidal
Bacteria-Free healing =
Less inflammatory response at the surgical site=
Less possibility of postoperative infection=
Faster healing

Lasers create less mechanical trauma to the tissue, which=
Less scarring
Especially Important When You Are Removing Lesions On Patient's Lips –
More On This Later If we Have Time

Zone of necrosis with a CO2 laser
25 microns
Average diameter of a human hair
50-100 microns

Zone with electrosurge – 1500 microns.....
SO....

How many wavelengths do you see?

Diode
CO2
Erbium
Nd.YAG

Diode
810 nm

CO2
Erbium
Nd.YAG

Diode
810 nm
940 nm

CO2
Erbium
Nd.YAG

Diode
810 nm
940 nm
980 nm

CO2
Erbium
Nd.YAG

Diode
810 nm
940 nm
980 nm
1064 nm

CO2
Erbium
Nd.YAG

Diode
810 nm
940 nm
980 nm
1064 nm
450 nm

CO2
Erbium
Nd.YAG

Diode
810 nm
940 nm
980 nm
1064 nm
450 nm

CO2
10,600 nm
9300 nm/9600 nm
Erbium
Er.YAG 2940 nm
Nd.YAG

Diode
810 nm
940 nm
980 nm
1064 nm
450 nm

CO2
10,600 nm
9300 nm/9600 nm
Erbium
Er.YAG 2940 nm
Er.Cr.YSGG 2780 nm
Nd.YAG 1064 nm

Diodes – SOFT tissue ONLY

ND.YAG– SOFT tissue ONLY

CO2 10,600 nm - SOFT tissue ONLY

CO2 9600/9300 nm – SOFT/HARD

Erbiums – SOFT/HARD

HOWEVER.....

What Will I Use The Laser For?

- STM?.....very very touchy subject...TBD
- Perio Regeneration Surgery?
- Fixed/Removable/Implant Prostho?
- PERI-IMPLANTITIS!!!!!
- Cosmetic Dentistry? Melanin Depigmentation?
- Operative?
- Endo?
- A Little Bit Of Everything?
- Do I See Lots Of Pedo Patients?
- Do I Want To Do Neonatal Dentistry? Etc. Etc...

First Question:Do I Want To Do Endo?

Corollary: WHAT Do I Want To Accomplish By Using the Laser For Endo?

If You Want To DECONTAMINATE (please do not say "sterilize") A Canal, Virtually EVERY Wavelength Can Do That....Simple

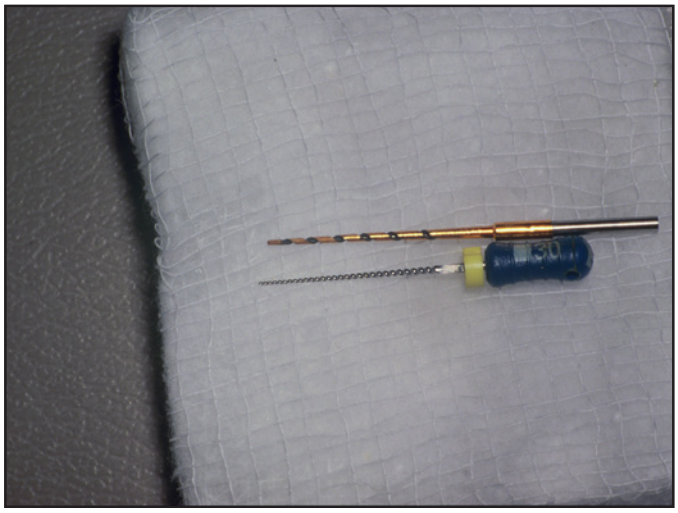
If You Want To INSTRUMENT A Canal, You Are Limited to the Erbiums:
Er.YAG
Er.Cr.YSGG

Canal Decontamination:
Place the Fiber/Tip Into The Canal Orifice
Make Certain The Canal Is Moist
NEVER LASER A DRY CANAL!!!

If You Want To Instrument A Canal:

PIPS

SWEEP
What's The Literature Say?



Next Question: Do I Want To Do Analgesia-Free Operative Dentistry

Corollary: Is There Such A Thing As 100% Analgesia-Free Operative Dentistry?

If I Want To Do Analgesia-Free Operative Dentistry, I Need An Erbium, or a Solea, Right?

WRONG WRONG WRONG

I DO 100% Of My Operative Dentistry On Deciduous Teeth
With NO INJECTION ANALGESIA

WITH MY HI-Speed Handpiece

and my PBM

And I Am Finished With A Full Quadrant of Op.Dent Before The First H.T. Laser Has Cut Through the Marginal Ridge of The First Tooth

PBM??????

Heck, Yeah PBM!!!!!!

PBM

PBM is defined as using a laser whose output power is well below surgical parameters to affect tissue

PBM
PHOTO-BIO-MODULATION

PBM

SOFT LASER
COLD LASER
THERAPEUTIC LASER
LOW LEVEL LASER
all synonyms

Diodes 100mW – 500mW

PBM

4000 Scientific Studies in the literature
Biostimulation
Pain Relief
Accelerated Wound Healing/Post Surgery
Regeneration
Immune System Enhancement
Avulsed Teeth/Trauma

I personally have used it for:
TMD
Bell's Palsy
Trigeminal Neuralgia
Dentin Hypersensitivity

Clinical Applications

- Pain reduction after surgery
- Better and faster integration of implants and bone grafts
- Analgesia for restorative procedures
- Reducing pain in TMJ arthritis and facial pain
- Nerve regeneration
- Reducing dentin Hypersensitivity
- Faster healing of soft tissue lesions; cold sores , Aphthous ulcers. Mucositis

How About:
Air Abrasion As an Alternative
To Erbiums?????

Sure!!!

Why Air Abrasion?
What Can I Use It For?

APPLICATIONS

Cavity preparations for composite restorations and small amalgams.

Partial or complete removal of composite restorations.

Re-bonding repairs of existing composite, metal and porcelain substrate restorations.

Refining and smoothing the line angles of preparations carried out with a conventional high speed hand-piece.

Removal of organic plugs from occlusal pit and fissures in preparation for occlusal sealants….fantastic for PRR

Removal of surface stains and pellicle from the facial surface of teeth to be bleached for aesthetic whitening.

Air Abrasion removes decay without damage to healthy tooth structure.

With Air Abrasion there is no heat, no smell, no vibration and no noise! Air Abrasion fillings have superior esthetics, seal and longevity.

NO SPALLATION POPPING!!!!

Air abrasion generates a cavity profile that has rounded internal as well as external line angles and creates no micro-fracturing of the enamel

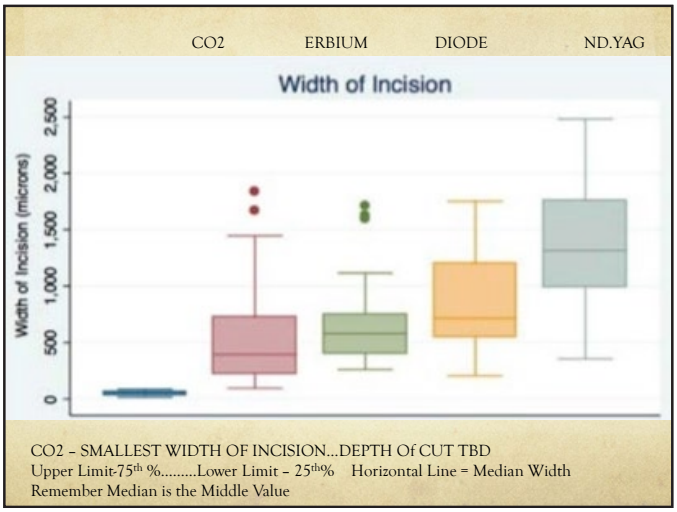
These fluid internal line angles reduce the incidence of stress risers and provide a very nice cavosurface margin to finish to with direct composite restorations- no white lines at the margins.

Many studies show Air Abrasion increases bond strengths significantly.

Let's Continue With A Discussion Of Erbiums BEFORE We Go Onto Other Wavelengths/Other Procedures You Want To Do

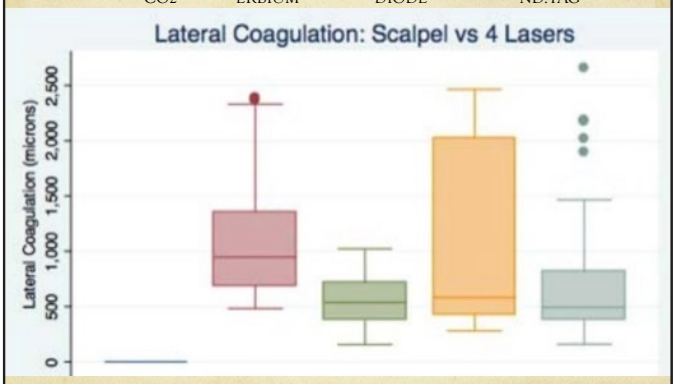
Lets Tackle Two Of The Ideal Characteristics Of A Laser

1) Accuracy/Most Conservative Incision
2) Hemostatic Ability



CO2 – SMALLEST WIDTH OF INCISION…DEPTH Of CUT TBD
Upper Limit-75th %.....Lower Limit – 25th% Horizontal Line = Median Width
Remember Median is the Middle Value

CO2 ERBIUM DIODE ND.YAG



CONCLUSION: CO2 AND DIODE GOOD HEMOSTASIS
ERBIUM AND ND.YAG NO GOOD.....BUT THERE IS MORE TO THE STORY!!

Int'l J. Of Perio. And Rest. Dent. Volume 40 # 4 pp 147-154, 2020
Evaluation Of Different Dental Laser's Ability To Congeal Pooled Blood: An In Vitro Study
Losin, Yukna, Powell, et. al.

Temperature Measurements After 30 s. of Laser Application:

Keeping in Mind Normal Body Temp. is 37 Degrees C

43 Degrees for the Diode 810
43 Degrees for the Diode 940
THAT'S 109.4 Degrees F!!!

53 Degrees (!!!) For the Nd.YAG
THAT'S 127.4 Degrees F!!
ALL OF THE ABOVE WAY OVER BODY TEMP!!

32 Degrees for the Er.Cr.YSGG
33 Degrees for the Er.YAG

31 Degrees for the CO2!!

Conclusion from Yosin/Yukna:

Compared To The Diodes and Er.Cr.YSGG, The CO2 Achieved A ***Greater Degree of Congealing*** of Blood ***At An Earlier Time Point***...The Differences Were ***Clinically and Statistically Significant***

So The CO2 Gives The BEST Hemostasis WITHOUT RAISING THE TISSUE TEMPERATURE!!!

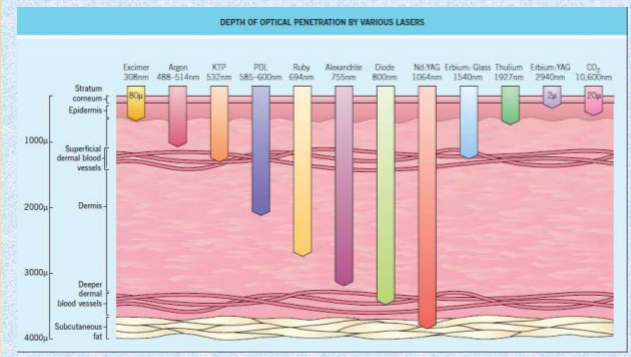
FASTER Than The Other Wavelengths!!!

Erbiums: Lousy Hemostasis
Diodes And Nd.YAGs: FRY THE TISSUE!!!!

Not What I Want!!

Now Lets Discuss DEPTH OF CUT

(we just discussed width of incision)



The depth of optical penetration for CO2 lasers is only ~20 microns, but **FRACTIONAL CO2 LASERS** can vaporize nearly full-thickness microchannels through the dermis

How About Absorption By Target Tissue?

To Discuss This, We Need To Know How Lasers Work

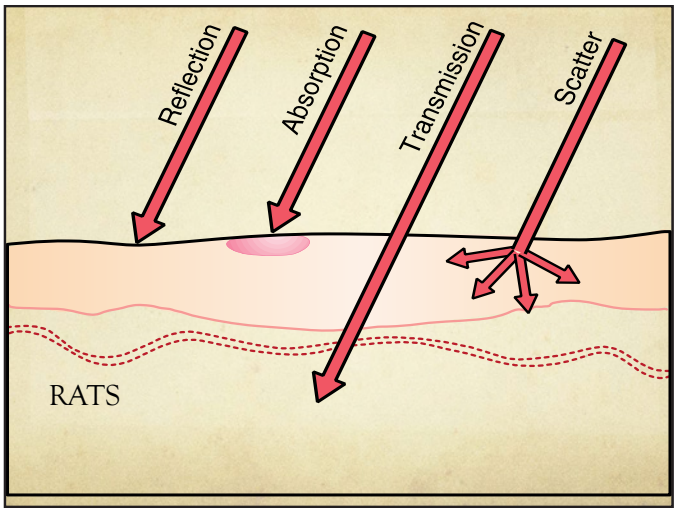
First, A Question:
Why Do We Wear Light Colors In The Summer And Dark Colors In The Winter?

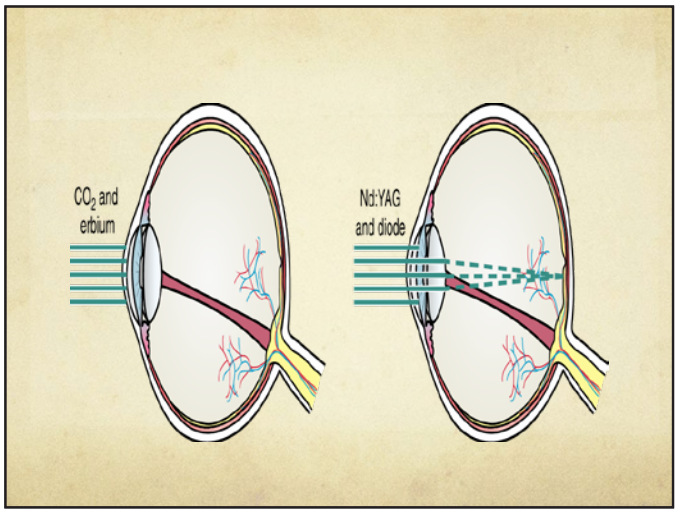
We Wear Light Colors In The Summer To ***Reflect*** The Heat/Light Energy From The Sun

We Wear DARK Colors In The Winter To ***Absorb*** As Much Feeble Sunlight As Possible To Keep Us Warm

EVERYTHING In Laser Dentistry Involves ***ABSORPTION*** Of ***Light Energy***

The Light Energy MUST BE ABSORBED By Your Target Tissue To Give You A Therapeutic Effect!





Specifically, The Laser Energy Must Be Absorbed By The ***CHROMOPHORES*** Of The Target Tissue

From The Greek:
Chromo = Color
Phore = Bearer Of
Chromophore is the Bearer Of Color

Chromophore is what gives the tissue its specific color or its specific OPTICAL characteristic

KEY WORD OF THE DAY:
CHROMOPHORE

Without A ***Complete Understanding*** of Tissue Chromophores, You Will ***NEVER*** Get The Most Out Of Your Laser WHATEVER Wavelength You Own

Chromophore?

Laser Dentistry is Based On Three Things:
Chromophore
and
Chromophore
and
Chromophore

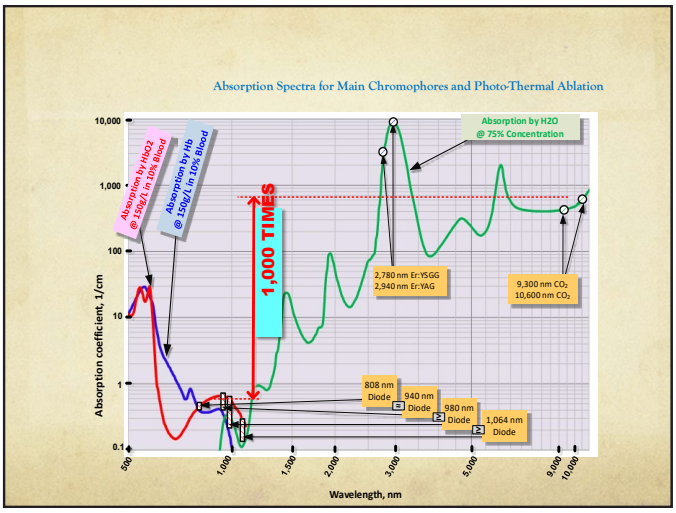
So….We MUST KNOW what the CHROMOPHORES are of the WAVELENGTH we are delivering to the tissue.

Each Wavelength is ABSORBED to different extents by different tissue CHROMOPHORES

AND…We Must Know the Chromophore Content Of The TARGET TISSUE!!!!

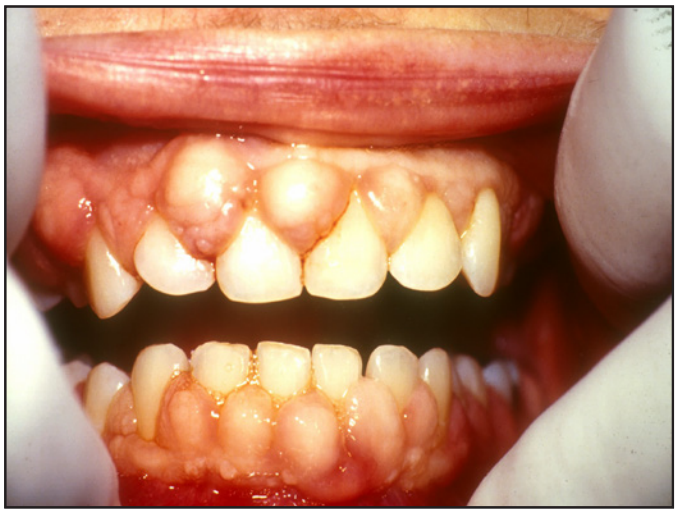
CHROMOPHORE:
A Light Absorbing Compound or Molecule Normally Occurring in Tissues That Absorbs Specific Wavelengths of Laser Energy

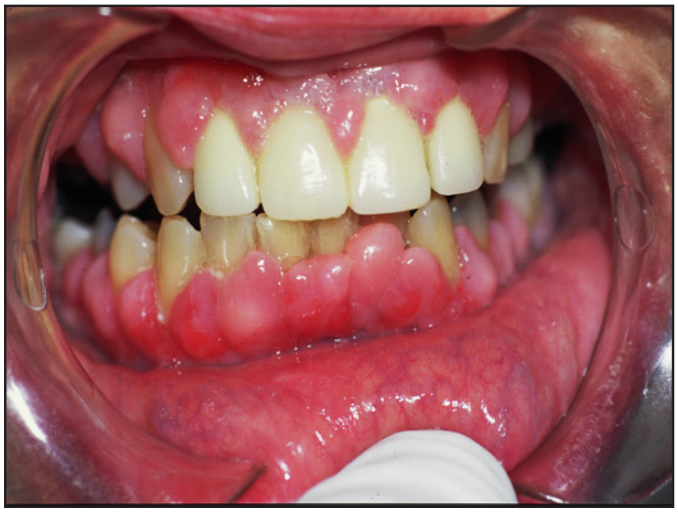
What are the major ***Chromophores*** of the oral cavity:
1) Water
2) Hemoglobin/OxyHb
3) Melanin
4) Hydroxyapetite

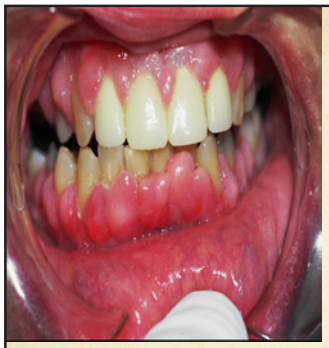


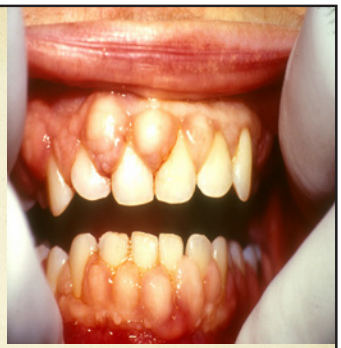
Every patient demands settings customized to their chromophores

If you do 10 frenectomies with the same exact setting you are guaranteed to have some good results and some poor results









Chromophores
Pink/Red
Fibrotic/Edematous
Water Content
Melanin Content
Hb Content

Erbiums Conclusion:
What Can They Do that No Other Wavelengths Can Do?

Instrument Endo Canals....and the Jury is Out Regarding Efficacy vs. Conventional Technique

I Can Do Op. Dent With My HS and PBM – FASTER!!!....and Add in Air Abrasion, And I am Good To Go!!

I Get Superior Hemostasis With Other Wavelengths Compared to Erbium

Erbium Vaporizes Tissue More Slowly Than Other Wavelengths....Especially CO2

Erbiums Give Me A Wider- Yet Shallower Incision...Not What I Want

A Little Bit About Finances/ROI For Erbiums:

1) What kind of fee can you charge?

2) Do you belong to any PPOs? HMOs? Capitation Plans?

Or are you 100% fee for service? Can you afford to use an Erbium?

So...Figure out your overhead

- Cost of Lease
- Cost of Warranty
- Cost of Disposables
- Fee You Can Charge

Next....Figure out the number of procedures/day you will perform with an Erbium

1) How many surfaces of virgin decay do you restore every day?
2) How many old composites do you remove every day?
3) How much osseous work do you do every day?

Next.....Discuss the claims of what % can be done without injecting the patient

Initial Studies said 90%+
BALONEY!!

Summary:
If You Want To Do Analgesia-Free Operative Dentistry on Deciduous Teeth, You Can Buy an Erbium For Over $50k

OR

You Can Buy A PBM For Less Than $5k....And Use Your HS Handpiece...And Be Completed With a Quadrant Of Op. Dent Before The Erbium Has Cut Through The First MMR Of The First Tooth

If You Want To Decontaminate Endo Canals....ANY WAVELENGTH Can Do That

If You Want To INSTRUMENT Canals, I Would Wait Until There Is Plenty More Peer-Reviewed Literature Before Spending Well Over $50k For A Device

Let's Talk About Diodes For A Minute

We Already Discussed Purchase Price vs. Operating Expense With Their Disposable Tips

Lets Discuss How They Work

Are diode lasers really lasers? Let's ask Dr. Gordon Christensen

So....diode lasers are merely ***hot glass tips***

Electrosurgery/Radiosurgery Create Electric Burns If Used Improperly

Diode Lasers Create ***Thermal Damage*** If Used Improperly

True Lasers:
Allow the photons to work
Never touch the target tissue

Cut tissue OPTICALLY

Diode Lasers Do Not Permit The Photons To Interact With The Tissue....They Work THERMALLY

So are diodes really lasers?
Yes and No
They ***produce*** a beam of C-C-M light
BUT
they do ***not emit*** a beam of C-C-M light
They ***are*** lasers, but ***are not used*** as lasers
They are simply ***hot glass tips***

The Next Important Concept That Helps Explain Why DIODES ARE NOT LASERS!!!

TRUE LASERS NEVER TOUCH TISSUE!!

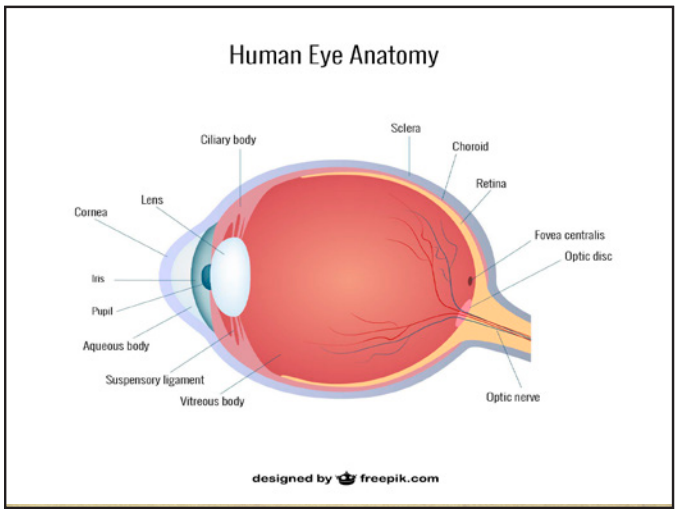
For Those Of You That Have Erbium or CO2 Lasers, You Already Know This:
The Laser Tip Is Kept
1 mm – 10 mm
Away From The Target Tissue

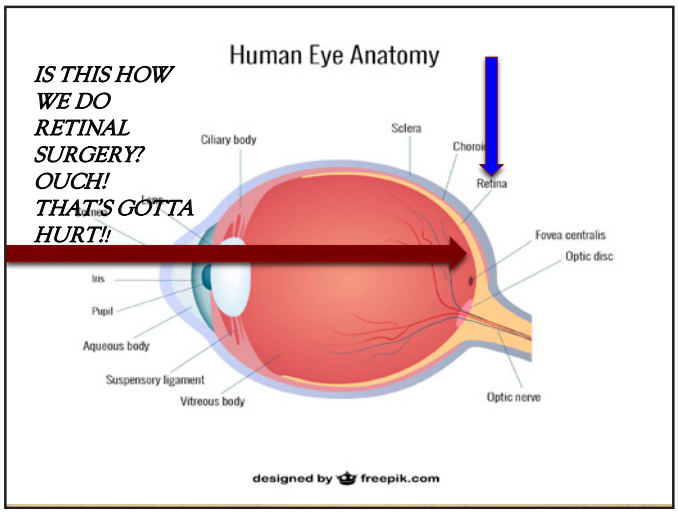
Today, We Are Ophthalmologists Performing Retinal Surgery

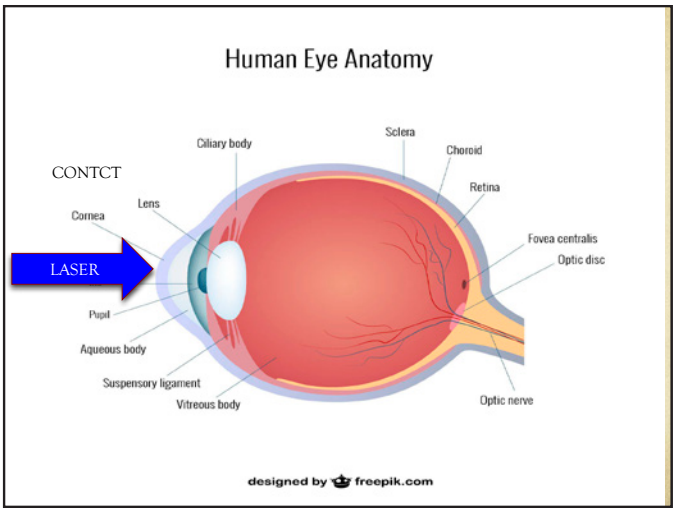
Do We Shove The Laser Through The Eyeball And Touch The Retina With The Laser?

Of Course Not!!

LASERS ARE NON CONTACT DEVICES!







Remember Our Little Talk About Chromophores?

What's The Chromophore For CO2s and Diodes?
WATER

Whats The Boiling Point of Water?
100 Degrees C

In order To VAPORIZE Tissue With A CO2 Or an Erbium I Need to Heat The Target Tissue To 100 Degrees C

How hot is the tip of a diode laser?
750° C to 1500° C
depending on the setting

Diode Laser Soft-Tissue Surgery: Advancements Aimed at Consistent Cutting, Improved Clinical Outcomes

Georgios E. Romanos, DDS, PhD
Compendium of Continuing Education in Dentistry
November/December 2013

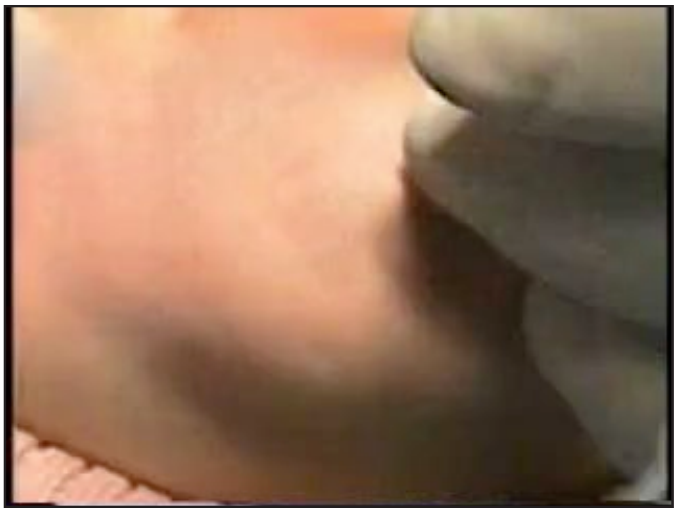
Weiss, R
Comparison of endovenous radiofrequency versus 810 nm diode laser occlusion of large veins in an animal model
Dermatologic Surg 2002 28 (1) 56-61

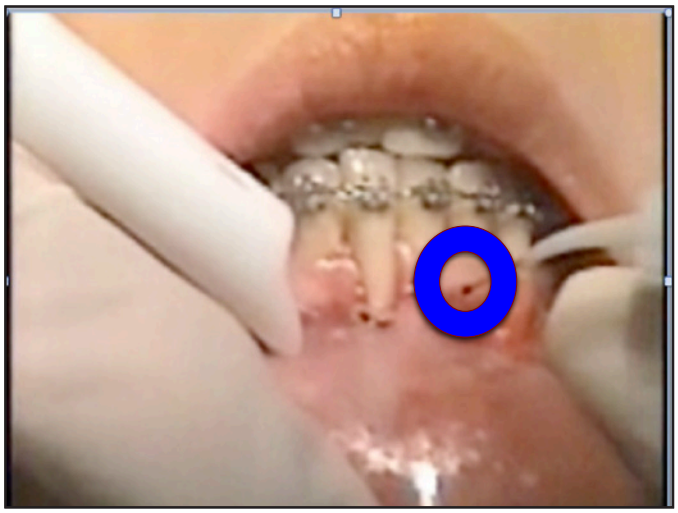
Romanos G, Belikov A, Skrypnik A, et. al. Uncovering dental implants using a new thermo-optically powered (top) technology with tissue air cooling
Lasers Surg Med 2015 47:411-420

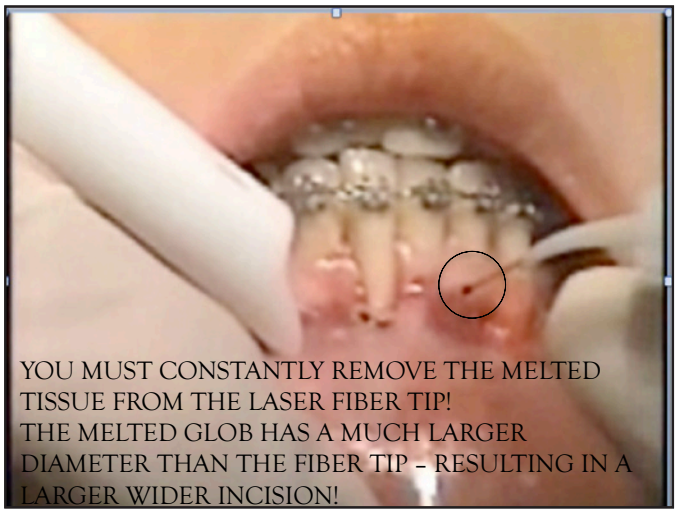
So....I Am Doing A TT Release On Your 3 Day Old Baby
Do You Want Me To Use A Device That VAPORIZES Tissue At 100 Degrees C

Or
Use A Device That MELTS Tissue At 750-1500 Degrees C?

Diodes Melt Tissue? Absolutely!!!







Diode Lasers Summary:
1) DIODES ARE NOT USED AS LASERS!!!

2) Operate at 750-1500 Degrees C – Unlike CO2 and Erbium Which Operate at 100 Degrees C

3) Have A Much Lower PRICE TAG But A RIDICULOUSLY HIGH Operating Expense

4) Rarely, If Ever Come With A Full Educational Experience – A Full Day Of Training In Your Office Or A Two Day Certification Program INDEPENDENT OF The Laser Manufacturer

Time For A Quiz:

Which of the following statements are TRUE?

Lasers have shown the ability to obtain ***clinical new attachment with bone fill*** in previously diseased sites. This technique has shown ***significantly better results*** than those obtained through conventional osseous grafting alone

Israel, M
Rossmann, J
An Epithelial exclusion technique using the CO2 laser for the treatment of periodontal defects
Comp. Cont. Educ. Dentistry
1988:19:86-95

In laser treated sites, ***connective tissue and repair cementum formed.*** This compared to a long junctional epithelial adhesion in all of the control teeth

Israel,M
Rossmann, J
Froum, S.
Use of the carbon dioxide laser in retarding epithelial migration: a pilot histological human study utilizing case reports.
J. Perio
1995:66:197-204

CO2 laser treatment combined with mechanical instrumentation constitutes a useful tool to condition root surfaces and ***increase fibroblast attachment to root surfaces***

Crespi, R
Barone, A
Covanin U
et. al.
Effects of CO2 Laser treatment on fibroblast attachment to root surfaces: a SEM analysis
J. Perio 2002:73:1308-1312

CO2 laser can be used to delay the apical downgrowth of epithelium and this technique is ***less technically demanding and more time efficient*** than other currently known methods of epithelial retardation

Rossmann, J
McQuade, M
Turunen, D
et. al.
Retardation of epithelial migration in monkeys using a carbon dioxide laser: an animal study
J. Perio 1992:63:902-907

The CO2 laser has a high absorption coefficient in water and consequently is well suited for soft tissue surgery....for many intraoral soft tissue surgical procedures, ***the laser is a viable alternative to the scalpel***

AAP Commissioned Review:
Lasers in Periodontics: A review of the literature
Cobb, C
J. Perio
2006:77:545-564

Conclusion: These results support the hypothesis that CO2 laser irradiation renders ***significantly more new bone formation*** especially 5-8 weeks postoperatively than conventional decontamination

Bone regeneration after peri-implant care with the CO2 laser: A fluoresence microscopy study
Stubinger, Henke, Deppe
Int. J. Oral Max Fac Implants
2005 March April 20 (2) 203-210

The CO2 laser has been shown to ***enhance periodontal therapy*** through an epithelial exclusion technique in conjunction with traditional flap procedures, and ***when CO2 lasers are used*** to de-epithelialize the mucoperiosteal flap during surgery, ***it has enhanced reduction in periodontal probing depths***

Blue Ribbon Report on Lasers in Periodontology
Research, Science and Therapy Committee of the American Academy of Periodontology
J. Perio 73:1231-1239, 2002
J. Rossmann

Studies DID NOT confirm 5 frequent claims of superiority for lasers used after scaling and root planing in treatment of periodontitis. SC/RP Alone was either the SAME or superior to SC/RP + laser ***EXCEPT***

the CO2 laser in 6 mm pockets showed pocket depth ***improvement at one year that was STATISTICALLY better*** than SC/RP alone.

Gordon J. Christensen's
Clinical Report
January 2015
Volume 8 Issue 1

Which of the following wavelengths are F.D.A. cleared
for
Laser ***A***ssisted ***N***ew ***A***ttachment ***P***rocedure?

LANAP
vs
L.A.N.A.P

Diode
- 810 nm
- 940 nm
- 980 nm
- 1064 nm
- 450 nm Diode

CO2
- 10,600 nm
- 9300 nm

Erbium
- Er.YAG 2940 nm
- Er.Cr.YSGG 2780 nm

Nd.YAG 1064 nm

Is there equivalence between:
A Rolls Royce and a Kia?
A Diamond Ring and a Cubic Zirconia Ring?
A Michaelangelo and a Paint by Numbers?
A Rowboat and The Q.E.II?

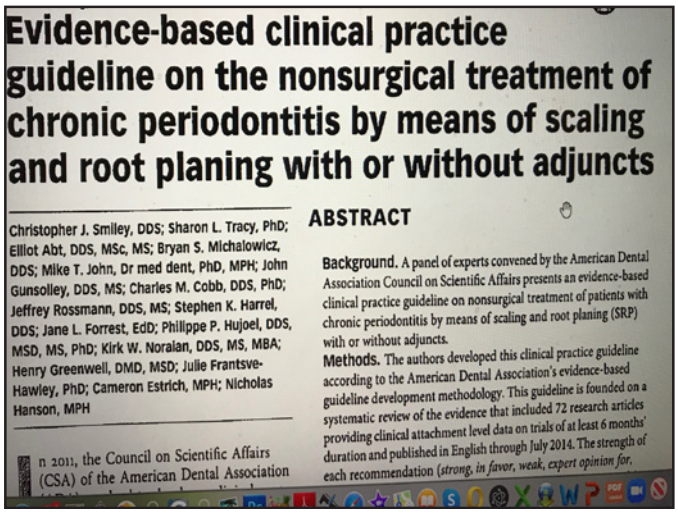
SO....Let's Circle Back To What You Want To Do With Your Laser:
Endo....Discussed
Op. Dent....Discussed

Perio Surgical Procedures – Periodontitis AND Peri-implantitis...Discussed

Time For Non-Surgical Perio Pocket Therapy

Diodes are great for initial perio therapy
(perio pocket reduction)????????

JADA 2015
146 (7) 525-533



Evidence-based clinical practice guideline on the nonsurgical treatment of chronic periodontitis by means of scaling and root planing with or without adjuncts

Christopher J. Smiley, DDS; Sharon L. Tracy, PhD; Elliot Abt, DDS, MSc, MS; Bryan S. Michalowicz, DDS; Mike T. John, Dr med dent, PhD, MPH; John Gunsolley, DDS, MS; Charles M. Cobb, DDS, PhD; Jeffrey Rossmann, DDS, MS; Stephen K. Harrel, DDS; Jane L. Forrest, EdD; Philippe P. Hujoel, DDS, MSD, MS, PhD; Kirk W. Noralan, DDS, MS, MBA; Henry Greenwell, DMD, MSD; Julie Frantsve-Hawley, PhD; Cameron Estrich, MPH; Nicholas Hanson, MPH

ABSTRACT

Background. A panel of experts convened by the American Dental Association Council on Scientific Affairs presents an evidence-based clinical practice guideline on nonsurgical treatment of patients with chronic periodontitis by means of scaling and root planing (SRP) with or without adjuncts.

Methods. The authors developed this clinical practice guideline according to the American Dental Association's evidence-based guideline development methodology. This guideline is founded on a systematic review of the evidence that included 72 research articles providing clinical attachment level data on trials of at least 6 months' duration and published in English through July 2014. The strength of each recommendation (*strong, in favor, weak, expert opinion for,*

In 2011, the Council on Scientific Affairs (CSA) of the American Dental Association

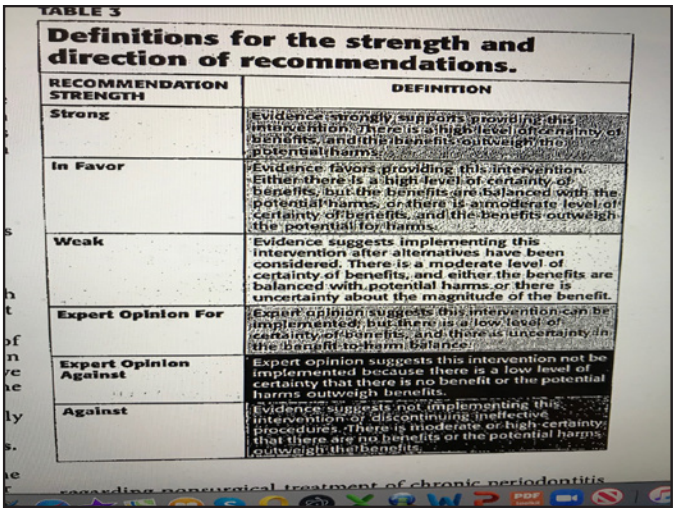
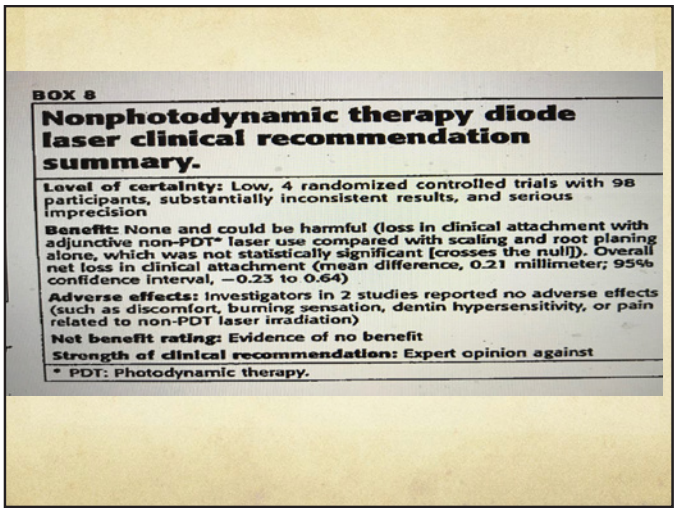


TABLE 3

Definitions for the strength and direction of recommendations.

RECOMMENDATION STRENGTH	DEFINITION
Strong	Evidence strongly supports providing this intervention. There is a high level of certainty of benefits, and the benefits outweigh the potential harms.
In Favor	Evidence favors providing this intervention. Either there is a high level of certainty of benefits, but the benefits are balanced with the potential harms, or there is a moderate level of certainty of benefits, and the benefits outweigh the potential harms.
Weak	Evidence suggests implementing this intervention after alternatives have been considered. There is a moderate level of certainty of benefits, and either the benefits are balanced with potential harms or there is uncertainty about the magnitude of the benefit.
Expert Opinion For	Expert opinion suggests this intervention can be implemented, but there is a low level of certainty of benefits, and there is uncertainty in the benefit-to-harm balance.
Expert Opinion Against	Expert opinion suggests this intervention not be implemented because there is a low level of certainty that there is no benefit or the potential harms outweigh benefits.
Against	Evidence suggests not implementing this intervention or discontinuing ineffective procedures. There is moderate or high certainty that there are no benefits or the potential harms outweigh the benefits.

regarding nonsurgical treatment of chronic periodontitis



BOX 8

Nonphotodynamic therapy diode laser clinical recommendation summary.

Level of certainty: Low, 4 randomized controlled trials with 98 participants, substantially inconsistent results, and serious imprecision

Benefit: None and could be harmful (loss in clinical attachment with adjunctive non-PDT* laser use compared with scaling and root planing alone, which was not statistically significant [crosses the null]). Overall net loss in clinical attachment (mean difference, 0.21 millimeter; 95% confidence interval, −0.23 to 0.64)

Adverse effects: Investigators in 2 studies reported no adverse effects (such as discomfort, burning sensation, dentin hypersensitivity, or pain related to non-PDT laser irradiation)

Net benefit rating: Evidence of no benefit

Strength of clinical recommendation: Expert opinion against

* PDT: Photodynamic therapy.

Dr. Joan Otomo-Corgel, the President (at the time of writing) of The American Academy of Periodontics concurred with the authors of the CPGs on behalf of the more than 8,000 members of the AAP

JADA 2015
146 (12)
865-866

Dr. Otomo-Corgel

"The diode laser as an adjunct to conventional non-surgical periodontal therapy does not provide an additional clinical benefit"

Sgolastra F; Severino M; Gatto, R, et. al. Effectiveness of diode laser as adjunctive therapy to scaling and root planing in the treatment of chronic periodontitis: A meta analysis Lasers Med Sci 2013:28:1392-1402

"the collective evidence regarding adjunctive use of the diode laser with SRP indicates that the combined treatment provides an effect comparable to SRP alone....this systematic review questions the adjunctive use of diode laser with traditional mechanical modalities of periodontal therapy in patients with periodontitis".

...or DE, Jorritsma KH, Cobb, CM, et. al. The effect of the thermal diode ...r (wavelength 808-980 nm) in non-surgical periodontal therapy: A ...ematic review and meta-analysis J Clin Periodontol 2014: 41:681-692.

Summary

Erbiums - High Purchase Price
High Operating Expense
High Extended Warranty

Summary
Can Perform Analgesia -Free Op. Dent On Deciduous Teeth With Air Abrasion or PBM
More Quickly Than With Erbiums

Diodes
Are Classified As Lasers
Because They Produce
C-C-M Light

BUT

Are NOT USED As Lasers - They Are Simply Hot Glass Tips - Operating At 750-1500 Degrees C

Uses Of Diodes in Medicine:
Hair Removal
Ophthalmology

Uses of CO2 in Medicine
Neurosurgery (Brain Tumor Removal)
ENT
Dermatology
Plastic Surgery
Mucosal Surgeries

This Is By Far A Very Incomplete Summary Of What Lasers Can Do And How To Choose A Laser

Best Bet? Take A 2 Day Certification Course by a Bona Fide Certification Organization

The Course MUST HAVE Multiple Wavelengths Multiple Manufacturers

Otherwise, Its Just A Sales Seminar

Thanks For Listening

Any Questions?

Whats App
+ 1- 516- 987- 5707 (m)

LaserBobDDS@Gmail.com

www.fullspectrumseminars.com

Want More Information On LASERS?

The # 1 Selling Textbook WORLDWIDE on Laser Dentistry For More Than A Decade

Used in M.S. Programs in Dental Laser Surgery Worldwide

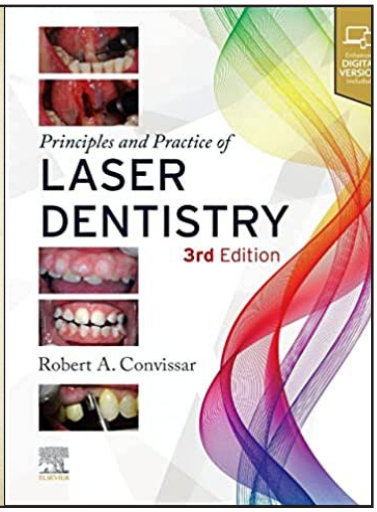
Available in:
English-Russian-Chinese-Spanish-Portuguese – with more coming!

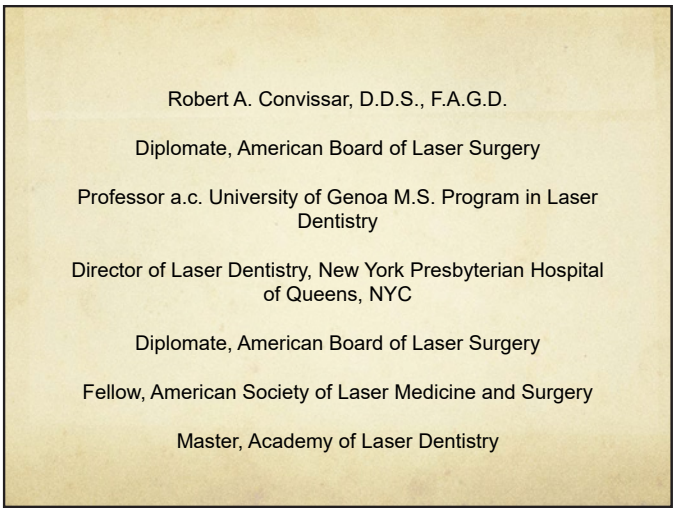
Available on

Amazon

At Discount Off Of publisher's price

Make Certain You Get The 3rd Edition




Robert A. Convissar, D.D.S., F.A.G.D.
Diplomate, American Board of Laser Surgery
Professor a.c. University of Genoa M.S. Program in Laser Dentistry
Director of Laser Dentistry, New York Presbyterian Hospital of Queens, NYC
Diplomate, American Board of Laser Surgery
Fellow, American Society of Laser Medicine and Surgery
Master, Academy of Laser Dentistry

SELF EVALUATION

Choosing the Right Dental Laser: Technology, Applications, and Clinical Outcomes

1. All of the following are important factors when deciding on a laser EXCEPT:

a. Purchase price
b. Operating expense
c. Training
d. All of the above are important

2. Which of the following are TRUE about training courses?

a. Training courses put on by manufacturers are usually non-biased
b. Training courses put on by laser organizations supported by laser companies are non-biased
c. Training courses with single manufacturers are sufficient to learn all about lasers
d. None of the above are true

3. Which of the following methods allow dentists to perform analgesia free operative dentistry on deciduous teeth?

a. Erbium lasers
b. PBM lasers followed by high-speed handpieces
c. Air abrasion
d. All of the above

4. When a laser is delivered to an office, who should be trained by the laser trainer?

a. The Dentist
b. The Assistant
c. The Hygienist
d. All of the above

5. Which of the following are true about lasers?

a. They are non-contact devices
b. Different wavelengths are absorbed by different tissue chromophores
c. They never need to be initiated
d. All of the above

6. T/F - All surgical lasers can “sterilize” (decontaminate) endodontic canals

7. Which laser(s) create hemostasis without thermally heating up the tissue above body temperature?

a. Erbiums
b. CO2s
c. Diodes
d. Two of the above

8. Which of the following laser-tissue actions is therapeutic?

a. Absorption
b. Reflection
c. Transmission
d. All of the above

9. Presets:

a. Are the best settings to use for most procedures
b. Must be adjusted based on patient’s tissue biotype
c. Are only suggestions for starting points
d. Two of the above

10. The American Dental Association Clinical Practice Guidelines regarding laser use in periodontal pockets:

a. Have been adopted by the American Academy of Periodontology
b. State that diodes should not be placed in periodontal pockets
c. Both of the above
d. Neither of the above

Answer Key: 1. A, 2. D, 3. D, 4. D, 5. D, 6. T, 7. D, 8. A, 9. D, 10. C

Thomas A. Viola, RPh, CCP, CDE, CPMP

Thomas A. Viola, RPh, CCP, CDE, CPMP, of New York, New York, has over 30 years' experience as a pharmacist, educator, speaker, and author. He has particular expertise in the most prevalent oral and systemic diseases, frequently prescribed drugs used in their treatment and considerations and strategies for effective patient care planning. Dr. Viola is on faculty at over 10 dental professional degree programs, having received several teacher-of-the-year awards. He is well known internationally for his contributions as an author, and for his work as an editor of several pharmacology, pain management and local anesthesia professional journals and textbooks. Dr. Viola has presented over one thousand continuing education courses to medical and dental professionals here and abroad since 2021.

You may contact Dr. Viola with your questions and comments by email at tom@tomviola.com. You may also visit his website, www.tomviola.com, and follow him on Facebook and Instagram at "pharmacologydeclassified".

TOM VIOLA
PHARMACOLOGY DECLASSIFIED

Recognizing and Managing the Substance-Abusing Patient - Parts 1 & 2

Thomas A. Viola, RPh, CCP, CDE, CPMP

Disclaimer and Copyright

Participants in this activity have an implied responsibility to use all available information to enhance patient outcomes and their own professional development and judgement. Optimal use of medications changes rapidly with time. The content presented in this activity is not intended as a substitute for the participant's own research, or for the participant's own professional judgement or advice for a specific problem or situation.

Conclusions drawn by participants should be derived from objective analysis of all scientific data and not necessarily from the content of this activity. This activity and its content are not intended to, nor should they be considered to be, rendering medical, dental, clinical, pharmaceutical, or other professional advice. The content of this activity should be used in conjunction with timely and appropriate medical consultation.

 1

Disclaimer and Copyright

No representations or guarantee of the accuracy, timeliness, or applicability of the content of this activity can be made or is made. The author of this activity specifically disclaims applicability of any of the content presented to any given clinical situation, due to the high degree of variability among patients. Participants assume all risks and responsibilities with respect to any decisions or advice made or given as a result of the use of the content of this activity.

No part of this activity may be reproduced, stored in a retrieval system, distributed, or transmitted in any form, or by any means, electronic, mechanical, photocopying, recording, scanning, or otherwise without the express, written prior approval of the author. Compliance will be determined with all available technology.

All violations will be litigated to the fullest extent possible.

 2

Program Learning Objectives

Upon successful completion of this program, participants should be able to:

- Explore the world of the most commonly used street drugs with regard to:
  - –Street names
  - –Common adverse effects
  - –Oral manifestations
  - –Dental treatment considerations

 3

Program Learning Objectives

- Discuss the impact of substance dependence and abuse on dental therapy and on overall patient health.
- Describe techniques useful in identifying and successfully managing patient substance use and dependency.

 4

Part I

The Substance Dependent Patient

The Impact of Substance Dependence

Complications arising from substance abuse are possible in virtually all age groups.

- Babies exposed to legal and illegal drugs in utero are at risk for premature and underweight birth.
- Early-life environmental drug exposure in young children can slow intellectual development and affect behavior later in life.
- Adolescents abuse "gateway" drugs, such as alcohol and marijuana, often before the age of 13.

 6

The Impact of Substance Dependence

- Young adults abuse substances to enhance athletic and cognitive performance and endurance in an effort to "keep-up" with others.
- Middle-aged patients abuse substances to cope with depression and stress, get sleep and lose weight.
- Older patients who began abusing substances in the 1960's -1970's are vulnerable to systemic diseases and mental illness brought on by literally decades of substance abuse.

 7

Part II

Substances of Abuse and Dependence

CNS Stimulants

 9

CNS Stimulants

- Cocaine
  - –Produces sense of exhilaration
    - Blocks dopamine, norepinephrine and serotonin reuptake
  - –Street names
    - *Coke, blow*
  - –Dosage forms and routes of administration
    - Cocaine hydrochloride (snorted)
    - Crack cocaine (smoked)

 10

CNS Stimulants

- Methamphetamine
  - –Causes an excess release of dopamine
  - –Street names
    - *Meth, crystal, crank*
  - –Often "cooked" (made) in clandestine labs from pseudoephedrine and "household" items

 11

CNS Stimulants

- MDMA (**M**ethylene**d**ioxy**m**eth**a**mphetamine)
  - –A hallucinogen with effects similar to methamphetamine
    - Blocks reuptake of serotonin
    - Stimulates Alpha-2 receptors
  - –Street names
    - *Ecstasy, XTC, Molly*
      - –Increases libido
  - –Exerts paradoxical effects of relaxation and stimulation

 12

CNS Stimulants

- Prescription Drugs for ADHD
  - Types
    - Concerta (methylphenidate)
      - *Skippies/Kibbles*
    - Adderall (dextroamphetamine)
      - *Altoids*
  - Licit Use
    - Treatment of ADHD
  - Illicit Use
    - Increased alertness and physical endurance
    - Swallowed whole or dissolved and injected

 13

CNS Stimulants

- Synthetic cathinones
  - Bath Salts (…not really)
  - *Flakka, Gravel*
  - Powerful stimulants similar to cathinone found in the Khat plant (*Catha edulis*)
  - Available at smoke shops and your local convenience store!
  - Do not generate positive urine test results!

 14

Common Adverse Effects

- Physical Effects
  - Pallor
  - Increased body temperature
  - Runny nose
  - Dilated pupils
  - Anorexia and weight loss
  - Increased blood pressure and pulse

 15

Common Adverse Effects

- CNS Effects
  - Insomnia
  - Psychosis
    - Irritability
    - Anxiety
    - Paranoia
  - "Tweaking"
    - Users have numerous scabs from picking at imaginary insects crawling under their skin

 16

Common Oral Manifestations

- Xerostomia
  - Increased tooth decay and carious lesions
- Periodontal disease
  - Results from neglect of good oral hygiene
  - Exacerbated by vasoconstriction, xerostomia
- Bruxism
  - May result in TMJ pain, incisal wearing
  - Crown fractures yield retained, exposed roots
- Signs of malnutrition
  - Angular cheilitis, candidiasis, glossdynia

 17

Specific Oral Manifestations

- Methamphetamine
  - "Meth mouth"
    - Brittle decalcified tooth enamel with extensive black gingival decay
      - Corrosive substances are vaporized and dissolve tooth enamel and dentin
        - Sulfuric acid, red phosphorus, lye
      - Rampant dental caries
        - Persistent xerostomia
        - Exacerbated by cravings for sweets

 18

Dental Treatment Considerations

Due to the effects of stimulant abuse and dependence on cardiovascular function, drugs used commonly in dentistry may have serious, unexpected adverse effects.

- However, while its use may seem warranted, epinephrine may exacerbate the reduced oxygenation of the brain which results from drug-induced tachycardia and may result in convulsions

 19

CNS Depressants

 20

CNS Depressants

- Benzodiazepines
  - Types
    - Xanax (alprazolam)
      - *Footballs, Totem Poles*
    - Klonopin (clonazepam)
      - *Vitamin K*
  - Licit Use
    - Relieve anxiety, produce sleep, prevent seizures
  - Illicit Use
    - Manage withdrawal symptoms
    - Produce sedation after abuse of stimulants

 21

CNS Depressants

- Rohypnol
  - A benzodiazepine
    - Not approved in the U.S.

      (Also known as "Roofies")
  - Approximately ten times more potent than Valium
    - Abused for euphoria-producing effects
  - Used as a predatory drug
    - High doses can cause loss of muscle control, partial amnesia, loss of consciousness

 22

CNS Depressants

- GHB (gamma-hydroxybutyrate)
  - *Liquid ecstasy*
  - Originally an anesthetic
  - Also used by athletes as a synthetic steroid and growth stimulant
  - Causes amnesia and susceptibility to suggestion
    - Used as a predatory drug
    - Salty-tasting, colorless liquid

 23

CNS Depressants

- Xylazine
  - *Tranq*
    - Veterinary tranquilizer intended for use in animals
    - Not safe for humans and may result in life-threatening reactions
      - Respiratory depression
      - Painful skin infections
        - Ulcers and abscesses
        - May lead to amputation

 24

CNS Depressants

- Xylazine
  - May be included in illicit drugs often without the knowledge of people who use these drugs.
  - There is no test readily available to the public to test for xylazine in other drugs.
  - Xylazine may be used intentionally to prolong the effects of certain drugs, especially fentanyl.
  - This increases the risk of overdose and death.

 25

CNS Depressants

- Xylazine
  - Naloxone should be administered during a suspected or known overdose because of the high likelihood that opioids are also present.
  - However, the effects of xylazine alone are not reversed by naloxone and there is no reversal drug for it.

 26

Common Adverse Effects

- Physical Effects
  - Impaired motor coordination
  - Withdrawal symptoms from physical dependence
- CNS Effects
  - Impaired memory and anterograde amnesia
  - Reduced mental acuity
  - Tolerance to sedative effects is common

 27

Common Dental Considerations

- Reduced salivary flow
  - Xerostomia
  - Increased tooth decay and carious lesions
  - Possible candidiasis
- Periodontal disease
  - Exacerbated by xerostomia

 28

Dental Treatment Considerations

Due to the effects of sedative/hypnotic abuse, drugs used commonly in dentistry may have serious, unexpected adverse effects.

- Analgesics containing opioids may cause additive CNS and respiratory depression
- Benzodiazepines used in conscious-sedation techniques may have additive effects with self-administered sedative/hypnotics

 29

Illicit Opioids

 30

Illicit Opioids

- Heroin
  - Synthesized from morphine
    - All naturally occurring opioids are derived from the poppy plant
  - Typical user today consumes more heroin than a typical user did a decade ago
    - Higher purity available at the street level

 31

Illicit Opioids

- Heroin
  - Street names
    - *Smack*
    - *Brown sugar*
    - *Speedball*
      - When combined with cocaine
    - *Cheese*
      - When combined with crushed tablets of prescription and OTC medications

 32

Illicit Opioids

- Heroin
  - Low-purity heroin must be injected
  - High-purity heroin can be "smoked"
    - "Chasing the dragon"
      - Eliminates syringe-borne disease
      - Eliminates evidence of IV use

 33

Illicit Opioids

- Kratom
  - A tropical tree native to Southeast Asia (Mitragyna speciosa)
  - Mitragynine is the active
    - Interacts with opioid receptors producing sedation and decreased pain
    - Interacts with other receptors as stimulant
  - May cause seizures, psychosis and respiratory depression when combined with substances

 34

Illicit Opioids

- Krokodil
  - Mixture of desomorphine, gasoline, oil, alcohol or paint thinner
  - Injected directly intravenously
  - Causes dark, scaly patches of dead and decaying skin
  - Often results in brain damage and death

 35

Common Adverse Effects

- Physical Effects
  - Impaired motor coordination
  - Pupil constriction
  - Nausea, vomiting, constipation
  - Withdrawal symptoms from physical dependence
- CNS Effects
  - Initial euphoria, then depression, dysphoria
  - Drowsiness and dizziness, impaired memory
  - Respiratory depression

 36

Common Dental Considerations

- Xerostomia
  - Increased tooth decay and carious lesions
- Periodontal disease
  - Results from neglect of good oral hygiene
  - Exacerbated by xerostomia
- Signs of malnutrition
  - Angular cheilitis, candidiasis, glossdynia

 37

Treatment of Opioid Addiction

 38

Management of Opioid Addiction

- Vivitrol (naltrexone)
  - Administered by once-monthly IM injection
  - Assists in maintaining opioid-free state
  - Blocks effects if opioids are taken
- Sublocade (buprenorphine)
  - Administered by once-monthly SC injection
  - Assists in maintaining opioid-free state
  - Blocks effects if opioids are taken

 39

Management of Opioid Addiction

- Suboxone (buprenorphine plus naloxone)
  - Licit Use
    - Part of treatment plan for opioid addiction
    - Blocks effects of opioid
  - Illicit Use
    - Hoarded by recipients and taken in high doses
    - Naloxone blocks effects if recipient attempts to illicitly liquify and inject this drug

 40

Dental Treatment Considerations

Due to availability of combination opioid and non-opioid products, analgesics prescribed for the relief of dental pain may have serious, unexpected adverse effects

- Opioid analgesics prescribed for the relief of dental pain may have additive effects
- May also result in unintentional overdose of non-opioid ingredients

 41

Hallucinogens

 42

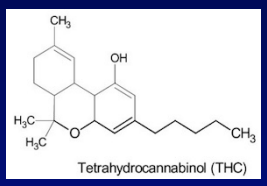
Cannabis

Cannabis Active Compounds

- Phytocannabinoids
  - Cannabis contains over 500 compounds and 66 known cannabinoids
    - Major cannabinoids
      - Tetrahydrocannabinol (THC)
      - Cannabidiol (CBD)
    - Minor cannabinoids
      - Cannabinol (CBN)
      - Cannabigerol (CBG)
      - Cannabichromene (CBC)

Cannabis Active Compounds

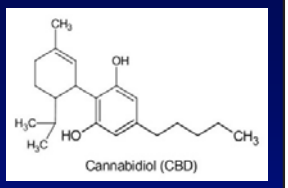
- THC
  - Pain Relief
  - Anxiety Relief
  - Euphoria
  - Physical relaxation
    - "Couch-Lock"



Tetrahydrocannabinol (THC)

Cannabis Active Compounds

- CBD
  - Pain relief
  - Decreased nausea
  - Anxiety relief



Cannabidiol (CBD)

Cannabis Active Compounds

- Phytocannabinoids
  - Cannabis contains over 500 compounds and 66 known cannabinoids
    - Major cannabinoids
      - Tetrahydrocannabinol (THC)
      - Cannabidiol (CBD)
    - Minor cannabinoids
      - Cannabinol (CBN)
      - Cannabigerol (CBG)
      - Cannabichromene (CBC)

Cannabis Active Compounds

- Cannabinol (CBN)
  - Considered to be a "weaker" version of THC
    - THC components found in the cannabis plant break down and form CBN
    - About 25% as "effective" as THC
- Cannabigerol (CBG)
  - Considered to be the precursor to other cannabinoids.
    - CBG-A, the acidic form of CBG, breaks down to form CBG, CBD, THC, and CBC

Cannabis Active Compounds

- Cannabichromene (CBC)
  - One of the most abundant phytocannabinoids
    - Considered to be nearly 10 times as effective as CBD for relieving pain, anxiety and inflammation
    - Non-psychotropic phytocannabinoid that inhibits endocannabinoid inactivation and activates the transient receptor potential ankyrin-1 (TRPA1)
      - May modulate gastrointestinal motility

 49

What is a "Terpene"?

 50

Cannabis Active Compounds

- Terpenoids (terpenes)
  - In addition to cannabinoids, cannabis also contains terpenoids
    - Organic compounds found in plants:
      - Beta-caryophyllene (cloves, hops)
      - Limonene (lemons, oranges)
      - Linalool (lavender, jasmine, rosewood)
      - Myrcene (eucalyptus, lemongrass)
      - Pinene (pinecones)

 51

But How Does Cannabis Actually Work?

 52

Endocannabinoids

- Endogenous cannabinoids
  - Synthesized by the body
    - Anandamide (AEA)
    - 2-arachidonoylglycerol (2-AG)
  - Metabolites of arachidonic acid
    - Proposed link with the prostaglandin system

 53

Endocannabinoids

- Mechanism of Action
  - Cannabis works in the endocannabinoid system
    - Two receptors govern this system
      - CB1 Receptors
        - Primarily found in the CNS
          - Euphoria
          - Appetite stimulation
          - Decreased perception of pain
          - Memory disturbances
          - Impaired motor function
          - Slowed cognition

 54

Endocannabinoids

- Mechanism of Action
  - Cannabis works in the endocannabinoid system
    - Two receptors govern this system
      - CB2 Receptors
        - Found in the GI
          - CHS
        - Found in the immune system
          - Modulate immunity
          - Modulate inflammation

 55

Why Are There So Many Different Kinds of Cannabis?

 56

The Anatomy of the Cannabis Plant

 57

The Anatomy of the Cannabis Plant

- The Leaf
  - Allows for identification of strains
  - Allows for photosynthesis and plant growth
  - Does not produce the majority of the actives

 58

The Anatomy of the Cannabis Plant

- The Cola
  - Actives are isolated from flowers of female plants
  - The flower is then dried to produce “buds”
  - Male plants pollinate female plants

 59

The Anatomy of the Cannabis Plant

- Trichomes
  - Tiny hair-like projections on the flowers and leaves
  - Used to differentiate each strain of cannabis
  - Contain hundreds of cannabinoids, terpenes
    - Terpenes are essential oils found in the cannabis plant and other plants

 60

Why Are There So Many Different Routes of Administration?

 61

Routes of Administration

- Oral
  - Edibles, tinctures, oils
  - Advantages
    - Delayed onset, longer duration of action
  - Disadvantages
    - Inconsistent bioavailability
    - Extensive first-pass metabolism
    - Greater potential for overdose

 62

Routes of Administration

- Sublingual/Buccal
  - Sprays, strips, oils
  - Gums, lozenges, mints, toothpicks
  - Advantages
    - Immediate onset, shorter duration of action
  - Disadvantages
    - Adverse effects on oral mucosa from consistent exposure

 63

Routes of Administration

- Smoking (combustion)
  - Plant material
    - Joints, blunts, pipes
  - Advantages
    - Simple and effective
  - Disadvantages
    - Inhalation of combustion products
    - More than 2000 compounds are produced during smoking with mostly unknown effects

 64

Routes of Administration

- Water pipes
  - Plant material (bongs, hookah)
  - Advantages
    - Removes toxins in smoke
  - Disadvantages
    - Doesn't remove particulates
    - Might remove THC

 65

Routes of Administration

- Vaping/Dabbing
  - Concentrates, resins (chips, oils, budders)
  - Advantages
    - More efficient delivery of actives
    - Target temperature of specific cannabinoids
    - No odor
  - Disadvantages
    - Need special equipment
    - Presence of residual solvents

 66

Routes of Administration

- Oral Inhalers
- Topicals
  - –Creams, ointments, balms, lotions, patches
  - –Eye drops
- Suppositories
  - –Vaginal, rectal
- Tampons

 67

Cannabis Dental Considerations And Treatment Planning

 68

Cannabis Dental Considerations

- Use of cannabis has been associated with:
  - Poor quality of oral health
    - –Frequently complicated by associated factors
      - –High tobacco, alcohol, and other drug use
      - –Poor oral hygiene practices
    - –Use of cannabis causes xerostomia
    - –Use of cannabis causes appetite stimulation and consumption of cariogenic snack foods

Source: ADA Oral Health Topics, Cannabis: Oral Health Effects (9/21)
https://www.ada.org/resources/research/science-and-research-institute/oral-health-topics/cannabis-oral-health-effects)

 69

Cannabis Dental Considerations

- Use of cannabis has been associated with:
  - Poor quality of oral health (continued)
    - –Use of cannabis is associated with similar oral pathologies as tobacco smoking including leukoedema
    - –Use of cannabis (especially vaping) is associated with gingival enlargement, erythroplakia, chronic inflammation of the oral mucosa with hyperkeratosis and leukoplakia

Source: ADA Oral Health Topics, Cannabis: Oral Health Effects (9/21)
https://www.ada.org/resources/research/science-and-research-institute/oral-health-topics/cannabis-oral-health-effects)

 70

Cannabis Dental Considerations

- Use of cannabis has been associated with:
  - Increased risk of cancer
    - –Synergistic effects between tobacco and cannabis smoke may increase oral and neck cancer risk for people who smoke both
    - –Immunosuppressive effects of cannabis, especially in association with oral papillomavirus, may contribute to these increased risks of cancer

Source: ADA Oral Health Topics, Cannabis: Oral Health Effects (9/21)
https://www.ada.org/resources/research/science-and-research-institute/oral-health-topics/cannabis-oral-health-effects)

 71

Cannabis Dental Considerations

- Use of cannabis presents several clinical challenges for the dental practitioner:
  - –Increased anxiety, paranoia and hyperactivity may heighten the stress experience of a dental visit
  - –May lead to unexpected, inappropriate behavior

Source: ADA Oral Health Topics, Cannabis: Oral Health Effects (9/21)
https://www.ada.org/resources/research/science-and-research-institute/oral-health-topics/cannabis-oral-health-effects)

 72

Cannabis Dental Considerations

- Use of cannabis presents several clinical challenges for the dental practitioner:
  - Numerous reports have indicated that patients who are heavy cannabis users are more difficult to anesthetize with local anesthesics
  - Increased heart rate and other cardiorespiratory effects of cannabis make the use of epinephrine potentially life-threatening

 73

Cannabis Dental Considerations

- Use of cannabis presents several clinical challenges for the dental practitioner:
  - Numerous reports have indicated that patients who are heavy cannabis users are more difficult to sedate and to keep sedated*
  - Many clinicians have reported combative behavior requiring physically restraining patients

*Addamo, Paul, et al. "Marijuana's Effect on Dosage Requirements During Sedation in Oral and Maxillofacial Surgery." Journal of Oral and Maxillofacial Surgery 81.9 (2023): S66-S67
vs.
*Daniel Ripperger et al. "Cannabis Users Require More Anesthetic Agents for General Anesthesia in Ambulatory OMS Procedures." Journal of Oral and Maxillofacial Surgery. 13 September 2023.

 74

Cannabis Dental Considerations

- Use of cannabis presents several ethical challenges for the dental practitioner
  - "Intoxicated users" and informed consent
  - "Impaired" practitioners and potential malpractice

 75

Hallucinogens

- Synthetic marijuana
  - Street names
    - *K2*
    - *Spice*
    - *Herbal Incense*
  - Dosage forms
    - Dried leaves (smoked "joints" or "blunts")
  - Active ingredient
    - Leaves are sprayed with psychoactive compounds or synthetic cannabinoids

 76

Hallucinogens

- Ketamine
  - A dissociative hallucinogen
    - Distorted perceptions of sound, sight
    - Feeling of detachment from environment
    - Amnesia, out of body experiences
  - Licit Use
    - Treatment of depression
    - Veterinary anesthetic
  - Illicit Use
    - Predatory drug

 77

Hallucinogens

- Dextromethorphan ("DM" or "DXM")
  - Dextro isomer of opioid agonist levorphanol
  - Licit Use
    - Prescribed for relief of non-productive cough
  - Illicit Use
    - Abused for dissociative hallucinogenic effects
      - Doses up to 10 times therapeutic dose
      - *"Poor Man's PCP"*
    - Readily available in medicine cabinets/OTC

 78

Hallucinogens

- Dextromethorphan ("DM" or "DXM")
  - Types
    - OTC cough and cold products
      - Coricidin HBP (*Skittles, Triple C's*)
    - OTC cough syrups
      - Robitussin DM (*Roboshake*)
      - Delsym (*Agent Orange*)
    - Prescription cough syrups
      - Promethazine DM (*Purple Haze*)

 79

Hallucinogens

- Antihistamines
  - First-generation antihistamines
    - Benadryl (diphenhydramine)
  - Antiemetics
    - Dramamine (dimenhydrinate)
  - Anti-vertigo Agents
    - Bonine (meclizine)

 80

Hallucinogens

- Antihistamines (continued)
  - Licit Use
    - Used to decrease allergic reactions
    - Used to promote sleep
    - Used to treat motion sickness, vertigo
      - Dramamine, Bonine
  - Illicit Use
    - Used in very high doses as hallucinogen
    - Used with opioids to increase euphoria

 81

Hallucinogens

- Salvia divinorum
  - *Diviner's Sage, Magic Mint*
  - Licit Use (alleged)
    - Herbal carminative
  - Illicit Use
    - Powerful hallucinogen similar to LSD, PCP
    - Leaves are smoked, chewed
    - Does not generate positive urine test results

 82

Hallucinogens

- Inhalants
  - Solvents
    - Paints, paint thinner
    - Magic markers, correction fluid
  - Gases
    - Butane, propane
    - Nitrous oxide ("whippets")
  - Nitrites
    - Butyl nitrite ("rush", "bolt")
    - Amyl nitrite ("poppers", "snappers")

 83

Common Adverse Effects

- Physical Effects
  - Impaired motor coordination
  - Increased body temperature/excessive sweating
  - Increased or decreased blood pressure, pulse
- CNS Effects
  - Increased awareness of sensory input
  - Illusions and hallucinations (flashbacks)
  - Psychoses (PCP)

 84

Specific Adverse Effects

- Inhalants
  - Physical Effects
    - Blood oxygen depletion and suffocation
    - Peripheral neuropathies
    - Heart failure and death
    - Hearing loss
  - CNS Effects
    - Stimulation and loss of inhibition
    - Memory impairment

 85

Common Dental Considerations

- Xerostomia
  - Increased tooth decay and carious lesions
- Periodontal disease
  - Results from neglect of good oral hygiene
  - Exacerbated by increased appetite for sweets
- Rashes and residue around nose and mouth (inhalants)

 86

Dental Treatment Considerations

Due to the effects of hallucinogens on cardiovascular function, drugs used commonly in dentistry may have serious, unexpected adverse effects.

- Hallucinogens increase or decrease cardiovascular function and adverse effects associated with local and general anesthetics
- Epinephrine may exacerbate reduced oxygenation of the brain and may result in convulsions

 87

What's New?

 88

What's New?

- Neurontin (gabapentin)
  - Used to "boost" heroin
  - Used in high doses as substitute for opioids (no positive urine tests)
- Phenibut (beta-phenyl-gamma-aminobutyric acid)
  - A neuropsychotropic drug
  - Discovered and used in Russia in the 1960s.
  - Anxiolytic and nootropic (cognition enhancing) effects.

 89

What's New?

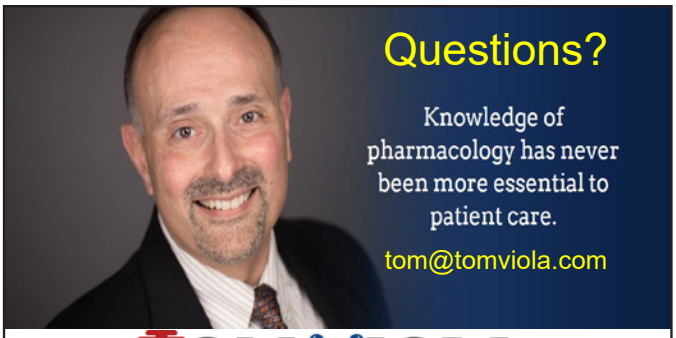
- Nitazines
  - Strong synthetic opioids
  - Developed by researchers around 60 years ago
  - Never released - high potential for overdose
  - Examples
    - Isonitazene ("Iso")
    - Protonitazene ("Proto")
- Imodium (*OTC Methadone*)
  - Used in high doses for opioid-like effect
  - Used to reduce opioid withdrawal symptoms
  - May exacerbate constipation

 90

What's New?

- Tianeptine ("Gas Station Heroin")
  - Synthetic chemical discovered in 1960's (France)
  - Marketed as an antidepressant in other countries
  - Often used in very high doses for opioid-like effects
  - Illegally marketed in smoke shops, convenience stores, gas stations and online as a dietary supplement

 91



Questions?

Knowledge of pharmacology has never been more essential to patient care.

tom@tomviola.com

TOM VIOLA
PHARMACOLOGY DECLASSIFIED

www.tomviola.com
www.facebook.com/pharmacologydeclassified
www.instagram.com/pharmacologydeclassified

SELF EVALUATION

Recognizing and Managing the Substance-Abusing Patient - Parts 1 & 2

1. T/F - Antihistamines, such as Benadryl (diphenhydramine), may be hallucinogenic in high doses.

2. When taken together, cocaine and alcohol are converted to cocaethylene, which increases:

a. Euphoria
b. Dysphoria
c. Dysphagia
d. Dysgeusia
e. None of the above

3. Common adverse effects for CNS stimulants include which of the following?

a. Pallor
b. Increased body temperature
c. Dilated pupils
d. Anorexia and weight loss
e. All of the above

4. Which the following can be considered an adverse reaction associated with licit and illicit opioids?

a. Respiratory depression
b. Constipation
c. Sedation
d. Constricted pupils
e. All of the above

5. T/F - Prescription drugs for ADHD, such as Concerta, may be used illicitly to increase alertness and physical endurance.

Answer Key: 1. T, 2. A, 3. E, 4. E, 5. T

Carole C. Foos, CPA

Carole C. Foos, CPA, of Cincinnati, Ohio, is a partner in OJM Group, a physician focused financial planning and asset management firm and a Certified Public Accountant (CPA) offering tax analysis and tax planning services to the firm's clients. Ms. Foos has over 25 years of experience in accounting, tax planning and financial consulting. She is a co-author of numerous books for physicians, including *Wealth Management Made Simple* and *Wealth Planning for the Modern Physician: Residency to Retirement*. Ms. Foos has authored numerous articles and presented many lectures, webcasts, and podcasts on tax planning and wealth management.

You may contact Ms. Foos with any questions or comments at (513) 309–3946 or by email at carole@ojmgroup.com.

OJMGROUP
Integrity. Collaboration. Expertise.

CORPORATE HEADQUARTERS
8044 MONTGOMERY ROAD, SUITE 440
CINCINNATI, OH 45236
877.656.4362 866.913.4911 WWW.OJMGROUP.COM
Other offices in Arizona and Florida

Preventing Fraud and Increasing Revenue through Effective Financial Controls

Carole C. Foos, CPA

DISCLAIMER

OJM Group, LLC ("OJM") is an SEC registered investment adviser with its principal place of business in the State of Ohio. SEC registration does not constitute an endorsement of OJM by the SEC nor does it indicate that OJM has attained a particular level or skill or ability. OJM and its representatives are in compliance with the current notice filing and registration requirements imposed upon registered investment advisers by those states in which such notice filing, and registration is required. OJM may only transact business in those states in which it is notice filed or qualifies for an exemption or exclusion from notice filing requirements. For additional information about OJM, including fees and services, send for our disclosure brochure using the contact information provided in this presentation or refer to the Investment Adviser Public Disclosure web site (www.adviserinfo.sec.gov).

Information contained in this presentation has been obtained from sources we consider reliable, but its accuracy is not guaranteed. Any opinions expressed are based on the interpretation of data available to OJM and are subject to change at any time without notice. This presentation is for informational purposes only and is not intended as an offer or solicitation for the purchase or sale of a security or the rendering of investment advice.

No client or prospective client should assume that any information presented or made available on or through this presentation, is a receipt of, or a substitute for personalized investment advice. Such advice may only be rendered after the following conditions are met: 1. delivery of our disclosure brochure to you, and 2. execution of an Investment Advisory and/or Financial Planning Agreement between us.

This presentation contains general information that is not suitable for everyone. The information contained herein should not be construed as personalized investment advice. Past performance is no guarantee of future results. There is no guarantee that the views and opinions expressed in this presentation will come to pass or that any particular investment strategy or asset class will be profitable.

OJMGROUP

DISCLAIMER

OJM is not engaged in the practice of law and does not provide legal advice. Always consult with an attorney regarding your specific legal situation.

The information contained in this presentation is general in nature and should not be acted upon in your specific circumstances without further details and/or professional advice. OJM Does not provide tax advice. Contact your personal tax advisor for specific advice related to your tax situation. These recommendations are not intended as a thorough, in-depth analysis of specific issues nor are they sufficient to avoid tax-related penalties.

OJM Group, LLC does not make any representations or warranties as to the accuracy, timeliness, suitability, completeness, or relevance of this information. All such information is provided solely for convenience purposes only and all users thereof should be guided accordingly. Past performance may not be indicative of future results. Therefore, no current or prospective client should assume that future performance of any specific investment, investment strategy or product made reference to directly or indirectly by OJM Group, LLC will be profitable or equal the corresponding indicated performance level(s).

Please refer to the insurance company's statement for specific details and current values. Please refer to the insurance company's full illustration which is not a guarantee and makes multiple assumptions that are not guaranteed. This statement is meant to be an approximation based on information provided by the insurance company. OJM Group is not affiliated with any insurance company.

OJMGROUP

FREE RESOURCES FOR AEI ATTENDEES

- Text **AEIOJM** to 844-418-1212
  - Click the link in the reply text
- Visit ojmbookstore.com and enter **AEIOJM** at checkout
- Scan the QR Code

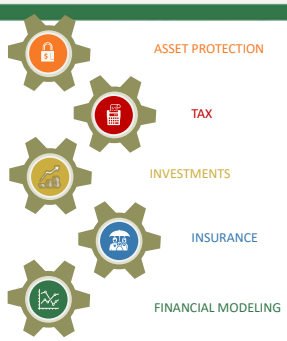
OJMGROUP

PERSONAL WEALTH PLANNING

DIAGNOSTIC vs. TREATMENT

ADVICE & EXPERTISE FOR A FLAT FEE

BUILDING A RELATIONSHIP



OJMGROUP

SPECIAL OFFER: FREE BOOKS FOR WEBINAR ATTENDEES

- **Text AEIOJM to 555-888.**
- Click the link in the reply text.
- Choose your title and book format (hard copy or eBook for Kindle or iPad).
- Enter your name and contact information.
- Click SUBMIT.
- OR **Visit ojmbookstore.com and enter promo code AEIOJM at checkout**

OJMGROUP

FINANCIAL ACTIVITIES MOST PRONE TO FRAUD

- Collection of payments
- Accounts Receivable
- Vendor overpayments
- Payroll

OJMGROUP

COMMON CONTROL ISSUES

- Payment to a fake vendor
- Improper patient refund
- Cash payment from patient not deposited
- Payments not posted to patient accounts
- Personal use of company credit card
- $$ out of petty cash for personal expense
- Payroll to fictitious employee
- Overpayment to employee

OJMGROUP

THE FRAUD TRIANGLE

OJMGROUP

WHAT ARE INTERNAL CONTROLS?

Internal controls are policies, procedures, and mechanisms that a medical practice can put in place to ensure the integrity of its financial and operational processes.

Within the practice these should include

- Separation of duties
- Access controls
- Documentation
- Regular reconciliations
- Audit trails
- Oversight and monitoring
- IT controls

OJMGROUP

WHY INTERNAL CONTROLS?

Fraud requires **Opportunity, Incentive, Rationalization**

- Difficult for you as owner to control motivation and rationalization
- Therefore, you must control opportunity
  - Opportunity exists where there is a breakdown in internal control or where no internal controls exist
- Every practice, large or small must have a set of internal controls
- Requires proper training of those who will be executing the controls
- No plan or training will be effective without oversight by owner or an outside party

OJMGROUP

HIRE THE RIGHT PEOPLE

For all employees utilize:

- Background checks
  - Can retroactively check current employees
- Verify past employment, education, licensing
- Written employee manual with zero tolerance policy
- Cross training of employees
- Required one-week continuous vacation for employees

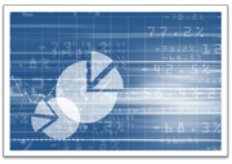
Be wary of employees who:

- Oppose cross training / refuse help
- Are defensive / resistant to change
- Are overly friendly with vendors
- Refuse a promotion or transfer
- Manage patient refunds

OJMGROUP

SEPARATION OF DUTIES

- Person who bills should not handle cash receipts
- Same person cannot order, write, sign and mail checks
- Person accepting payments does not prepare or make deposits
  - Take patient payment, put into practice mgmt. system, someone else applies payment
  - Require that the cash drawer be counted and secured by one employee at close of business and that its total be verified and deposited the next day by a different employee.
- Separate the accounting function from the financial management function
- Person ordering medical supplies does not manage inventory
- Person opening mail does not pay bills
- Person coding does not also do billing
- More than one employee involved in accounting function



OJMGROUP

ACCESS CONTROLS

Limiting access to sensitive information and systems to authorized personnel only

- Use passwords or biometric authentication
  - Require strong passwords / dual authentication
  - Require that passwords be changed regularly
  - No sharing of passwords

- Role based access – staff members only access info needed for job
  - Front desk staff only successes scheduling and check in
  - Medical providers access EMR
  - Medical staff responsible for patient care different than staff maintaining medical records
- Secure physical access
  - Limit physical access to supply room, records storage, financial data with key cards, etc.
- Implement audit trail to track transactions and changes made to financial and operational records

OJMGROUP

REGULAR RECONCILIATIONS

- Reconcile receivables and charges daily
- Reconcile bank deposit to practice management system daily
- Reconcile your bank account each month without fail
- Close out credit card system daily with manager approval
- Review payroll records to ensure employee hours, wages and benefits are appropriate
- Issue a receipt for every transaction and have 2nd person verify daily receipt balances
- Routinely verify petty cash balances
- Routinely verify inventory records of medical supplies and equipment
- Reconcile accounts receivable ledger to endure accuracy and that payment plans are properly recorded

OJMGROUP

OVERSIGHT AND MONITORING

Oversight and monitoring promote transparency and accountability

- Hire an independent auditor to review financial records and internal control systems
- Review your financial statements and your bank and credit card statements
- Review A/R write-offs
- ASK QUESTIONS!!!!!
- Conduct periodic management reviews of internal control systems

- Implement fraud detection software to monitor transactions
- Establish a system for employees to report concerns / issues
- Provide compliance training to employees on internal controls and regulatory requirements
- Occasionally have employees review each other's work
- Open the mail yourself on occasion

OJMGROUP

DOCUMENTATION

- Document the policies and procedures related to internal control
- Create authorization forms for sensitive transactions such as payroll changes and requests for patient information, refunds, etc.
- Maintain transaction logs for key financial and operational transactions such as billings, collections, supply purchases, patient visits
- Require physician or appropriate management signature on checks
- Maintain an up-to-date employee manual which includes policies and procedures

OJMGROUP

AUDIT TRAIL

Have procedures in place to allow for tracking of all transactions and changes made to financial and operational records

- Electronic record that tracks access to patient information
- Patient visit log
- Cash and credit card receipt log
- Bank deposit log
- Bank reconciliations
- Approved vendor list
- Log of patient refunds / AR write-offs
- Petty cash register and receipts

OJMGROUP

IT CONTROLS

Ensure confidentiality, integrity and availability of sensitive information

- Restrict access
  - Passwords
  - 2 factor authentication
  - Restricted to essential personnel
- Encrypt data on servers, laptops, mobile devices
- Data backup and recovery
  - Backup stored in secure location
  - Develop disaster recovery plan
- Security monitoring of IT systems for suspicious activities and regular review of access logs
- Regular and timely updates and patches
- Ensure vendors and third-party providers have appropriate security measures in place
- Educate and train staff on IT security best practices

OJMGROUP

INTERNAL CONTROLS

ABC's of Internal Control:

Always Be Curious

OJMGROUP

CONTACT ME

- Schedule a free no-obligation consultation
- Contact the presenter:
  - Carole C. Foos, CPA
  - 877.656.4362
  - carole@ojmgroup.com

OJMGROUP

DISCLOSURE

The information, analysis, and opinions expressed herein are for general and educational purposes only. Nothing contained in this commentary is intended to constitute personalized legal, tax, accounting, securities, or investment advice, nor an opinion regarding the appropriateness of any investment, nor a solicitation of any type. All investments carry a certain risk, and there is no assurance that an investment will provide positive performance over any period of time. An investor may experience loss of principal. Investment decisions should always be made based on the investor's specific financial needs and objectives, goals, time horizon, and risk tolerance. The asset classes and/or investment strategies described may not be suitable for all investors and investors should consult with an investment advisor to determine the appropriate investment strategy. Past performance is not indicative of future results. Indices are unmanaged and their returns assume reinvestment of dividends and do not reflect any fees or expenses. It is not possible to invest directly in an index. Information obtained from third party sources are believed to be reliable but not guaranteed. All opinions and views constitute our judgments as of the date of writing and are subject to change at any time without notice.

OJMGROUP

SELF EVALUATION

Preventing Fraud and Increasing Revenue through Effective Financial Controls

1. T/F - The 3 elements of the fraud triangle are Opportunity, Incentive and Rationalization.

2. An example of separation of duties is

a. Having the front desk person open mail and make deposits.
b. Having the accounts payable clerk sign checks.
c. Having a medical assistant manage supplies inventory and the front desk person order supplies.
d. Having the billing clerk inputting medical coding.

3. One way to limit access is to

a. Require dual authentication
b. Require key card entry to the records storage room
c. Require that passwords be changed regularly
d. All of the above

4. T/F - A background check can be run on a current employee with the employee's permission.

5. T/F - The practice bank account should be reconciled daily.

6. T/F - Fraud opportunity exists where there is a breakdown of internal control.

7. T/F - Requiring each employee to take an annual one week continuous vacation is a good internal control policy.

Answer Key: 1. T, 2. C, 3. D, 4. T, 5. F, 6. T, 7. T

Eric J. Ploumis, DMD, JD

Eric Ploumis, DMD, JD, of New York, New York, is an attorney, orthodontist, Adjunct Clinical Associate Professor in Graduate Orthodontics at New York University College of Dentistry, and clinical attending faculty at Wyckoff Heights Hospital Pediatric Residency Program. His legal practice as of-counsel with Rivkin Radler, LLP focuses on the business and transactional issues related to the practice of dentistry including practice transitions, partnership and employment agreements, office leases and the defense of allegations of professional misconduct. Dr. Ploumis also maintains a practice in orthodontics in New York City, has contributed to many dental journals and is a frequent national speaker on dental-legal topics.

You may contact Dr. Ploumis with your questions and comments by email at EPloumis@DentalPracticeLawyers.com

Eric J. Ploumis, DMD, JD
453 Second Avenue
New York, NY 10010
EPloumis@DentalPracticeLawyers.com

Associate Agreements: Understanding the Options

Why am I speaking to you today?

This presentation is designed to highlight some of the legal issues in employment contracts. We will explore the issue from the perspective of both the employer and employee, focusing on the concerns of a recent graduate.

1

Why would you be offered a job by a senior doctor?

- Excessive patient load
- Desire to reduce workload
- Transition imminent

2

What should you be careful of when evaluating an offer?

- Professional companionship
- Expectation of growth
- Desire to keep all procedures "in house"
- Locked-in buyer
- Better utilization of overhead

3

Employment Contract
vs.
Independent Contractor Agreement

4

Employee

- W-2 tax form
- Income tax, social security tax, Medicare taxes are withheld
- Employer pays matching social security Medicare, unemployment (FUTA) taxes (7.65%), you match at 7.65%
- May deduct unreimbursed expenses (Schedule A)

5

Independent Contractor

- 1099 tax form
- IC pays all income and self-employment tax
- No withholding by business—must make quarterly tax payments
- May deduct business expenses (Sched. C)

6

Independent Contractor

- Behavioral Control
  - instructions on how to perform procedure
  - how, when, where to do the work
  - tools or equipment provided
  - assistants provided
  - where to purchase supplies

7

Independent Contractor

- Financial Control
  - Investment in the office
  - Reimbursed for expenses
  - Opportunity for profit or loss

8

Corporate Opportunities

9

Elements of an Employment Agreement

- services and duties
- term and termination
- compensation
- employee expenses
- days off
- representations
- malpractice insurance
- restrictive covenants
- ownership potential
- legal remedies

10

Services and Duties of Employee

- hours and days
- call schedule
- administrative duties
- professional and promotional activities
- study groups
- outside employment

11

Associates, you have two functions in the office:

- Make your employer's life easier
- Make money for your employer

12

Term of Agreement

- employment at will
- length of employment (usually one year)
- renewal status
  - self-renewing
  - self-extinguishing

13

Termination of Agreement

- death
- disability, full/partial
- for cause
- without cause, 30/60/90
- at discretion of employer

14

Compensation of Employee

- salary vs. hourly vs. per diem
- bonus system
- percent of production or collection
  - net lab bill
- percent vs. base per diem
- pension, health, fringe benefits
- call schedule
- promotional activities

15

Employee Expenses

- auto
- cell phone
- continuing education
- practice promotion
- professional association dues

16

Vacation and Personal Days

- vacation
- personal
- sick days
- jury duty
- pregnancy leave

17

Representations by Employee

- licensed (always check website!)
  http://www.op.nysed.gov/opsearches.htm
- competent
- sober
- honest (background check)
- check your social media profile

18

Malpractice Insurance

- occurrence vs. claims made
- tail coverage
- prorated premium for part-time work
- same carrier as employer if possible

19

Restrictive Covenants

- access to and return of confidential information (patient list)
- non-compete clause
  - reasonable time and distance
- non-solicitation clause

20

Restrictive Covenants

- Restrictive covenants are enforceable: don't sign one if you don't intend to adhere to it.
- Be careful about a "bait and switch" restrictive covenant.
- Watch out for multiple-location practices

21

Restrictive Covenants

- You will be asked to sign a restrictive covenant: look for creative solutions to difficult issues.
  - grace period before restrictions kick in
  - carve out specific towns or practices
  - different parameters for dismissal without cause

22

Ownership Interest or Potential

- no interest or potential for any interest
- "sweat" equity
- gradual buy-in

23

Legal Remedies

- Loser pays provision
- Dispute Resolution
  - litigation
  - mediation/arbitration
  - injunction (for restrictive covenants)

24

Boilerplate Provisions

- notice
- governing law
- assignment
- entire agreement
- severability

25

Disclaimer

This information is not intended at a substitute for legal advice. You should familiarize yourself with the laws of your local jurisdiction and seek legal advice from a local attorney who specializes in such matters.

26

SELF EVALUATION

Associate Agreements: Understanding the Options

1. The “right” reasons an office needs an associate include:

a. Excessive patient load
b. The desire for the senior doctor to reduce his/her workload
c. A transition is imminent
d. All of the above

2. An employee receives what type of tax document at the end of the fiscal year:

a. 1099
b. W-2
c. K-1
d. None of the above

3. If your jurisdiction permits restrictive covenants in associate agreements, they must be:

a. Less than five miles
b. Less than one year
c. No broader than necessary to protect the employer’s legitimate business interests
d. Whatever the parties negotiate

4. T/F - In an “employment at will” jurisdiction, either party may terminate an associate’s employment agreement at any time for any reason.

5. T/F - The terms of a negotiated employment agreement supersede any federal, state, or local laws as long as the parties agree to it.

Answer Key: 1. D, 2. B, 3. C, 4. T, 5. F

Endodontic Breakthroughs and Advancements, Essential Endodontic Concepts

Gary Glassman, DDS

ENDODONTIC BREAKTHROUGHS AND ADVANCEMENTS

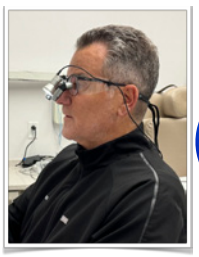
ESSENTIAL CONCEPTS FOR CANAL SHAPING

ENDODONTIC INNOVATIONS

- High Visual Magnification and Fibre Optic Illumination
- Ultrasonics and Sonics
- CBCT (3-D) Imaging
- 3-D Disinfection
- Guided Navigation

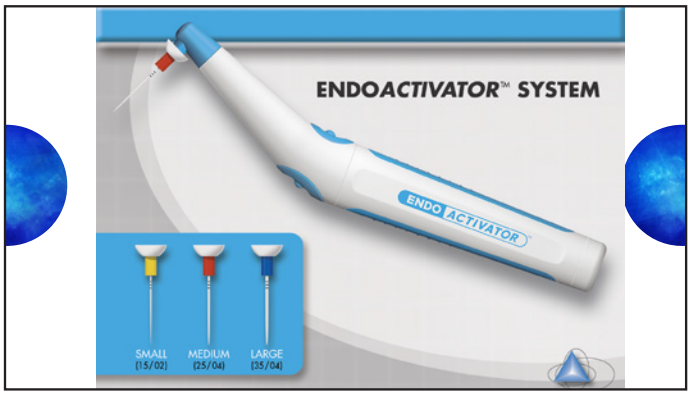
SYNCA Hapi K. Randhawa-Sahota, RD

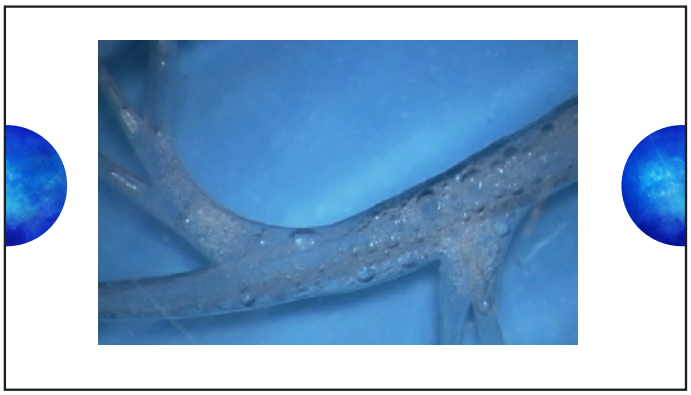
SYNCA Trevor Meades, R.D.



ANDAU MEDICAL
www.andaumedical.com

sheryl.lee@andaumedical.com
julianne.tabata@andaumedical.com

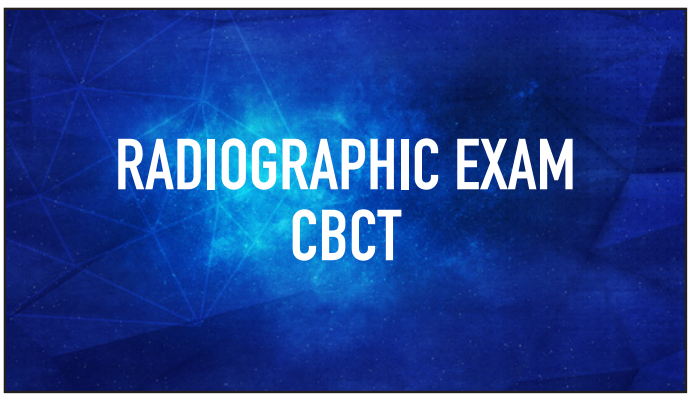


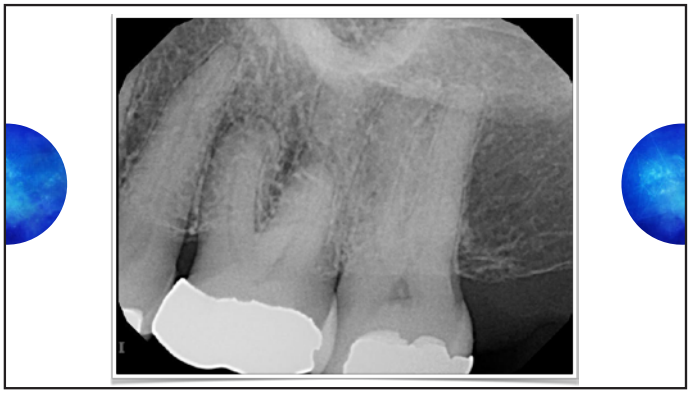


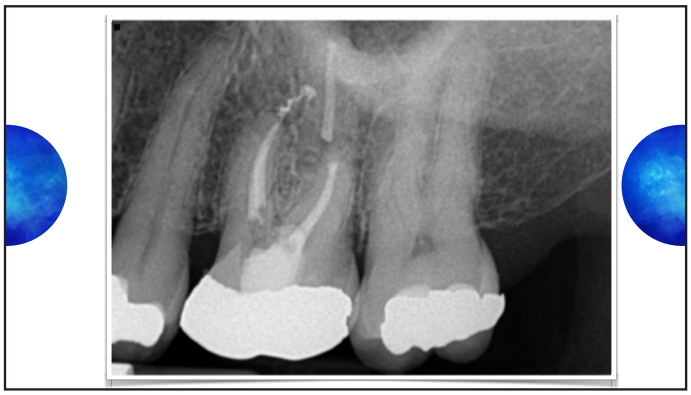
Necrotic Tissue Removal

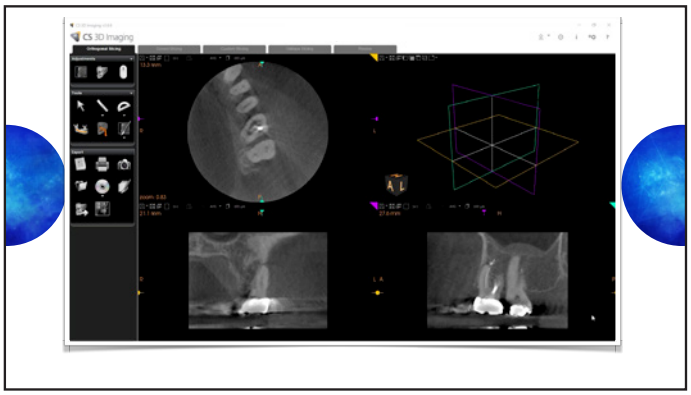
Tissue dissolved 12 times faster when continuously agitated as compared to no agitation.

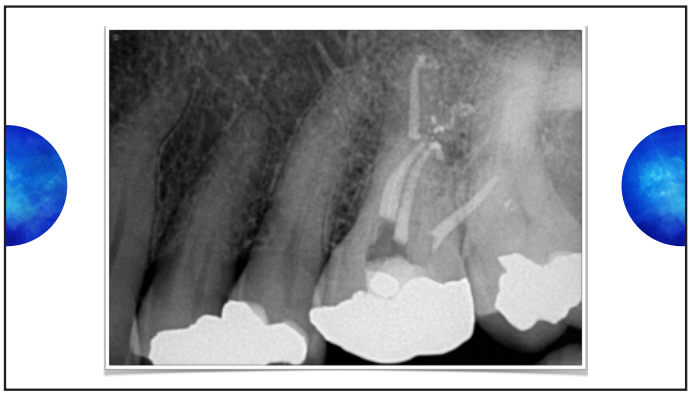
Stojicic, Sonja, Slavoljub Zivkovic, Wei Qian, Hui Zhang, and Markus Haapasalo. "Tissue dissolution by sodium hypochlorite: effect of concentration, temperature, agitation, and surfactant." Journal of endodontics 36, no. 9 (2010): 1558-1562

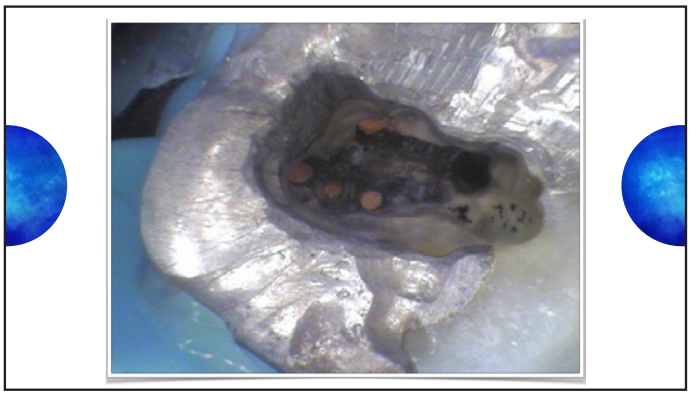


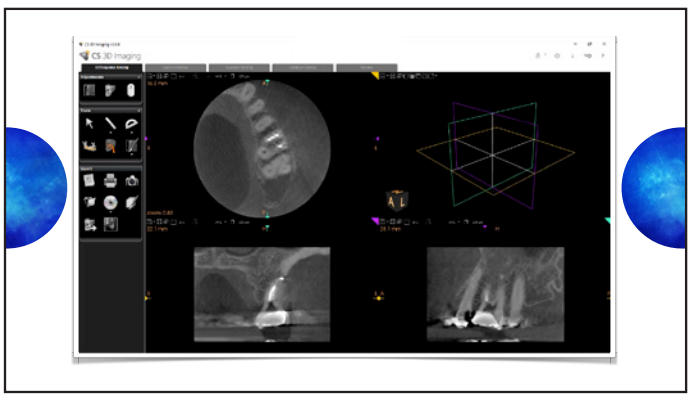


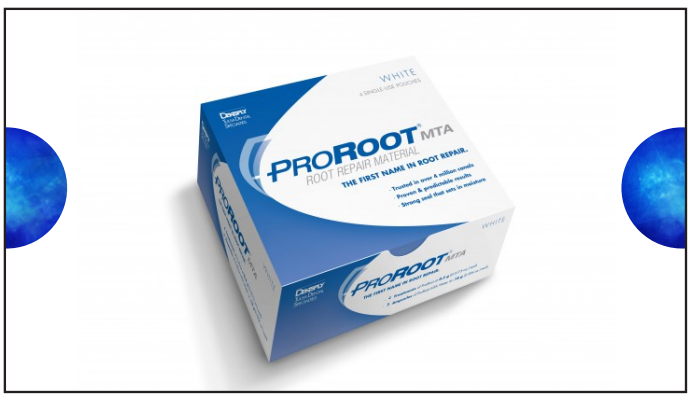




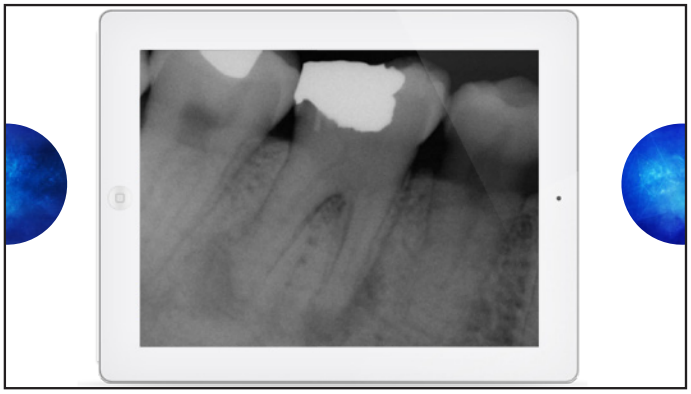


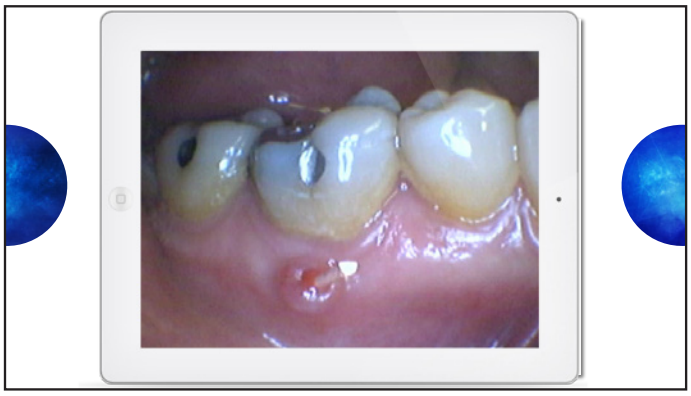


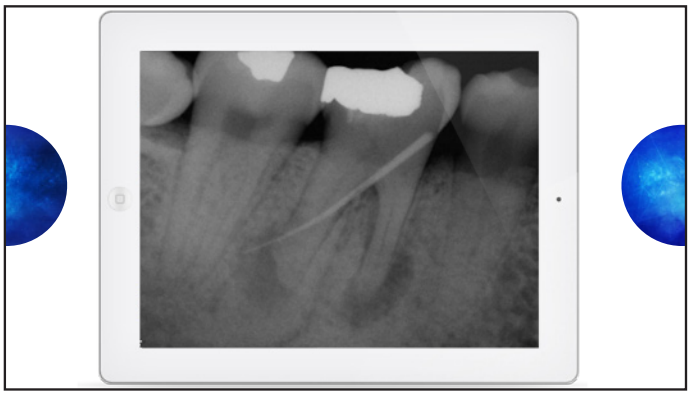


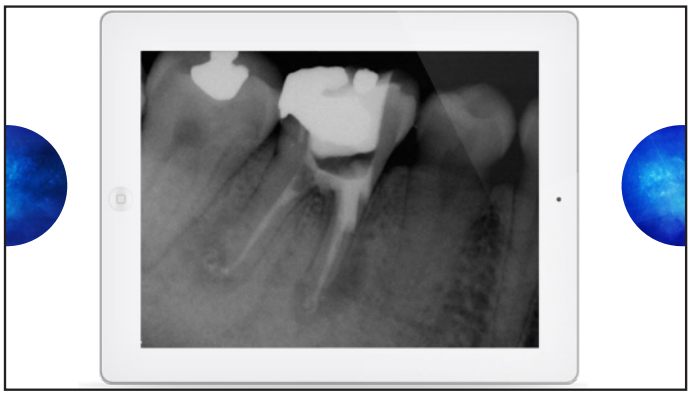

WHITE
PROROOT MTA
ROOT REPAIR MATERIAL
THE FIRST NAME IN ROOT REPAIR.

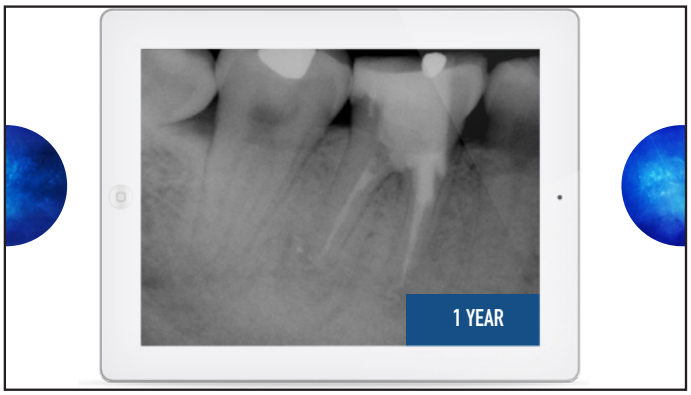

I HAD A BAD MONTH
ONE DAY










1 YEAR

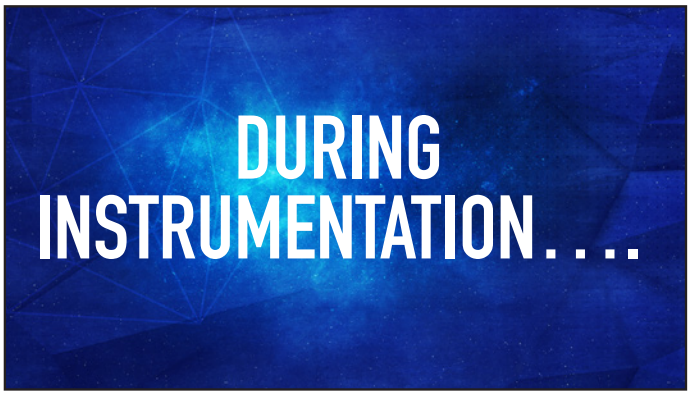

INTERNATIONAL
FOCUS


IRRIGATION

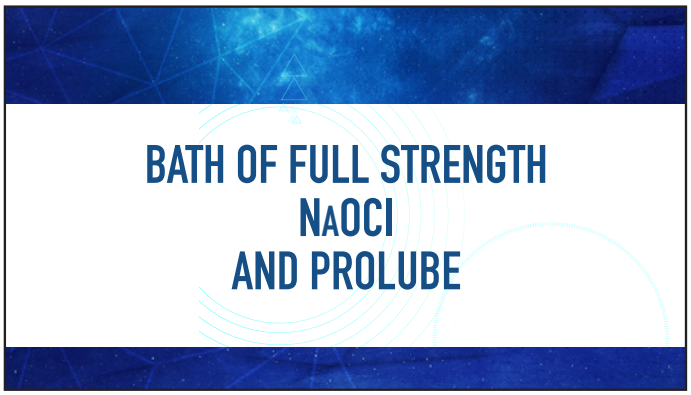

NOW PLAYING:
THE MAIN EVENT


Irrigation


DEEP DIVE
MORE ON THIS LATER
BUT FOR NOW.....


DURING
INSTRUMENTATION....


MAKE SURE.....

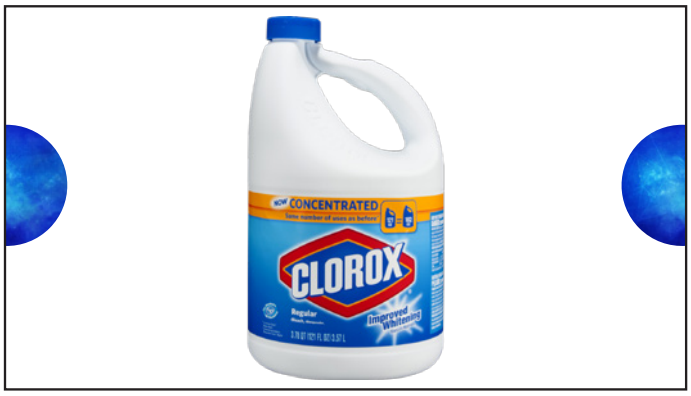

BATH OF FULL STRENGTH
NaOCl
AND PROLUBE

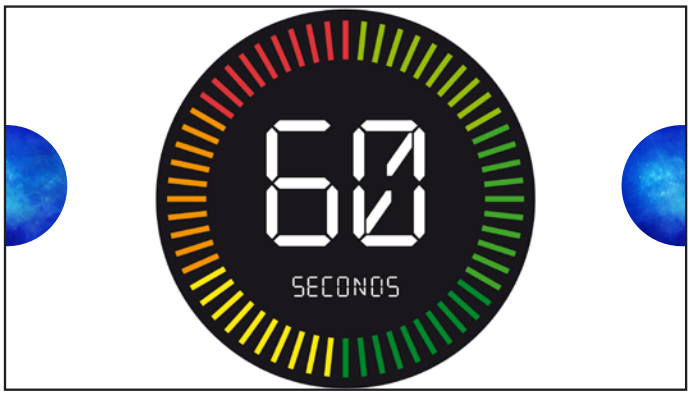

THREE
THINGS YOU
CANT DO
TOO MUCH!
✓Patency
✓Refresh NaOCl
✓Working Length

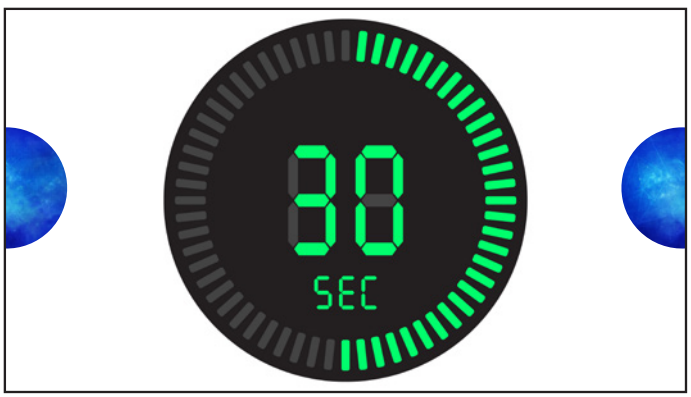

CONCENTRATED
CLOROX

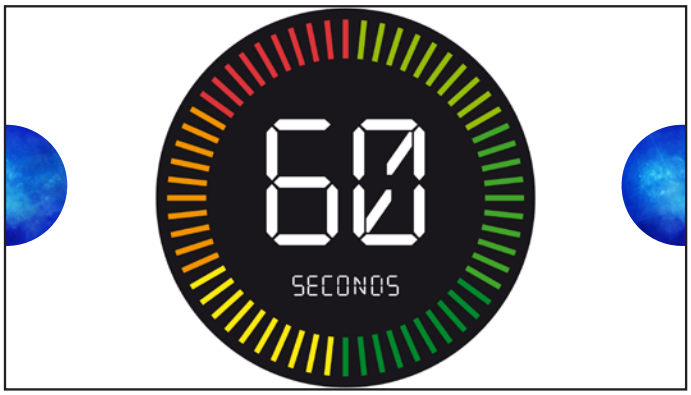
ProLube^R

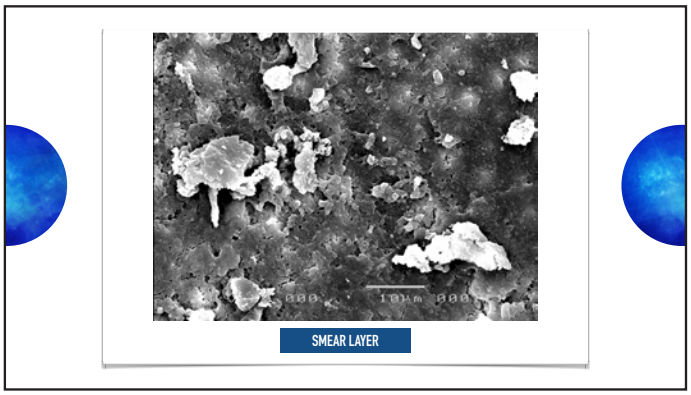
FINAL IRRIGATION. . . .

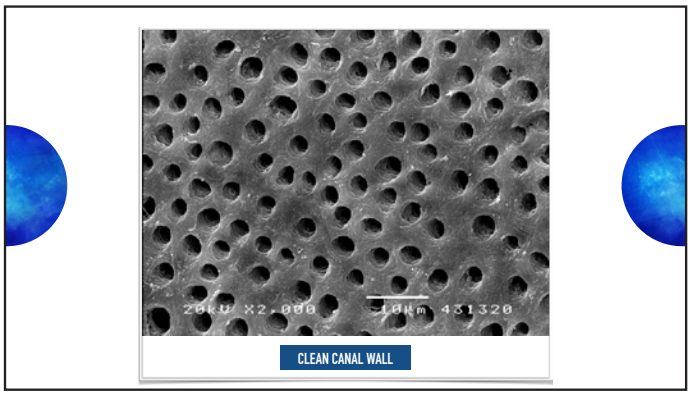


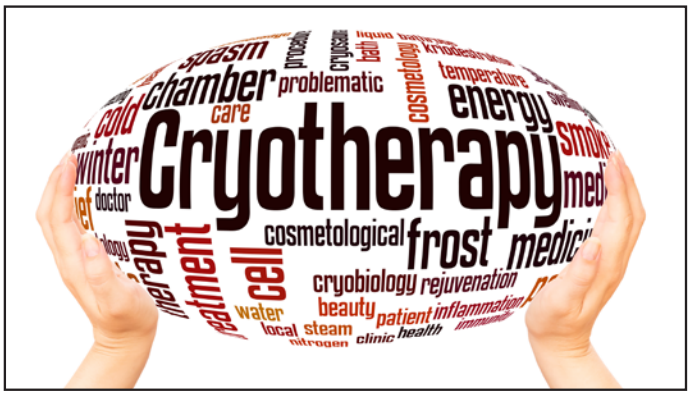


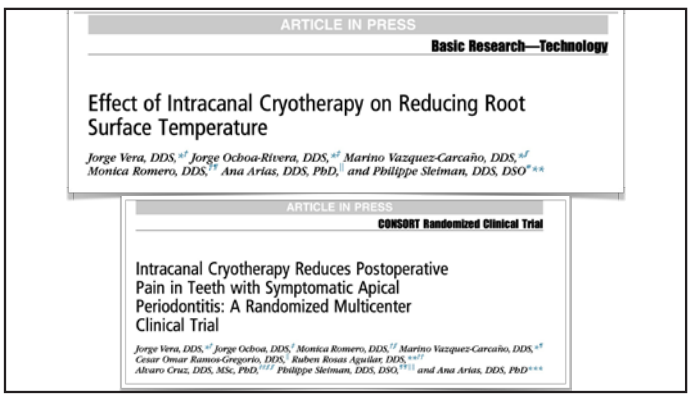












ARTICLE IN PRESS

Basic Research—Technology

Effect of Intracanal Cryotherapy on Reducing Root Surface Temperature

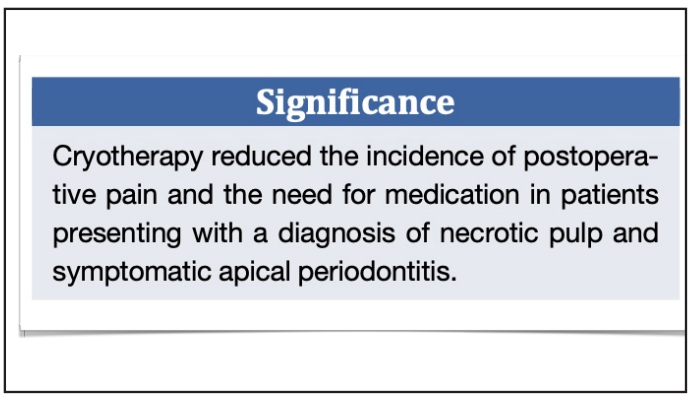
Jorge Vera, DDS,*† Jorge Ochoa-Rivera, DDS,*† Marino Vazquez-Carcaño, DDS,*‡ Monica Romero, DDS,†§ Ana Arias, DDS, PhD,‖ and Philippe Sleiman, DDS, DSO#**

ARTICLE IN PRESS

CONSORT Randomized Clinical Trial

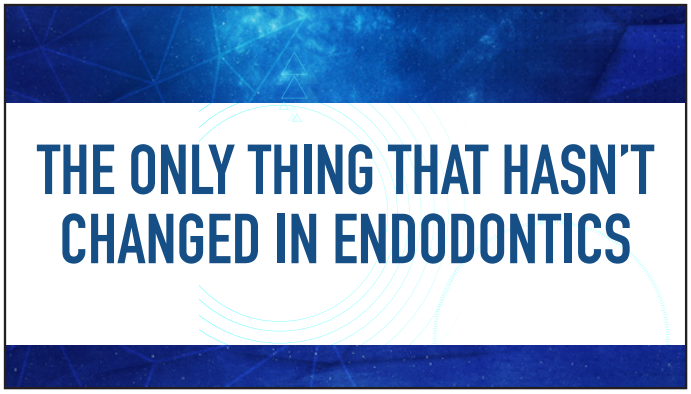
Intracanal Cryotherapy Reduces Postoperative Pain in Teeth with Symptomatic Apical Periodontitis: A Randomized Multicenter Clinical Trial

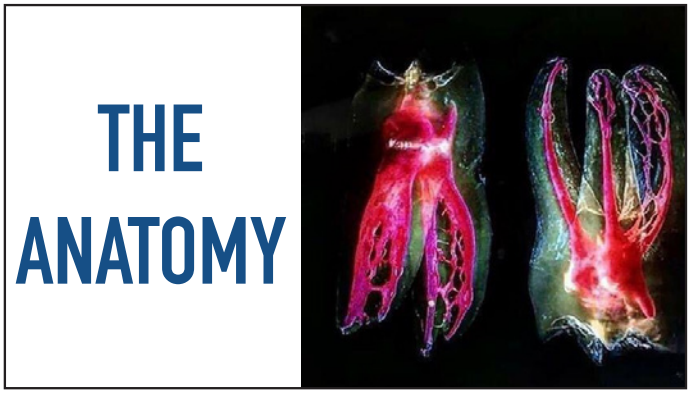
Jorge Vera, DDS,*† Jorge Ochoa, DDS,† Monica Romero, DDS,†‡ Marino Vazquez-Carcaño, DDS,*† César Omar Ramos-Gregorio, DDS,† Ruben Rosas Aguilar, DDS,*†‡ Alvaro Cruz, DDS, MSc, PhD,‖‖ Philippe Sleiman, DDS, DSO,¶¶ and Ana Arias, DDS, PhD***

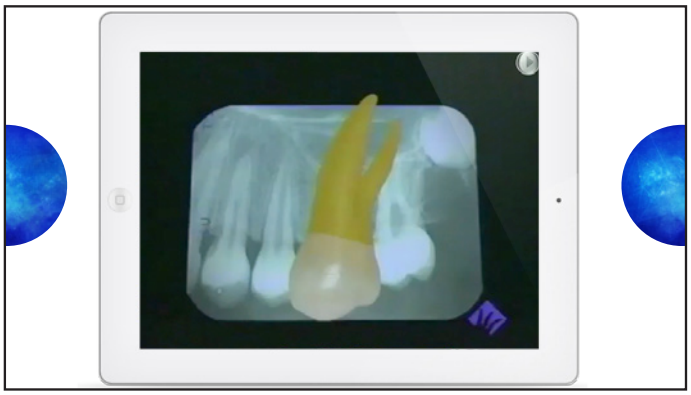


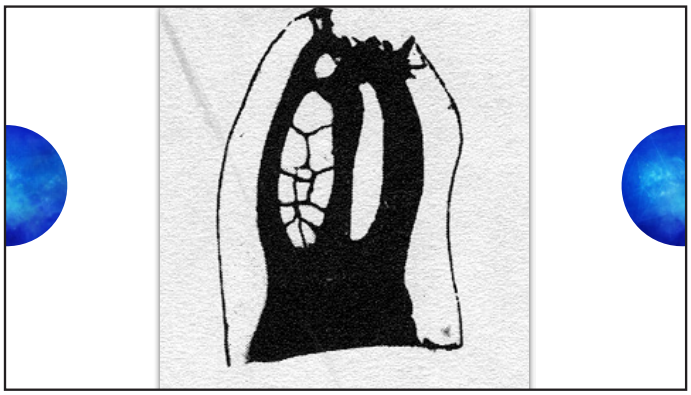
Significance

Cryotherapy reduced the incidence of postoperative pain and the need for medication in patients presenting with a diagnosis of necrotic pulp and symptomatic apical periodontitis.

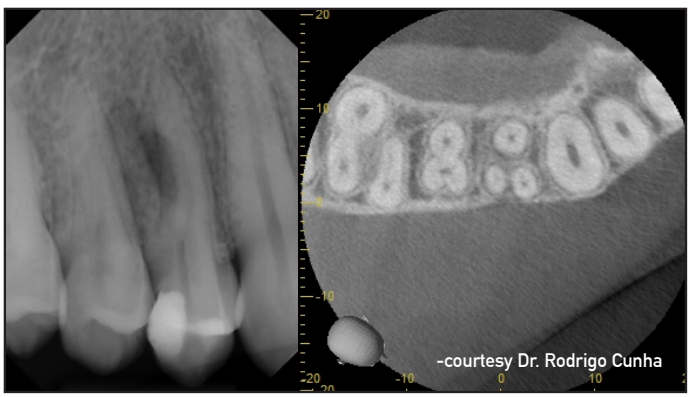

THE ONLY THING THAT HASN'T CHANGED IN ENDODONTICS

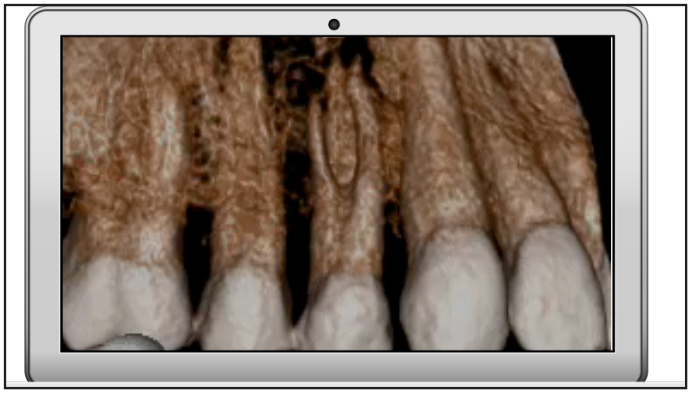

THE ANATOMY

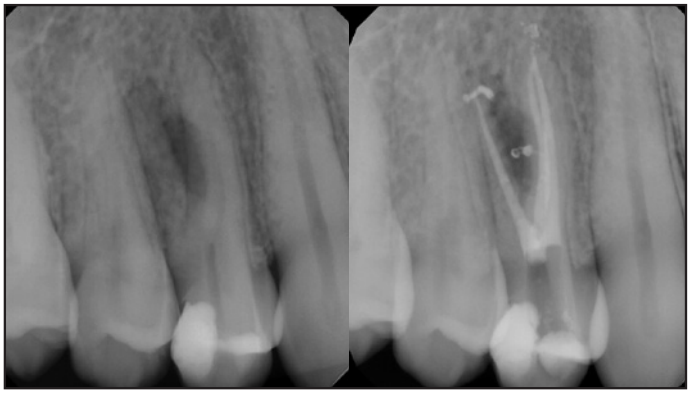


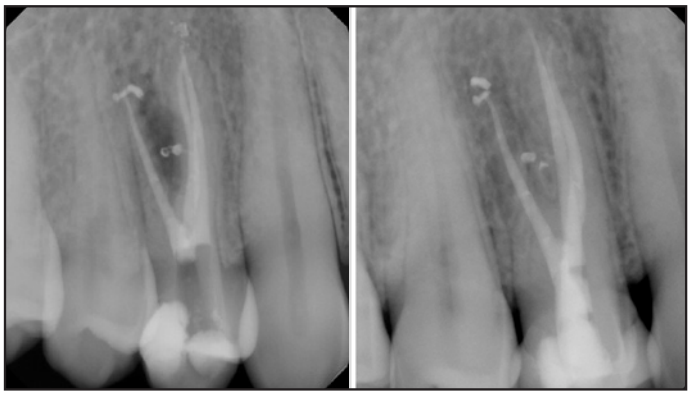



COURTESY DR. FANBING, SHANGHAI


-courtesy Dr. Rodrigo Cunha





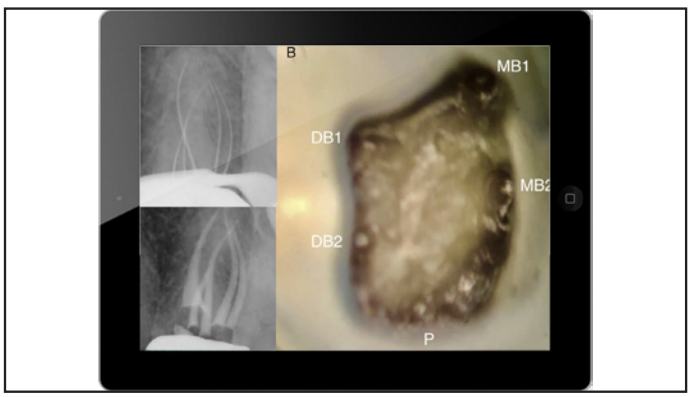


Maxillary First Molars with 2 Distobuccal Canals: A Case Series

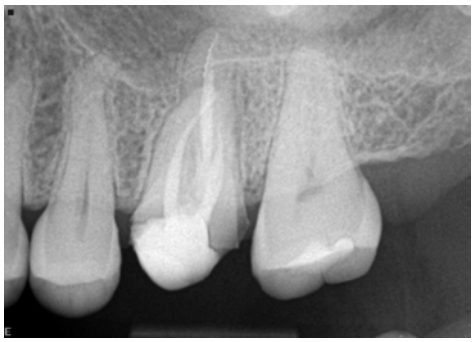
Howard M. Fogel, DMD, MS, FRCD(C), and Rodrigo Sanches Cunha, DDS, MSc, PhD, FRCD(C)

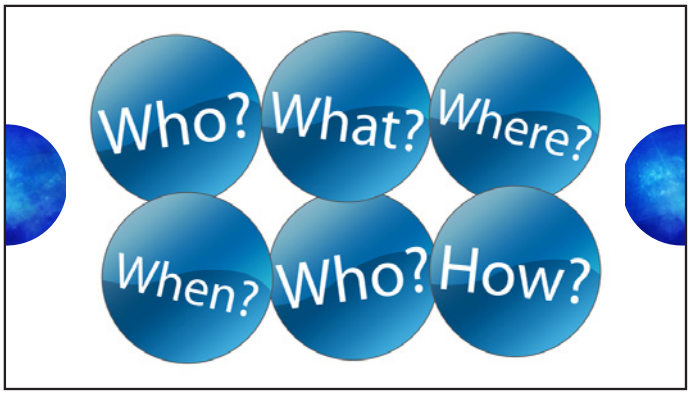
Significance

Missed canals are one of the main causes of endodontic failure. This study reported 8 cases from the same practice where a second DB canal was located and negotiated successfully using magnification and illumination in maxillary molars. Even though it is not common, clinicians should be aware of the existence of this second DB canal.

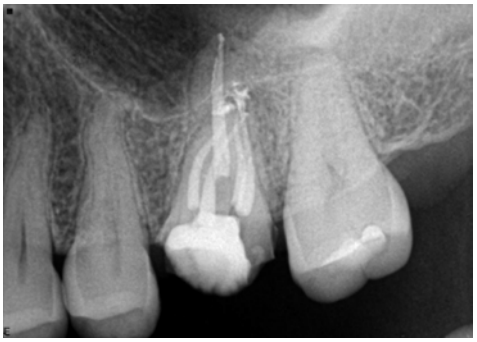


The **incidence** of second distobuccal **canal** (**DB2**) has been reported to be between 1.6% and 9.5%. The **incidence**of two root **canals** in the palatal root has been found to be 0.2% to 7.0%.



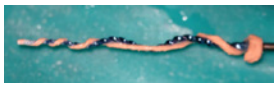


“Re-disinfection”



XP-3D Retreatment Protocol

- Create a well in coronal portion of gutta percha (3-5mm).
- Place several drops of chloroform or other solvent of choice.
- Place tip of XP-3D Shaper on coronal portion and engage handpiece at 1000-1500 RPMs.
- Use very light pressure letting the XP-3D Shaper's tip create frictional heat and enter the GP.
- Allow the XP-3D Shaper to gently corkscrew around the gutta percha pulling you down slightly.
- Use long gentle strokes to tease out large strands of gutta percha.
- Once you feel you have remove the mass of gutta percha with the Shaper use the Finisher.
- Use the finisher at same speed along the entire length of the canal for about 1-2 min.
- Use copious irrigation and suction to remove the gutta percha tags.
- Obturate with BC Sealer and BC Points.

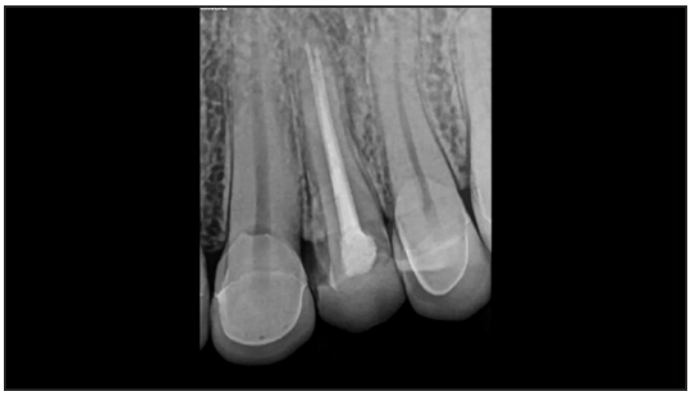


BRASSELER USA

XP-3D Shaper Corkscrew Effect

BRASSELER USA

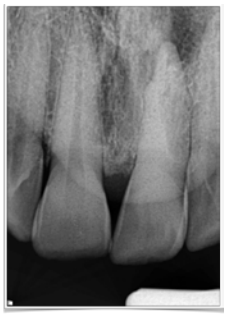
180

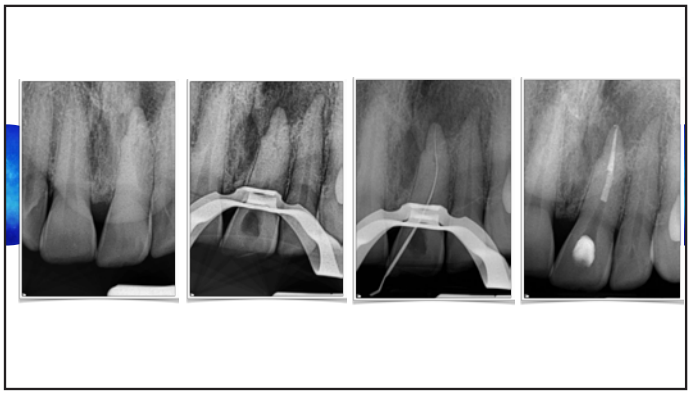


CALCIFIED CALCIFYING

OBLITERATED OBSTRUCTED

BLOCKED LEDGED





GUIDED NAVIGATION


Dr. Bobby Nadeau
DDS, MSc Endo
Kingston Endodontics
@NADEAU.ENDO


BAG of
TRICKS


PRACTICE
PRACTICE
PRACTICE
PRACTICE
PRACTICE
PRACTICE
PRACTICE
PRACTICE
PRACTICE
PRACTICE

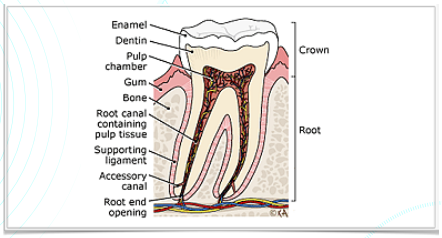

WWW.ROOTCANALS.CA
ENDODONTIC SPECIALISTS
Keeping our patients safe is our top priority.


WWW.ROOTCANALS.CA
ENDODONTIC SPECIALISTS
Keeping our patients safe is our top priority.


WWW.ROOTCANALS.CA


Bettina Basrani
Editor
Endodontic Irrigation
Chemical Disinfection of the Root Canal System
Springer
Apical Negative Pressure: Safety, Efficacy and Efficiency
9

ENDO=INSIDE ODONT=TOOTH



MAIN OBJECTIVE IN DENTISTRY!!!

PREVENTION OF ORAL DISEASE....

PRESERVATION OF THE NATURAL DENTITION!!!

MAIN OBJECTIVE OF ENDODONTICS!!!

PREVENTION AND/OR ELIMINATE APICAL PERIODONTITIS

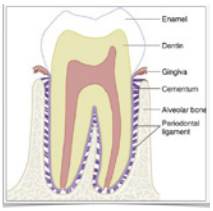
ENDODONTIC INTRIGUE

ENERGY

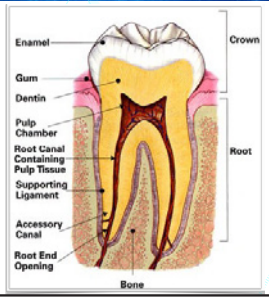
- THERE IS AN ENERGY THAT SURROUNDS ENDO. IT'S INTRIGUING WORK PERFORMED BLING WITHIN A 3D COMPLEX SYSTEM
- THE EFFECTS OF THE PULPAL DISEASE ARE DEBILITATING.
- THE EFFECTS OF TREATMENT ARE MIRACULOUS.

DENTIN-PULP COMPLEX

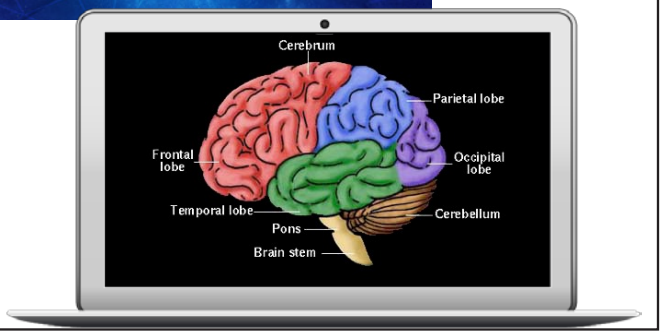
- All areas of Dentistry revolve around the dental pulp
- Protect it
- Respect it
- Quell it
- Avoid it



FORMATIVE AND PROTECTIVE FUNCTION



LOW OR NON COMPLIANT ENVIRONMENT



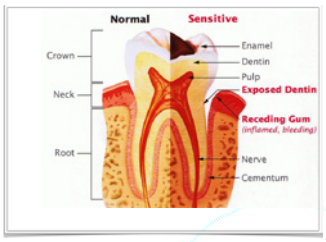
ENDODONTIC SYMPTOMS

Caused by irritation of the pulpal tissue.

- Cold/Heat

Caused by effect of pulpal disease on the periapical tissues.

- supporting bone
- periodontal ligament (PDL)



BACTERIA: "EVIL OF ALL ROOT"

BACTERIA: "EVIL OF ALL ROOT"

The effects of surgical exposures of dental pulps in germ-free and conventional laboratory rats

S. Kakehashi, Harold R. Stanley, R.J. Fitzgerald

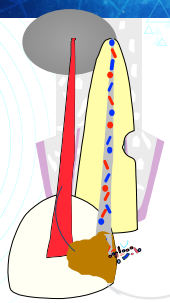
1965

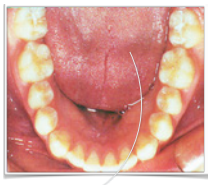
Oral Surgery, Oral Medicine, Oral Pathology

The purpose of this study was to observe the pathologic changes resulting from untreated experimental pulp exposures in germ-free rats as compared with conventional rats with a normally complex microflora. The pulp tissues of these rats were exposed by drilling through the occlusal surface of the maxillary right first molar.

The results, indicate that the presence or absence of a microbial flora is the major determinant in the healing of exposed rodent pulps.

PULP AND PERIAPICAL DISEASE





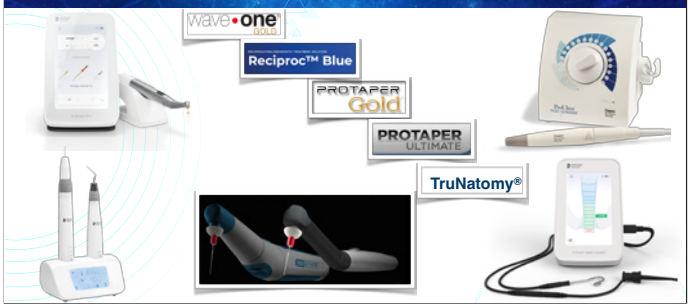
ORAL MICROORGANISMS

REASONS FOR ENDODONTIC TREATMENT

1. INTENSE TOOTH PAIN
2. SEVERE TOOTH SENSITIVITY
3. TRAUMATIC INJURY
4. TOOTH DISCOLORATION
5. SWOLLEN OR TENDER GINGIVA
6. RECURRING ABSCESS ON THE GINGIVAL LINE
7. A CRACK IN A FILLING

ESSENTIAL CONCEPTS FOR CANAL SHAPING

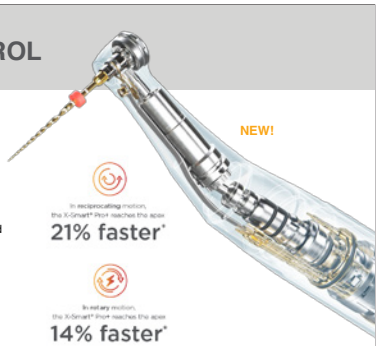
WHAT DO YOU NEED TO GET STARTED?



RESPONSIVE CONTROL

Patented Brushless DC Motor Control

- Unlike the periodic feedback of brush and sensor-based motor control, X-Smart® Pro+ features a patented sensorless system for 360 degrees of speed and torque feedback, enabling quicker reaction times for stable file settings.



216

Shaping | Dentsply Sirona

RESPONSIVE CONTROL

Patented Brushless DC Motor Control

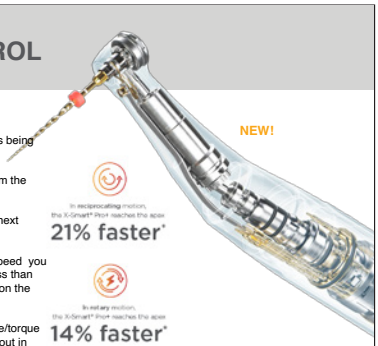
This means that traditional motors check how much torque is being applied to the file at certain intervals in rotation.

So if a file were to experience a lot of torque (resistance) from the tooth in between one of those intervals it:

(a) wont auto-reverse If it's reached it's torque limit until the next interval in rotation and/or

(b) wont compensate by increasing speed to maintain the speed you set for your file (so a 500 rpm file might be spinning at less than that due to increased resistance, which increases stress on the instrument).

The new Pro+ always has real time information on resistance/torque being applied to the file to compensate on speed or reverse out in real time.



Shaping | Dentsply Sirona

X-SMART PRO APEX LOCATOR

CONCEPT #1
SHAPING

NICKEL TITANIUM

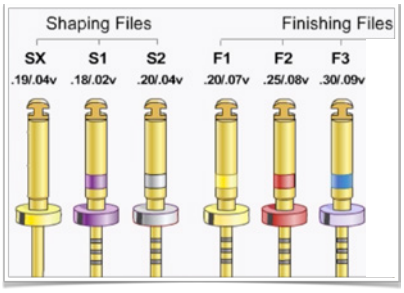
MOTIONS

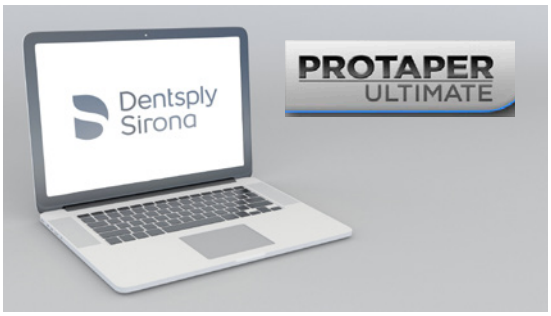
- ✓ Rotary
- ✓ Reciprocation

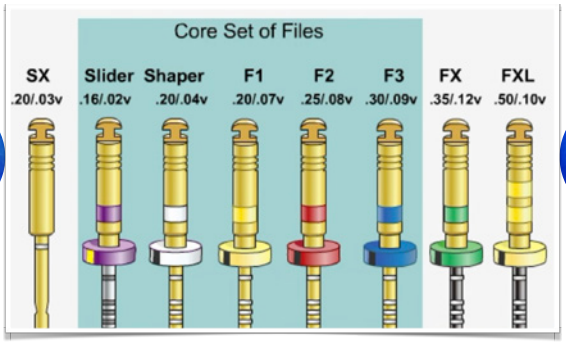
ROTARY

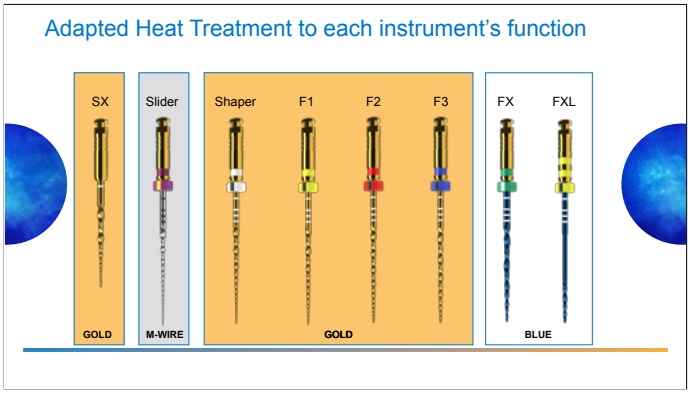
PROTAPER Gold™

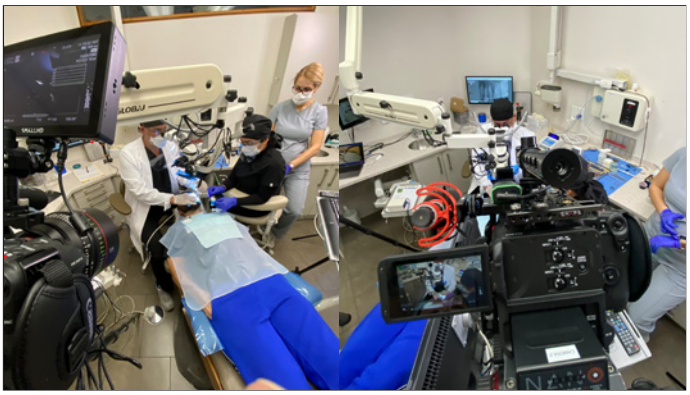
PROTAPER Gold

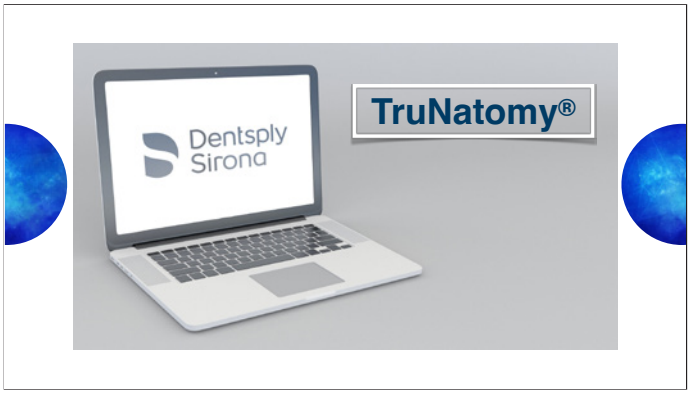


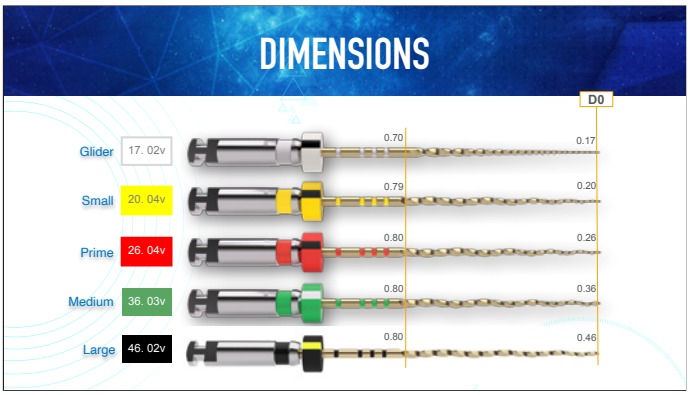



Core Set of Files
SX .20/.03v
Slider .16/.02v
Shaper .20/.04v
F1 .20/.07v
F2 .25/.08v
F3 .30/.09v
FX .35/.12v
FXL .50/.10v


Adapted Heat Treatment to each instrument's function
SX
Slider
Shaper
F1
F2
F3
FX
FXL
GOLD
M-WIRE
GOLD
BLUE

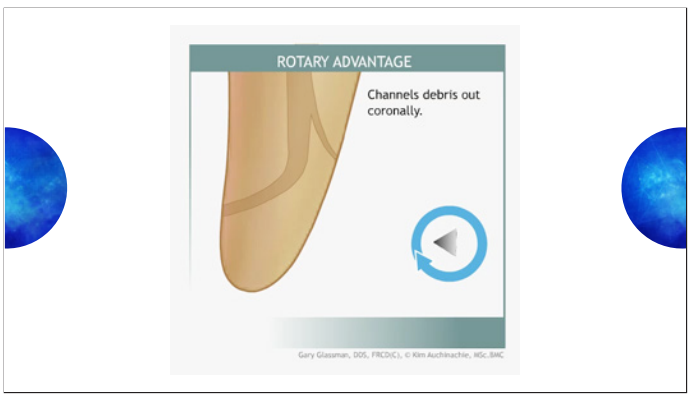


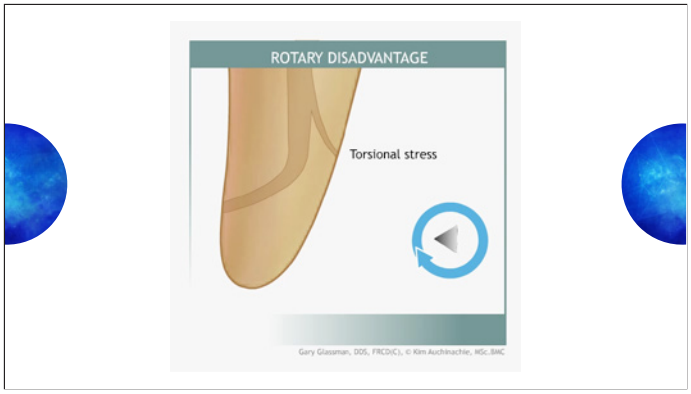

Dentsply Sirona
TruNatomy®

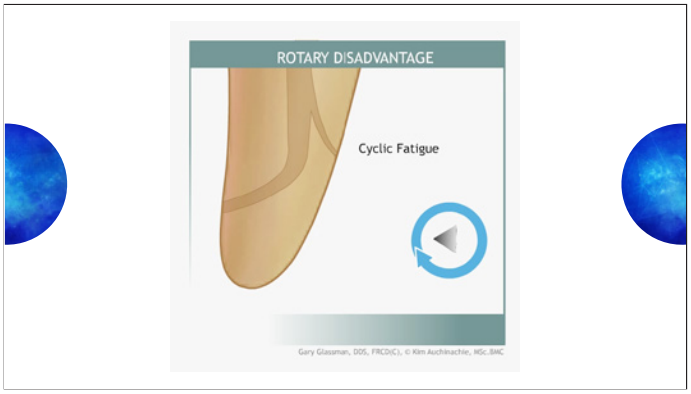

DIMENSIONS
D0
Glider 17. 02v
Small 20. 04v
Prime 26. 04v
Medium 36. 03v
Large 46. 02v
0.70
0.17
0.79
0.20
0.80
0.26
0.80
0.36
0.80
0.46


ROTARY
Cross section of Rotary File


ROTARY AUTO REVERSE
Cross Section of Rotary Auto Reverse File

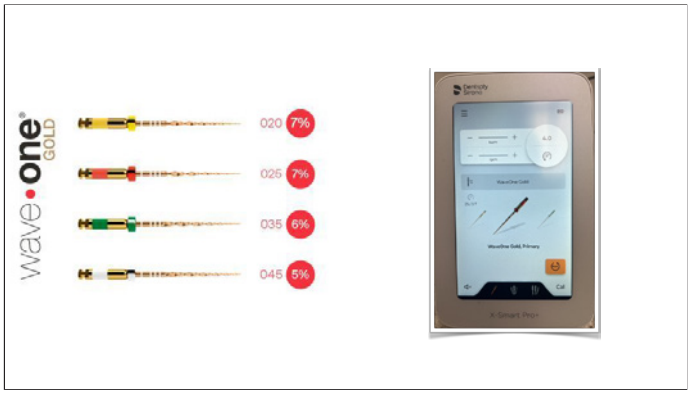

ROTARY ADVANTAGE
Channels debris out coronally.





RECIPROCATION

wave•one® GOLD



RECIPROCATING ENDODONTIC TREATMENT SOLUTION
Reciproc™ Blue

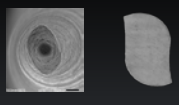
RECIPROC® blue

- 3 sizes
  - R25 for narrow canals
  - R40 for medium canals
  - R50 for large canals

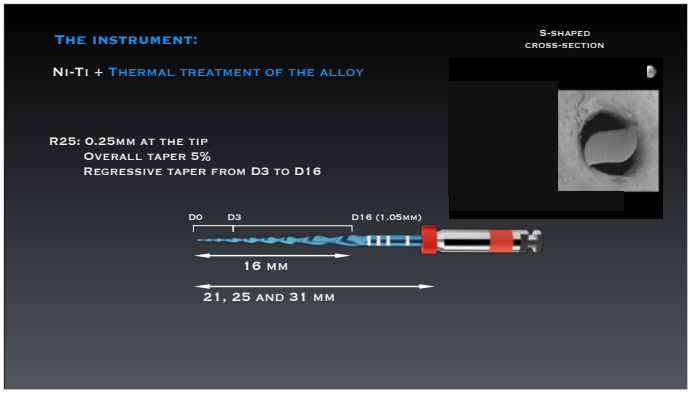
THE INSTRUMENT:

NI-TI + THERMAL TREATMENT OF THE ALLOY

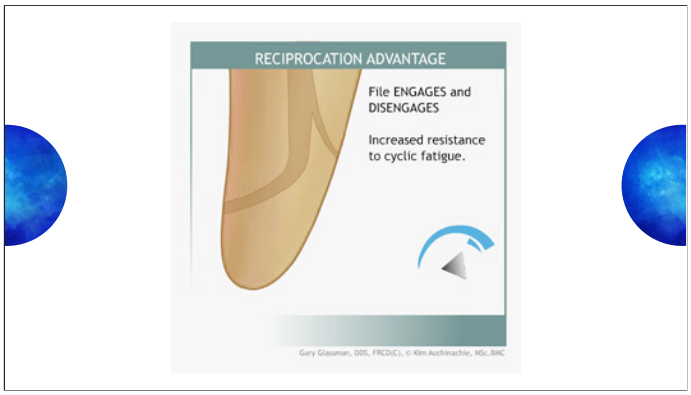
S-SHAPED CROSS-SECTION

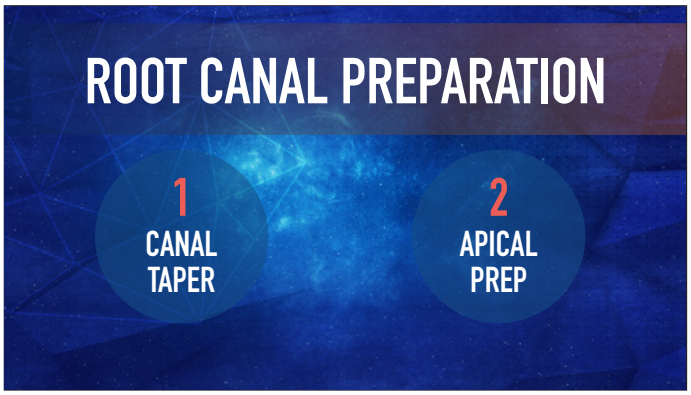


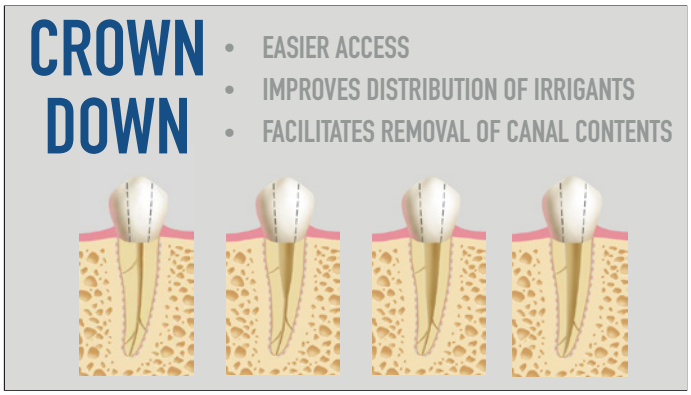
R25: 0.25MM AT THE TIP
OVERALL TAPER 5%
REGRESSIVE TAPER FROM D3 TO D16


THE INSTRUMENT:
S-SHAPED CROSS-SECTION
NI-TI + THERMAL TREATMENT OF THE ALLOY
R25: 0.25MM AT THE TIP
OVERALL TAPER 5%
REGRESSIVE TAPER FROM D3 TO D16
D0
D3
D16 (1.05MM)
16 MM
21, 25 AND 31 MM

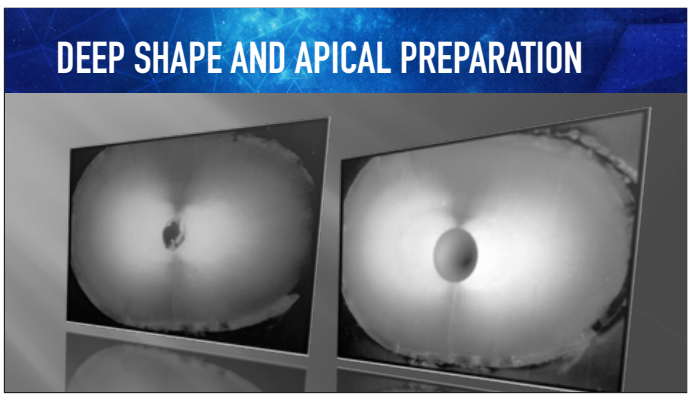

RECIPROCATON FILE
Cross Section of W1G file
150° Counter Clockwise, 30° Clockwise
File Reciprocation

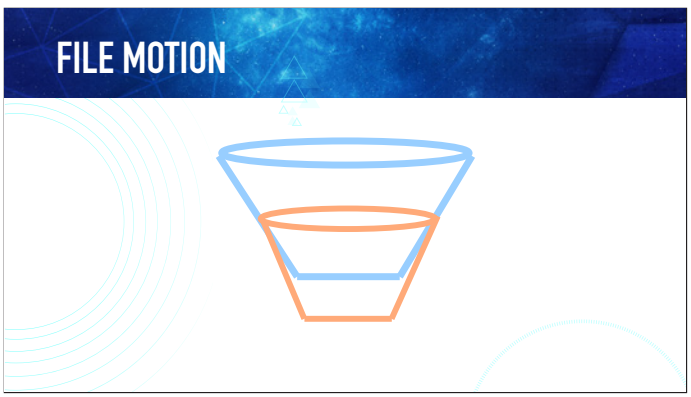

RECIPROCATION ADVANTAGE
File ENGAGES and DISENGAGES
Increased resistance to cyclic fatigue.


ROOT CANAL PREPARATION
1
CANAL TAPER
2
APICAL PREP


CROWN DOWN
EASIER ACCESS
IMPROVES DISTRIBUTION OF IRRIGANTS
FACILITATES REMOVAL OF CANAL CONTENTS


APICAL PREPARATION

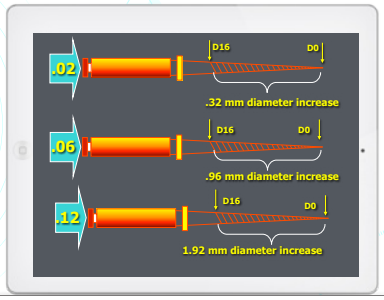

DEEP SHAPE AND APICAL PREPARATION


FILE MOTION

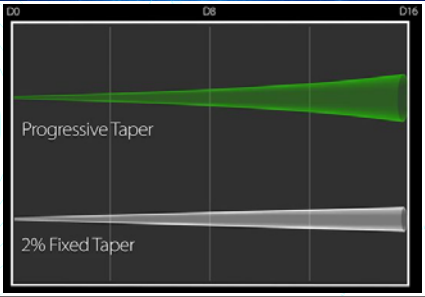
"SMALL BITES"

TAPER

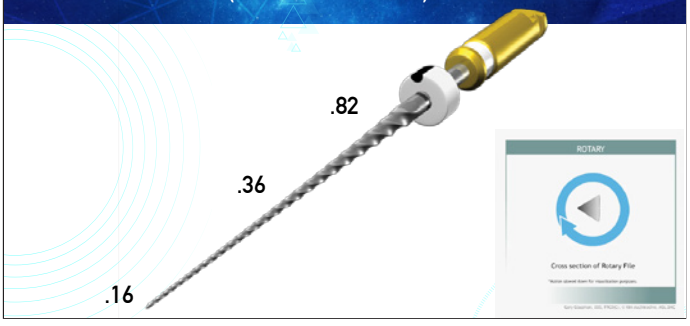
CONSTANT TAPER



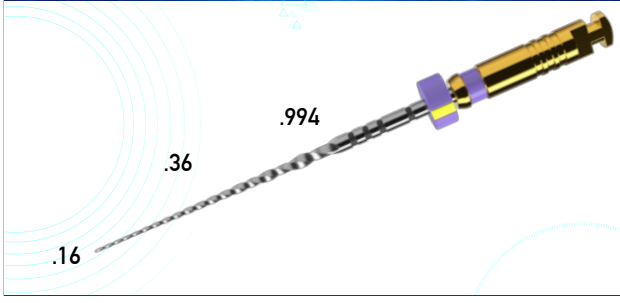
VARIABLE (PROGRESSIVE) TAPER



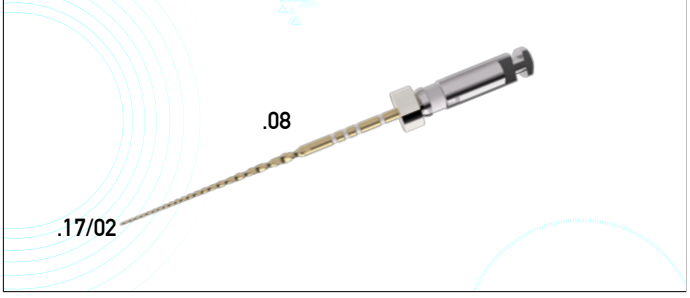
PRO GLIDER (PROGRESSIVE)



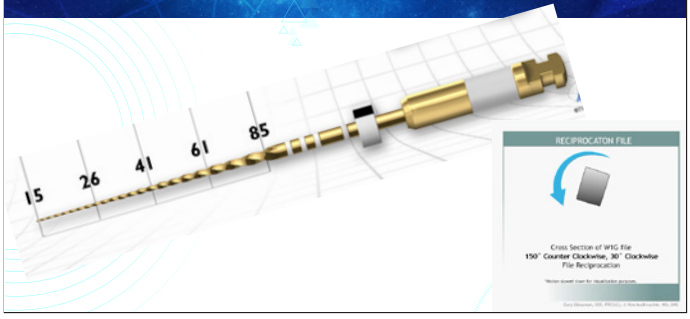
PTU SLIDER (PROGRESSIVE)



TRUNATOMY SLIDER (PROGRESSIVE)



WAVE ONE GOLD GLIDER-(PROGRESSIVE)

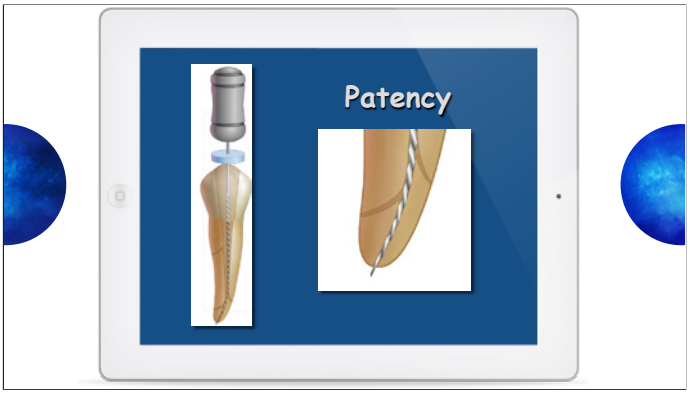


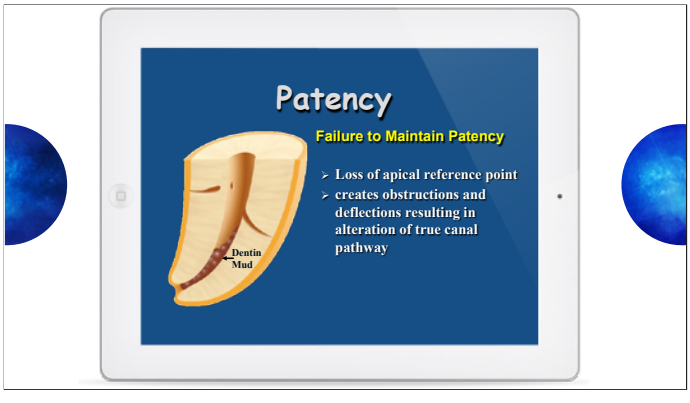
VARIABLE (DECREASING) TAPER

CONCEPT #2A AND #2B

APICAL PATENCY AND GLIDE PATH

APICAL PATENCY



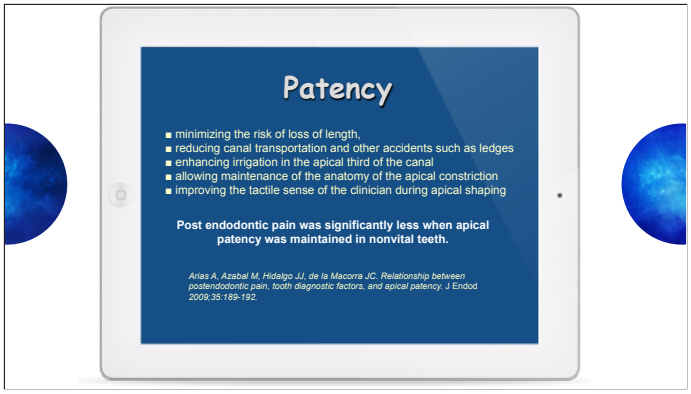


Patency

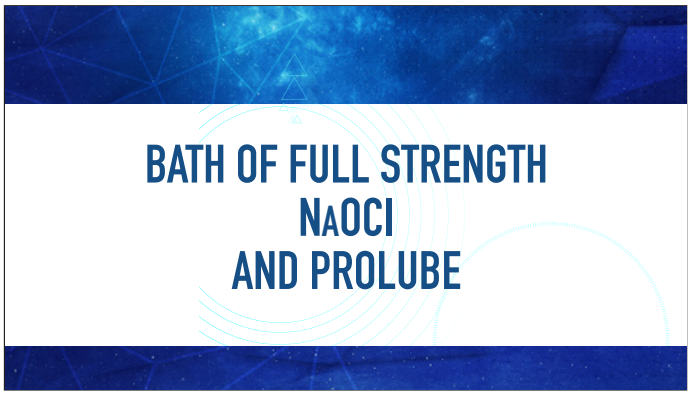
- minimizing the risk of loss of length,
- reducing canal transportation and other accidents such as ledges
- enhancing irrigation in the apical third of the canal
- allowing maintenance of the anatomy of the apical constriction
- improving the tactile sense of the clinician during apical shaping

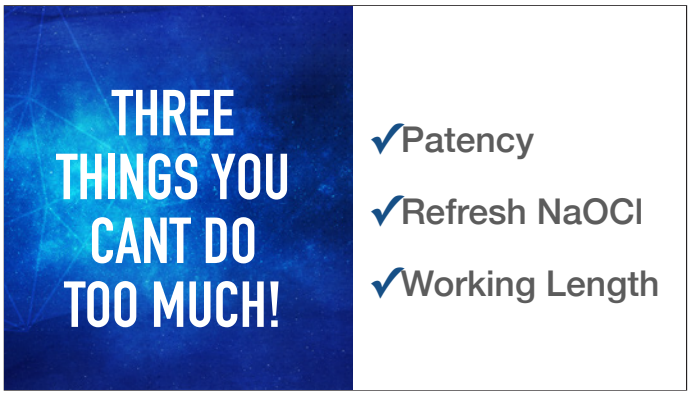
Post endodontic pain was significantly less when apical patency was maintained in nonvital teeth.

Arias A, Azabal M, Hidalgo JJ, de la Macorra JC. Relationship between postendodontic pain, tooth diagnostic factors, and apical patency. J Endod 2009;35:189-192.


Patency
minimizing the risk of loss of length,
reducing canal transportation and other accidents such as ledges
enhancing irrigation in the apical third of the canal
allowing maintenance of the anatomy of the apical constriction
improving the tactile sense of the clinician during apical shaping
Post endodontic pain was significantly less when apical patency was maintained in nonvital teeth.
Arias A, Azabal M, Hidalgo JJ, de la Macorra JC. Relationship between postendodontic pain, tooth diagnostic factors, and apical patency. J Endod 2009;35:189-192.

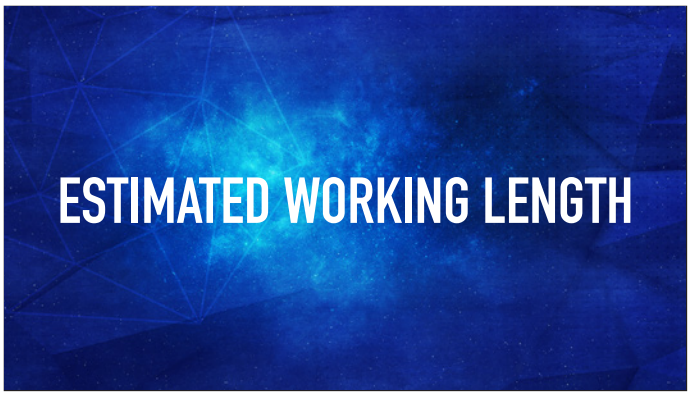

DURING INSTRUMENTATION. . .


BATH OF FULL STRENGTH
NaOCl
AND PROLUBE

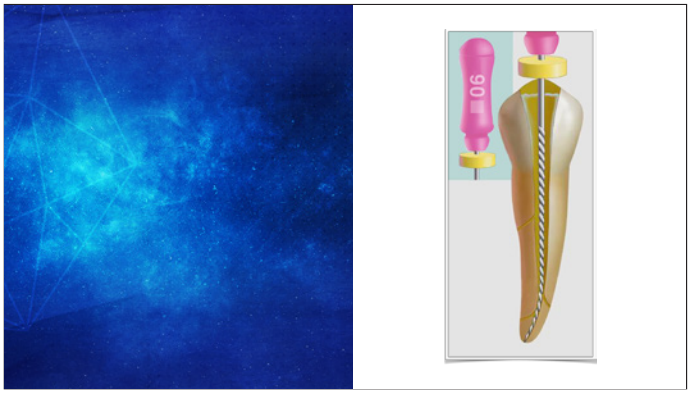

THREE
THINGS YOU
CANT DO
TOO MUCH!
✓Patency
✓Refresh NaOCl
✓Working Length

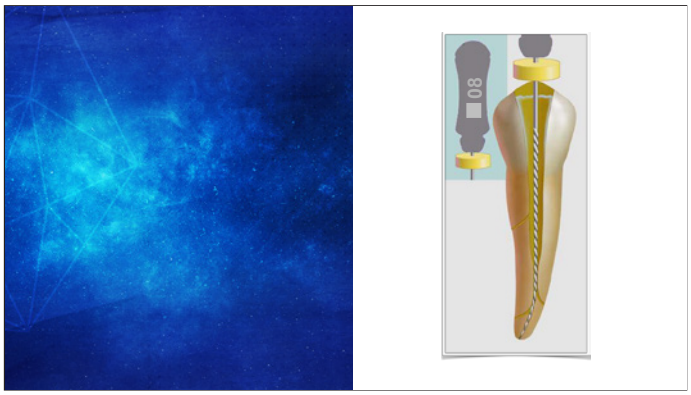

GLIDE PATH

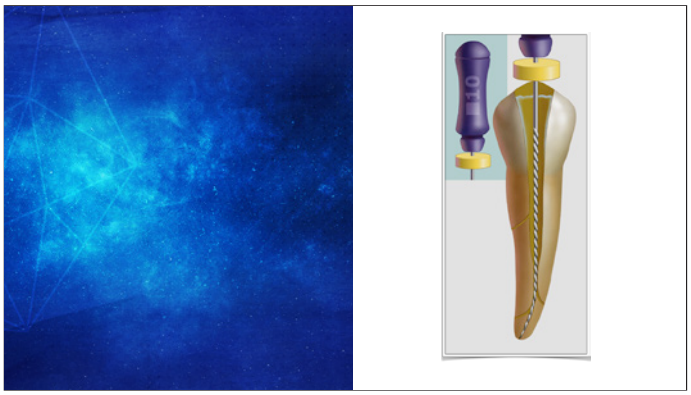

“ Own the Canal”
From Orifice to apex!!

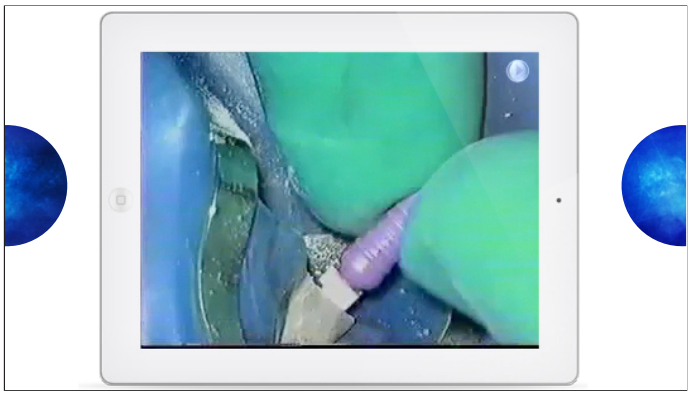

ESTIMATED WORKING LENGTH


"SCOUT"
THE CANAL

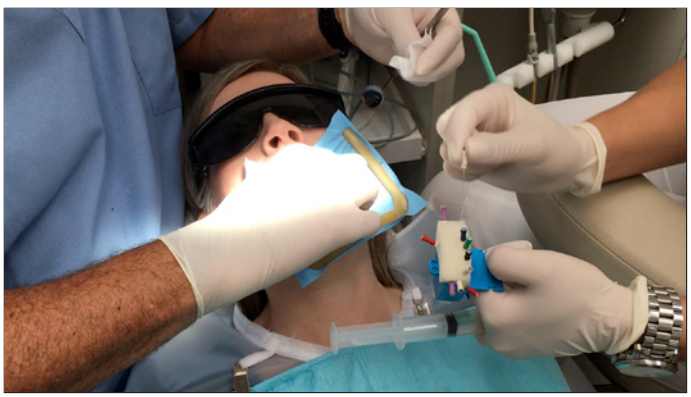

90


80

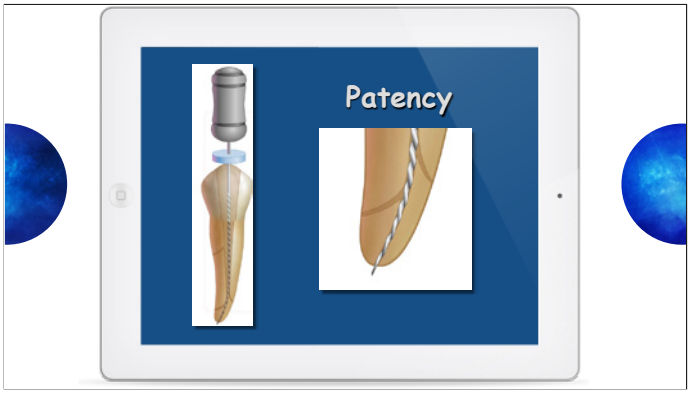

10

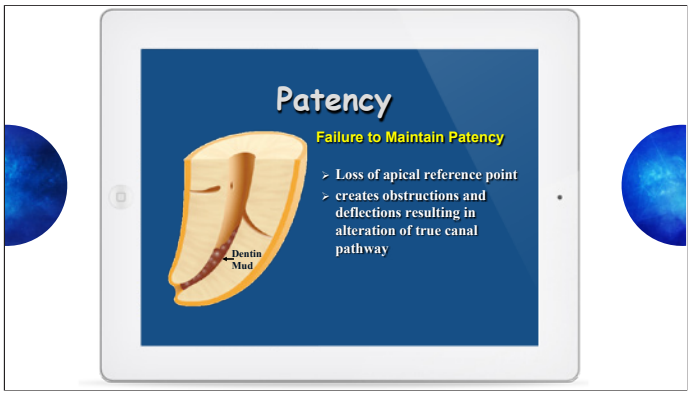



PASSING

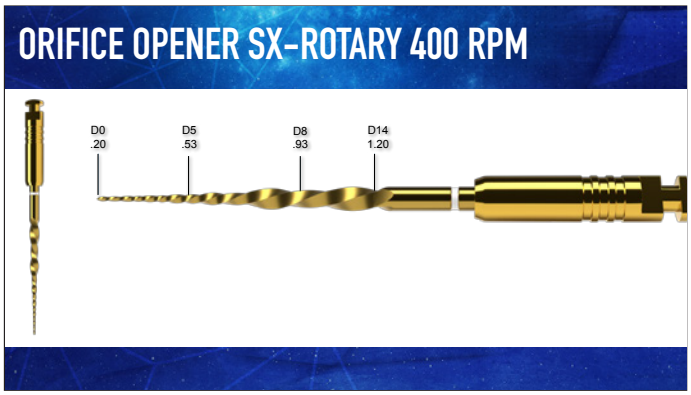


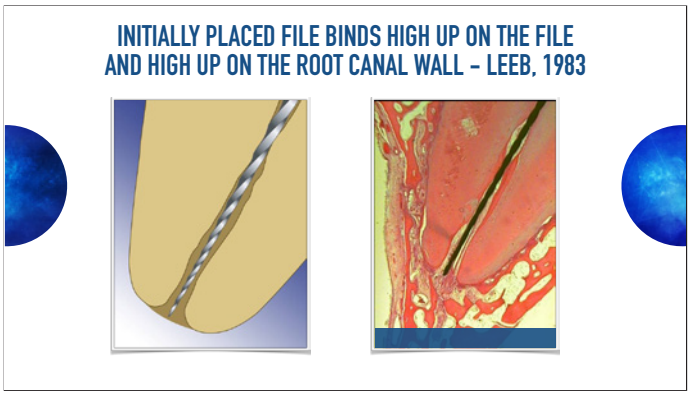

INFORMATION

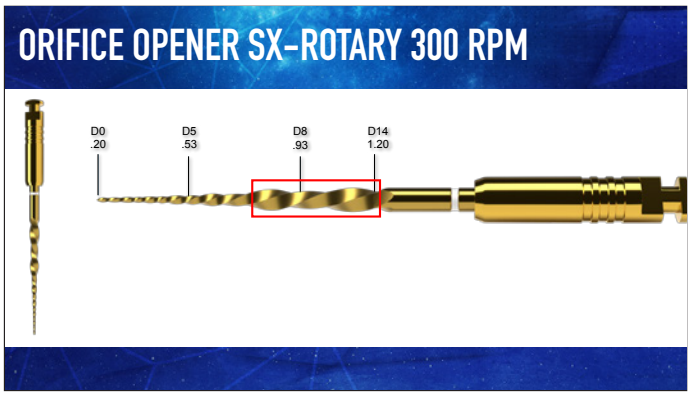

Patency


Patency
Failure to Maintain Patency
Loss of apical reference point
creates obstructions and deflections resulting in alteration of true canal pathway
Dentin Mud


BATH OF FULL STRENGTH
NaOCl
AND PROLUBE


ORIFICE OPENER SX-ROTARY 400 RPM
D0
.20
D5
.53
D8
.93
D14
1.20

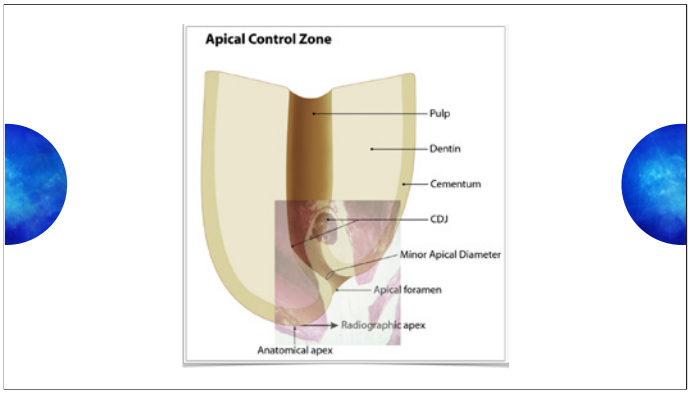

INITIALLY PLACED FILE BINDS HIGH UP ON THE FILE
AND HIGH UP ON THE ROOT CANAL WALL - LEEB, 1983

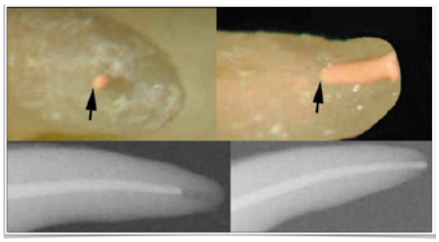

ORIFICE OPENER SX-ROTARY 300 RPM
D0
.20
D5
.53
D8
.93
D14
1.20


X-SMART PRO AND X-SMART PRO+ ROTARY

TRUE WORKING LENGTH

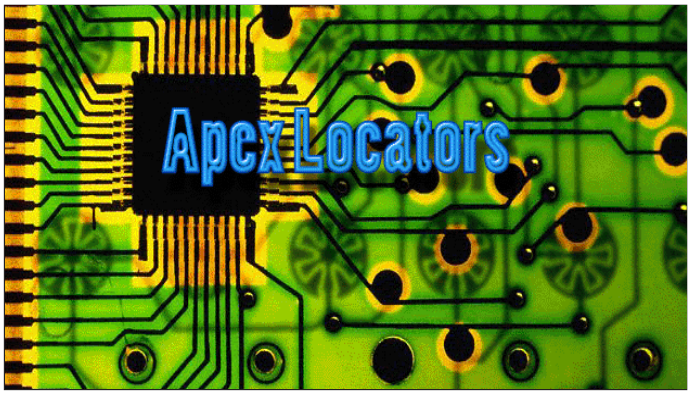
FINDING THE APICAL TERMINUS





FINDING THE APICAL CONSTRICTION

- ✓ Radiographs
- ✓ Electronic Apex Locators
- ✓ Tactile Feel
- ✓ Bleeding Point On A Paper Point
- ✓ Apical Negative Pressure



TIPS AND TRICKS TIME!

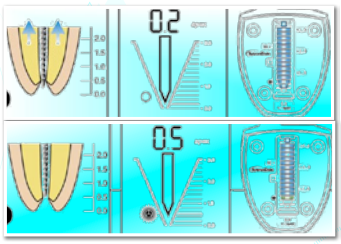
TROUBLESHOOTING TIPS

- ✓ "Back It Out"
- ✓ Remove The Conductant
- ✓ Insulate the file Prolube
- ✓ Use a Larger File
- ✓ Use a Longer File

X-SMART PRO APEX LOCATOR

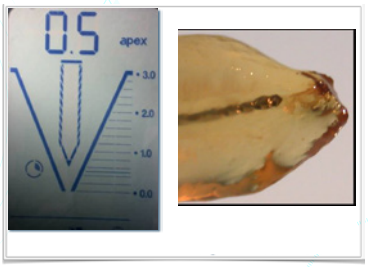
FINDING THE APICAL TERMINUS–DR. JORGE VERA

TROUBLE SHOOTING TIP #1
BACK THE FILE OUT

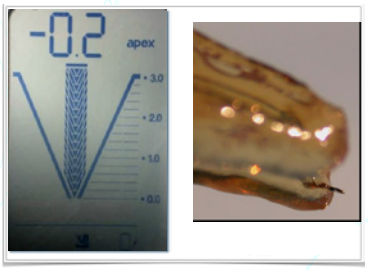


COURTESY DR. JORGE VERA, PUEBLA, MEXICO

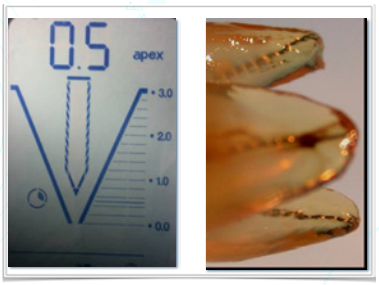
20 out of 24 were at 0.5 mm or further from the apical constriction



23 out of 23 were out!!!



22 out of 22 were at 0.5 mm or closer to the apical constriction BACK IT OUT!!!



X-SMART PRO APEX LOCATOR

FINDING THE APICAL TERMINUS–DR. JORGE VERA

TROUBLE SHOOTING TIP #1
BACK THE FILE OUT

TROUBLE SHOOTING TIP #2

REMOVE THE CONDUCTANT

TROUBLE SHOOTING TIP #3

INSULATE THE FILE

TROUBLE SHOOTING TIP #4

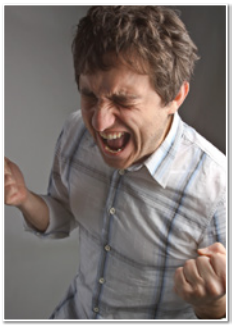
USE A LARGER FILE

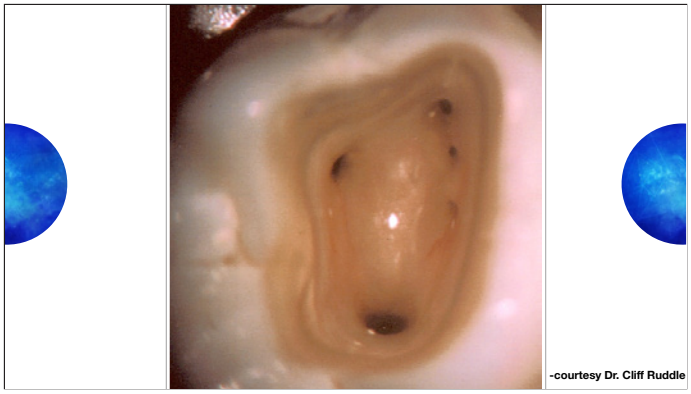
TROUBLE SHOOTING TIP #5

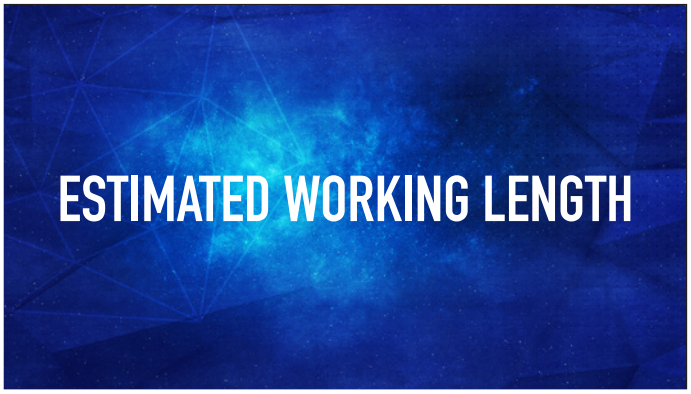
USE A LONGER FILE

GLIDE PATH REVIEW

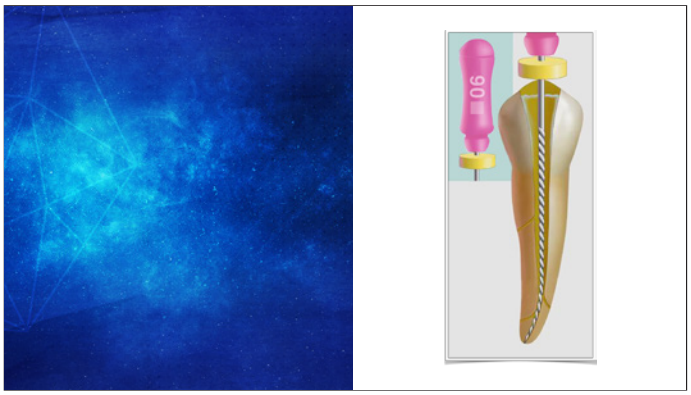
ACCESS CAVITY PREPARATION

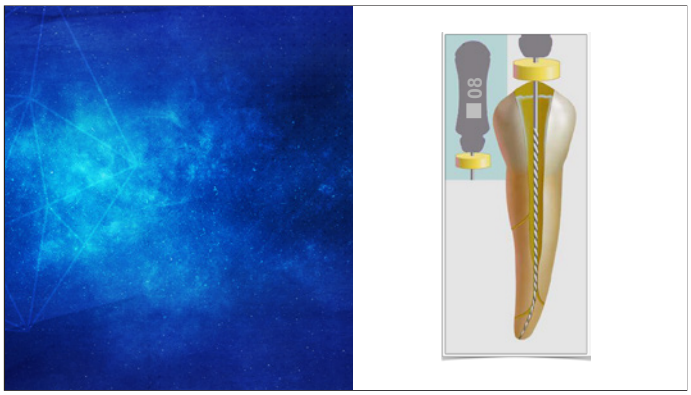


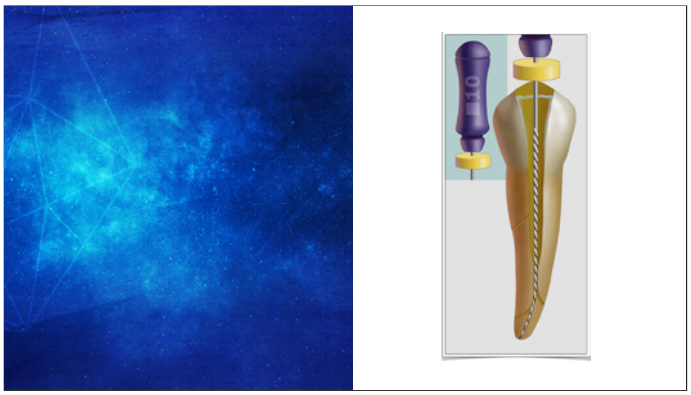

-courtesy Dr. Cliff Ruddle

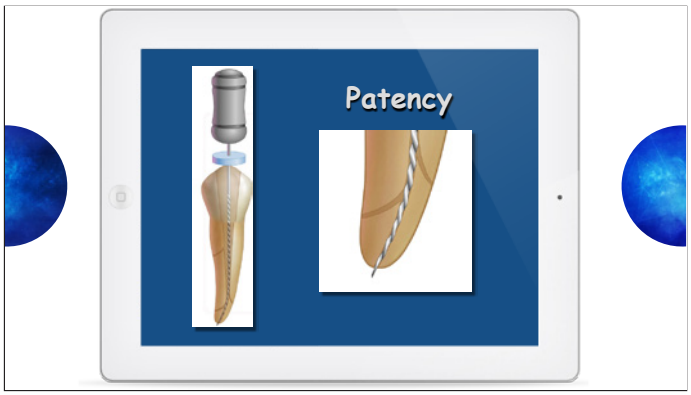

ESTIMATED WORKING LENGTH

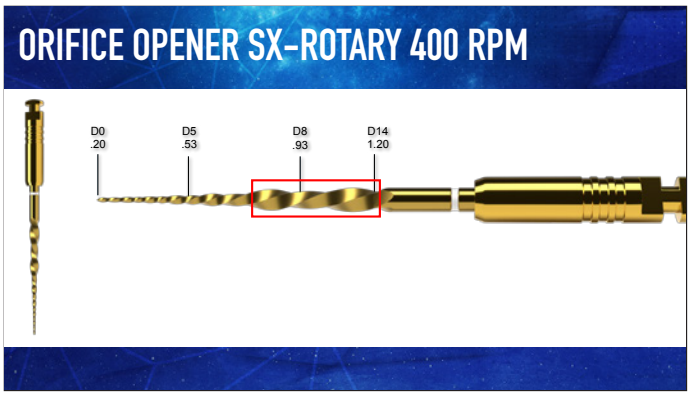

"SCOUT"
THE CANAL


06

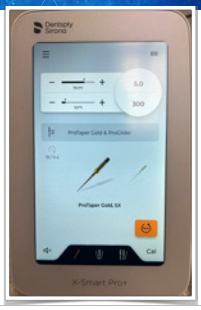

08


10


Patency

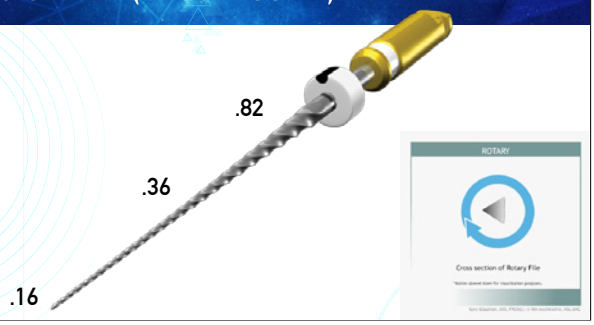

ORIFICE OPENER SX-ROTARY 400 RPM
D0
.20
D5
.53
D8
.93
D14
1.20

X-SMART PRO AND X-SMART PRO+ ROTARY

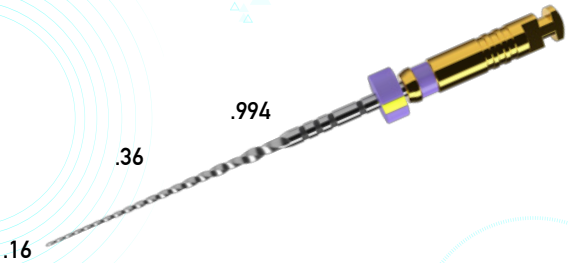


TRUE WORKING LENGTH

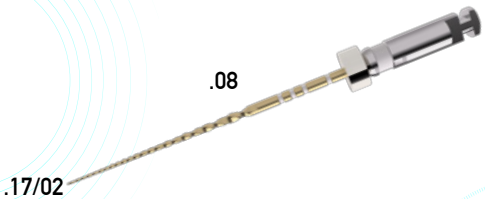
PRO GLIDER (PROGRESSIVE)



PTU SLIDER (PROGRESSIVE)

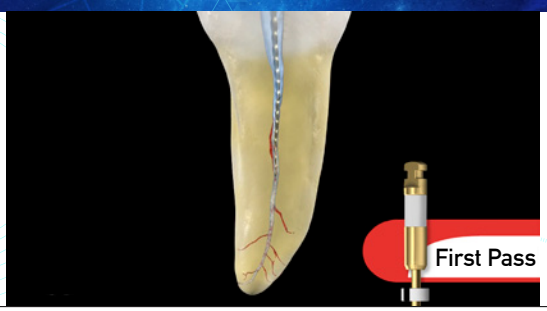


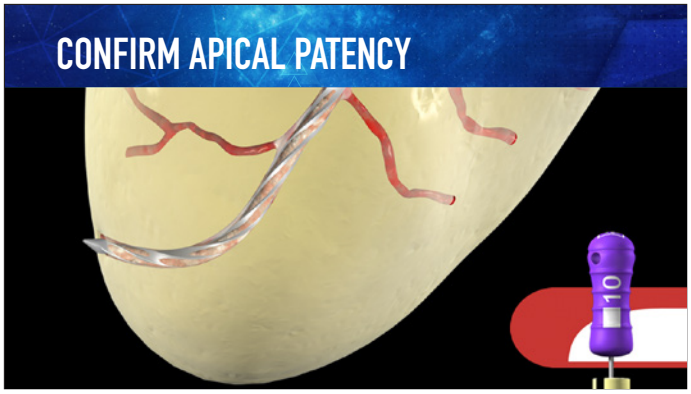
TRUNATOMY SLIDER (PROGRESSIVE)



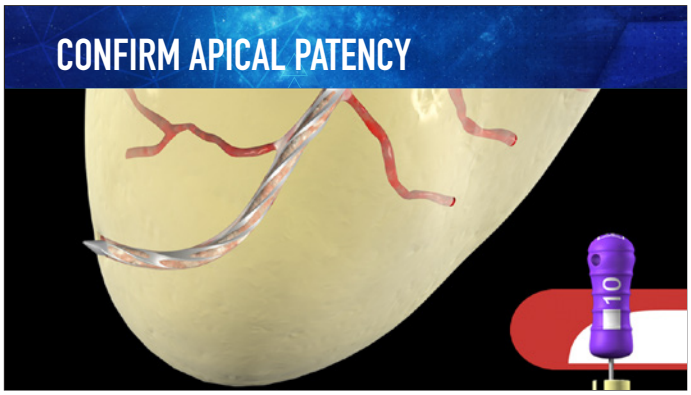
WAVE ONE GOLD GLIDER-(PROGRESSIVE)

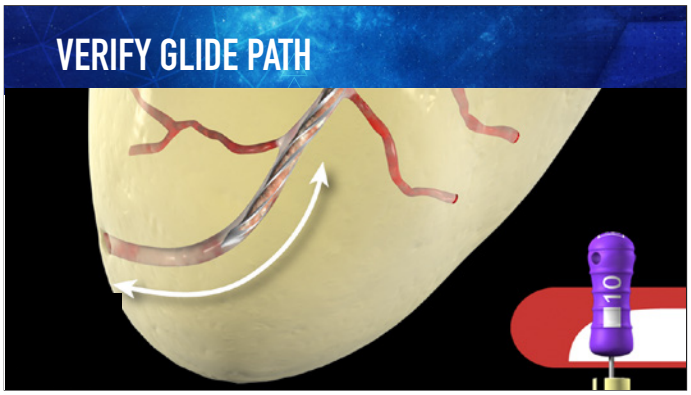
FIRST PASS WITH GLIDE PATH FILES




CONFIRM APICAL PATENCY
10


X PASS WITH GLIDE PATH FILES
X Pass


CONFIRM APICAL PATENCY
10


VERIFY GLIDE PATH
10


GLIDE PATH COMPLETED


GUIDELINES FOR USE
FOR ALL NITI SYSTEMS


CHECKLIST TO
PREVENT UNTWISTING,
BREAKAGE
AND PULLDOWN
GLIDE PATH #10 hand file fits LOOSE at working length
PATENCY!!!
FILL up pulp chamber brimful with NaOCL
LUBRICATE with ProLube
No more PRESSURE than that which would break a sharp lead pencil
Keep the file MOVING
DON'T RUSH

SELF EVALUATION

Endodontic Breakthroughs and Advancements, Essential Endodontic Concepts

True/False

1. Rotary instrumentation uses a continuous 360-degree motion, while reciprocation uses alternating back-and-forth movements.

2. Establishing and maintaining apical patency helps prevent debris accumulation and promotes more effective cleaning of the apical third.

3. Being “in control” of the root canal system involves tactile feedback, maintaining working length, and avoiding procedural errors such as ledging or transportation.

4. Apex locators are outdated tools and should not be relied on to determine working length in modern endodontics.

5. Reciprocating systems may reduce cyclic fatigue and the risk of instrument separation compared to continuous rotation systems.

6. Modern advancements like cone-beam CT (CBCT), bioceramic sealers, and enhanced irrigation protocols have significantly improved diagnostic accuracy and treatment outcomes in endodontics.

Answer Key: 1. T, 2. F, 3. T, 4. F, 5. T, 6. T

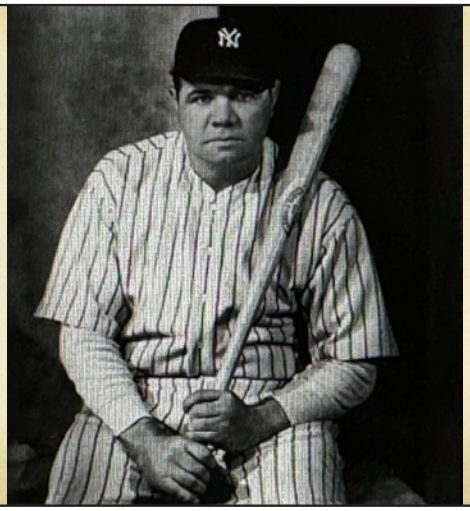
Oral Cancer Detection: A Clinical Approach to Early Diagnosis

Robert Convissar, DDS

SAVE A LIFE WITH A SIMPLE YET COMPLETE ORAL CANCER EXAM

What's the big deal with oral cancer?

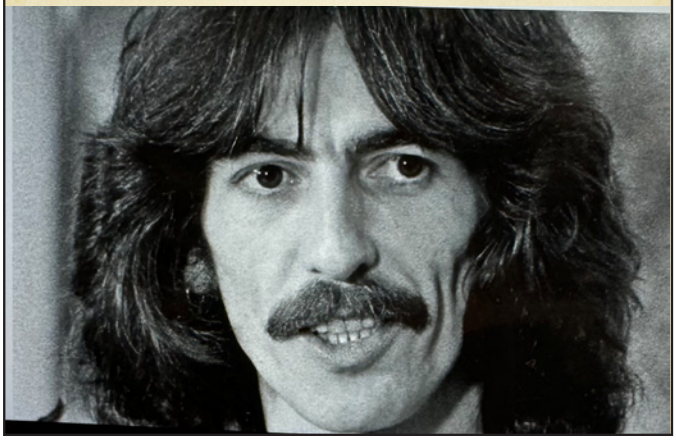
I don't know anyone that had it.
I have never seen a case of it.

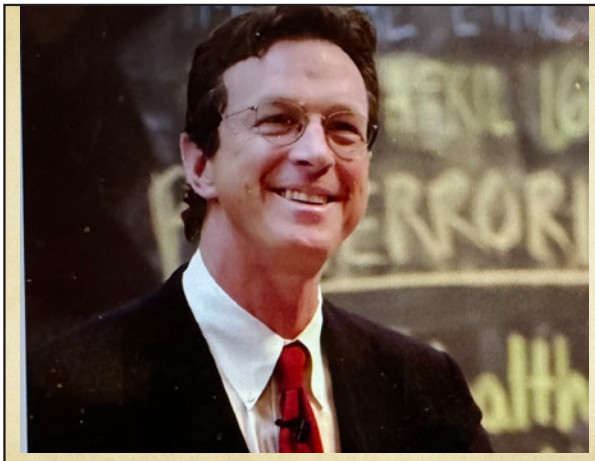


BABE RUTH

SIGMUND FREUD

GEORGE HARRISON





MICHAEL CRICHTON - JURASSIC PARK.....E.R...ETC

LARRY HAGMAN DALLAS....I DREAM OF JEANNIE

SHIRLEY CHUNG....STAGE 4 TONGUE CANCER

HUMPHREY BOGART

STANLEY TUCCI...STAGE 4 TONGUE CANCER
THE DEVIL WEARS PRADA....HUNGER GAMES....CONCLAVE....

President Grover Cleveland

Peter Tork of the monkees

Grant Atchaz (Chicago)

Roger Ebert

Erin Moran
(Richie's little sister on Happy Days)

Any Sports Fans Here?

- Tony Gwynn – HOF –San Diego Padres..54 y.o.
- Jim Kelly – HOF - QB Buffalo Bills
- Curt Flood – Father of BB Free Agency
- Brett Butler - LAD, NYM, ATL – survived
- Curt Schilling – BOS, AZ - survived

- Let's Talk About Jim Kelly For a Minute

JIM KELLY
He ***first revealed in June 2013*** that he had squamous cell carcinoma of the upper jawbone. He had surgery to remove the tumors, but then announced in ***March 2014 that the cancer had returned.*** Kelly then underwent ***weeks of chemotherapy and radiation*** treatment before doctors declared him cancer-free that September.

Kelly's second battle with cancer took a serious toll on him, as he underwent **12 biopsies in addition to the chemotherapy that eventually led to a MRSA infection in his facial bones**. He spent more than three years in remission until ***the oral cancer returned in March 2018***.

March 2018
Doctors are declaring Jim Kelly's surgery a success. The Hall of Fame Buffalo Bills QB underwent ***a 12-hour procedure on Wednesday to remove oral cancer and reconstruct Kelly's upper jaw.***
"We successfully removed Mr. Kelly's cancer from his upper jaw and lymph nodes from his neck," Dr. Mark Urken, head and neck surgeon at Mount Sinai West, said in a statement.

"We then reconstructed his upper jaw. Mr. Kelly is resting comfortably post-operatively."
Jill Kelly said in a statement her husband's recovery would be "extensive." Jim is expected to remain in the hospital for a few weeks

Excerpt from J.K. Interview

"And then it came back again a little over a year and a half ago. I was having issues on the OTHER side of my mouth, and my dentist said I needed to have a biopsy. So I did, and it had come back. I had a couple of options:

I could have a surgery where part of my skull was removed, or I could have part of my left fibula removed, broken into 4 places and then used to reconstruct my upper jaw. Then the doctors would take blood vessels from my arm and leg and use those to rebuild my whole upper jaw.

So I chose that option. I told people I know I've put my foot in my mouth a couple times, but I've never had my fibula in it"

Still, Kelly had to undergo another procedure in November 2018, one doctors hoped would be his last. With the MRI results coming back clean, that appears to be the case, although there is always a chance for the cancer to return later on in life.

2024 figures

58,450 cases

12,230 deaths

that's over 1.3 deaths every single hour in the usa

Today's Seminar Will Show You How To Discover It An An
EARLY STAGE!

BEFORE It Can Be Noticed With The Naked Eye

And Then ***What To Do*** Once Its Discovered!

And then how to get ***compensated*** for this vital procedure

What are the Risk Factors?
You Know What They Are:
Alcohol....YES
Tobacco...YES
WITH a ***30-fold Synergistic Increase!!!***

And Of Course.....***HPV***

THE GOOD NEWS

- GENERAL PRACTITIONERS PERFORM 60% OF ALL PERIO SURGERIES, 48% OF ALL BONY SURGICAL EXTRACTIONS AND 40% OF ALL APICOS AND ROOT AMPUTATIONS
- THESE ARE ALL MUCH MORE DIFFICULT THAN BIOPSIES!!!!

THE BAD NEWS

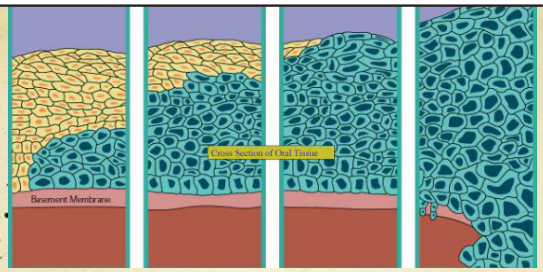
GENERAL PRACTITIONERS PERFORM ONLY 17% OF ALL BIOPSIES
WHY MAKE THE ORAL SURGEONS RICH?????

SHAFER:

THE ADVANTAGES OF A BIOPSY SO FAR OUTWEIGH ITS DISADVANTAGES OR POTENTIAL DANGERS THAT BIOPSY IS SELDOM CONTRAINDICATED

What if you don't detect it early?

- The average malpractice award against dentists for non-diagnosis (missing the diagnosis) was over 1 million dollars!!



Early Dysplasia | Moderate Dysplasia | Severe Dysplasia | OSCC

Dysplasia begins at the Basement Membrane – before you can see it, FV can

How does FV work?

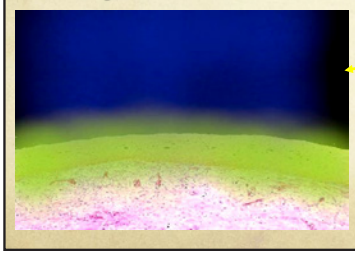
- Tissue Fluoresence
- Different tissues fluoresce at different rates, depending upon their biological activity
- Cancerous tissue is much more mitotically active than normal tissue, which accounts for a different fluorescence rate

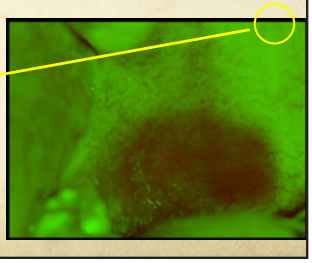
Normal (Healthy) Tissue Fluorescence

Light Causes Tissue to Fluoresce

Color is Characteristic of the Combination of the Tissue Structure and Fluorophores in the Tissue

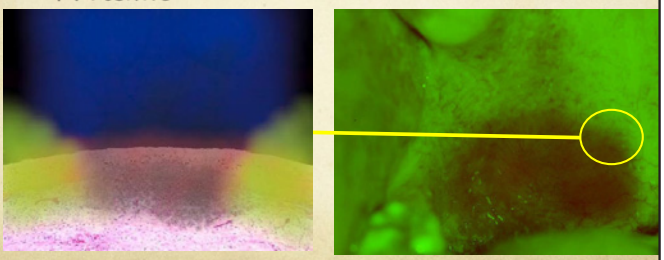
FV Negative

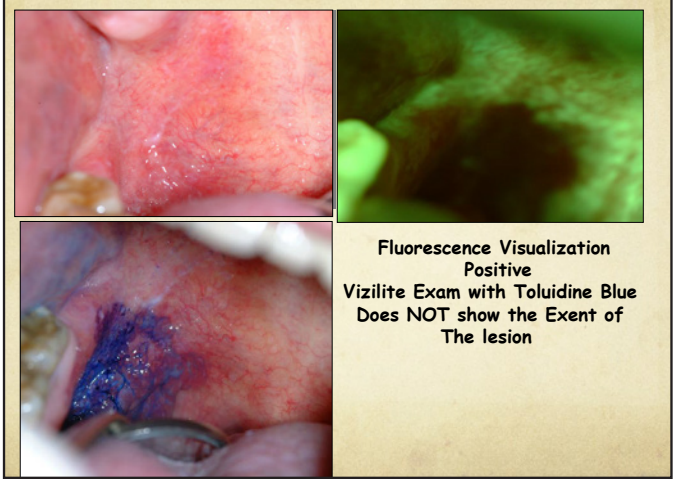




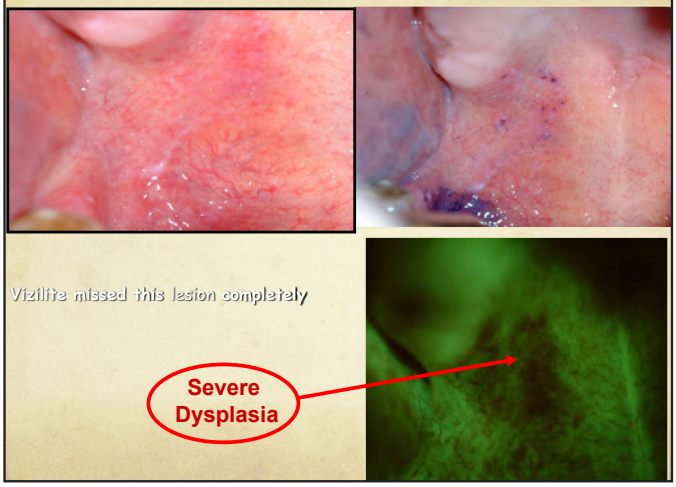
Abnormal Tissue Fluorescence

- Changes in Tissue Fluorescence Can Help Determine Areas Where Cellular/Structural Changes have Occurred
- FV Positive

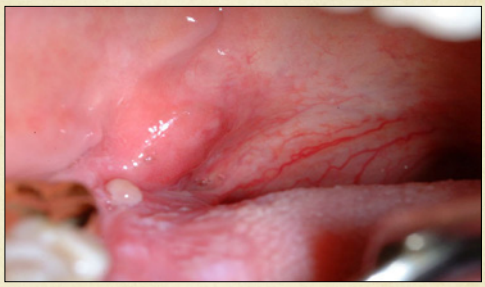


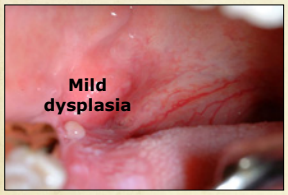


Fluorescence Visualization
Positive
Vizilite Exam with Toluidine Blue
Does NOT show the Exent of
The lesion

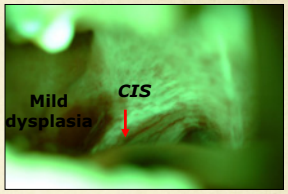


Just a little fibroma?

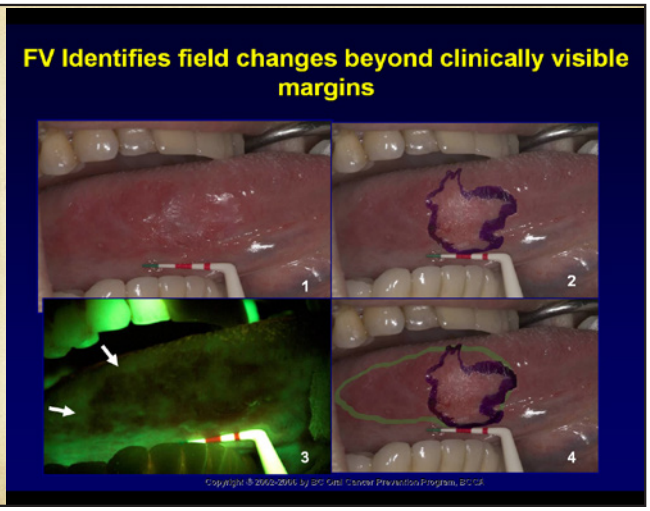


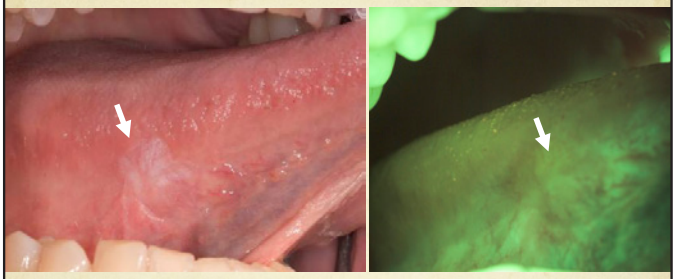


Clinical Appearance

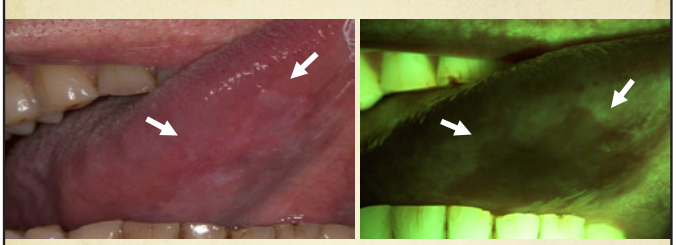


Fluorescence visualization: region of CIS now clearly visible
FV Positive



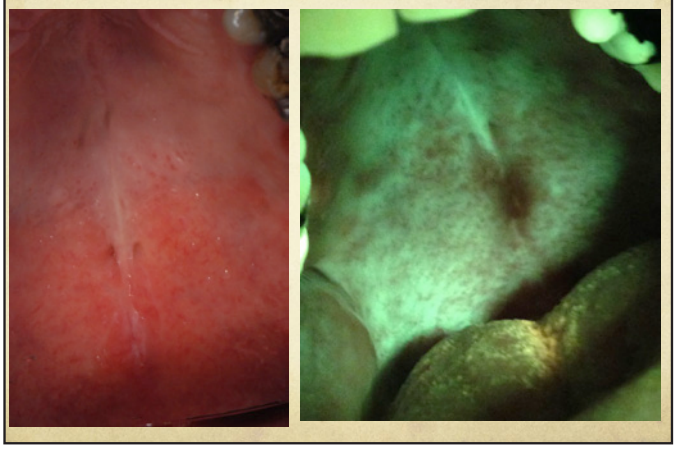


An Oral Lesion that Shows
No Change in Autofluorescence
FV Negative
Appears Apple Green

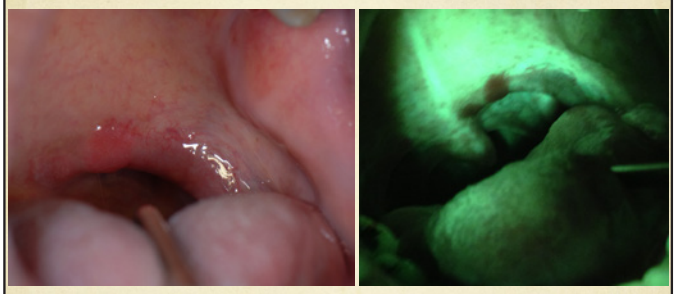


An Oral Lesion that is
FV Positive
Appears Dark in Color

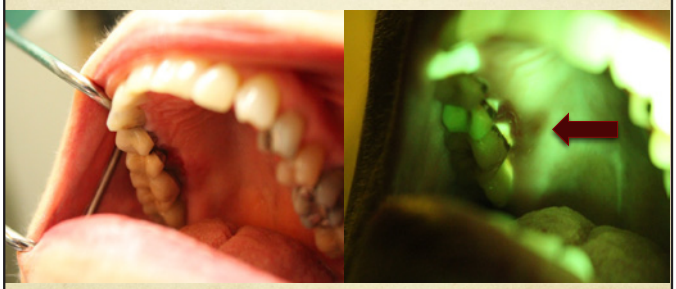
Moderate Dysplasia

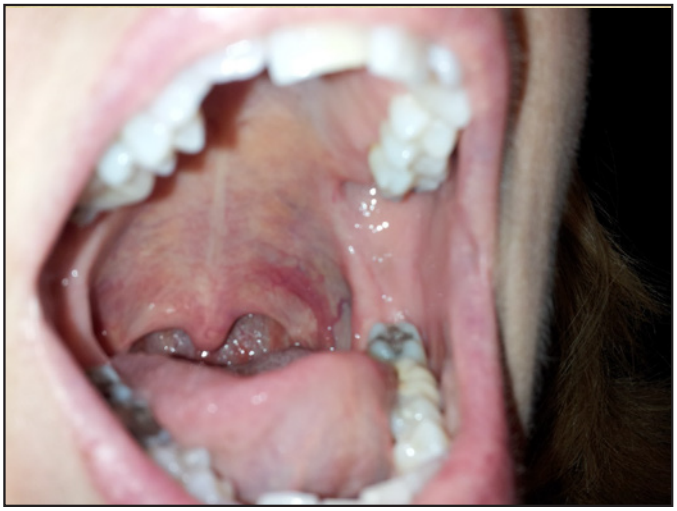


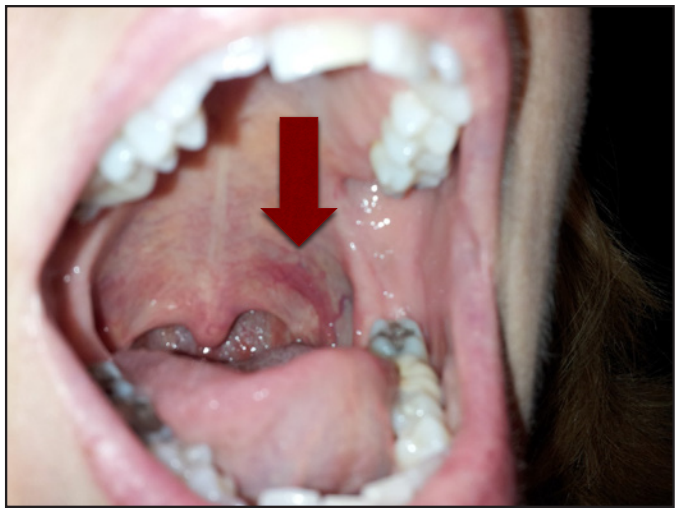
Dysplasia

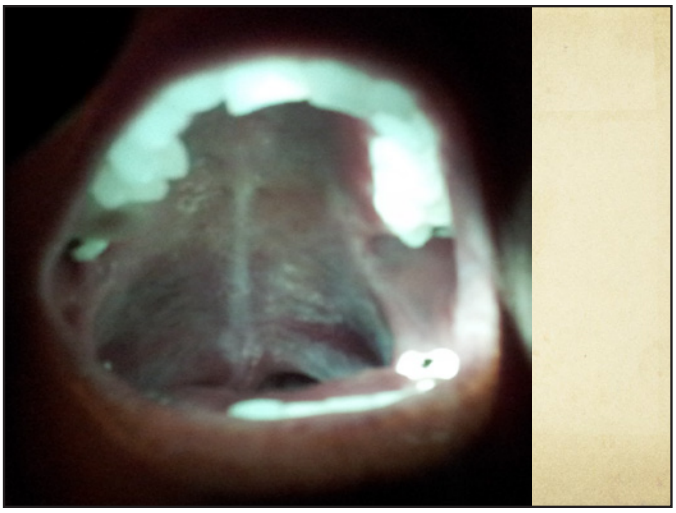


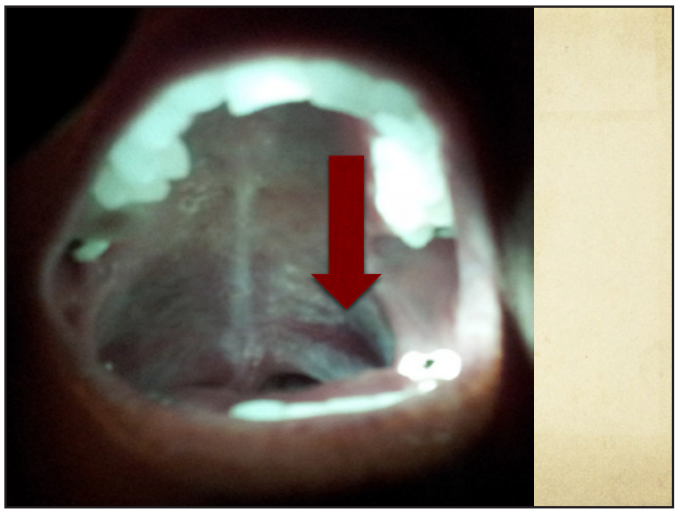
Invasive Squamous Cell Carcinoma











OK I'm interested…..but I have a closet full of can't miss gadgets….how do I make money on this one?

There is an ADA CDT code for this:

Big deal, there's an ADA code for it

Let's see my ROI figures

Number of Patients	1000	1000	1000
Fee	$50	$100	$150
Cost Of Unit	$1200	$1200	$1200
Disposable Cost Per Patient	0	0	0
One Year Profit	$50,000 - $1200 $48,800	$100,000-$1200 $98.800	$150,000-$1200 $148,800
Two Year Profit	$98,800	$198,000	$298,800

Is 1000/Year Reasonable?

- Work a 4 Day Week
- 6 Patients/Day Have a FV Exam
- That's 24 Patients/Week
- That's 96 Patients/Month
- If You Work Only 10 Months/Year – Take 2 Full Months of Vacation/Year, That's 960 Exams!!!

My Experience With The ADA Code In NYC

Guardian
MetLife
Aetna
Cigna
Delta Dental
BC/Anthem

There are PLENTY of VF devices on the market:

Velscope
Oral ID
Dentlight
etc. etc.

Gordon Christensen's Clinical Report
Volume 5 Issue 7 July 2012

CR Conclusions: Fluoresence is a viable adjunct to ***mandatory***...oral cancer screening because it reveals abnormal cells ***before they may be noticed visually***

It promotes thorough examination and is faster and easier than oral dyes or ...brush biopsies. Cancer screening ***must*** be a routine part of oral examinations and clinicians should inform their patients of this valuable service
WHO PERFORMS THE EXAM??

Most of the time, it's the Hygienist
In some offices, the doc takes the responsibility

Up to you

Do These Things Actually Work?

IF Insurance Companies Are Paying For It, It Has to Have Merit.

How Many Dental Insurance Companies Are You Aware Of That Pay For Procedures That Are Useless??

How Do We Market OCS?

Simple!

Let Michael Douglas Help You!!

Verbal Skills
Talk about:
Mammos/Sonos
Pap Smears/HPV
Colonoscopies/Occult Blood
PSA
Helical CT
JAMA Article....Other Literature

Mrs. Jones, I Assume You Keep Up With Your Medical Exams – I Assume You Go For You Pap Tests and Your Breast Cancer Mammograms – The Purpose Of These Exams Is To Catch Things EARLY – When The Cure Rate Is Very High

Did You Know That The Virus That Causes Cervical Cancer ALSO Causes Oral Cancer?

It's Called HPV

What Time Did You Get Up This Morning?
Do You Know How Many People In The USA DIED Of Oral Cancer Since You Got Up?

I Have A Device That Uses A Special Filtered Light That Has The Potential To Spot Oral Cancer Early BEFORE It Becomes More Deadly

It Costs X Dollars
Are You Ok For Me To Proceed?

Mr. Smith, I Assume That You Have:
1) Had Your PSA Checked to Catch Prostate Cancer Early.
2) Had Your Colonoscopy To Catch Colon Cancer Early
3) Had That Helical CT Scan To Catch Lung Cancer Early

The Earlier These Diseases Are Caught, The Higher The Cure Rate

What Time Did You Get Up This Morning?
Do You Know How Many People In The USA DIED Of Oral Cancer Since You Got Up?

I Have A Device That Uses A Special Filtered Light That Has The Potential To Spot Oral Cancer Early BEFORE It Becomes More Deadly

It Costs X Dollars
Are You Ok For Me To Proceed?

Clinical Cancer Res. 2006:12 (22), Nov. 2006

- Results of 122 biopsies shows that direct f.v. can identify SUBCLINICAL hi-risk fields with cancerous and precancerous changes

Visual Enhancement System for Detection of Oral Cavity Neoplasia Based on Autofluoresence

- Head and Neck March 2004
- Sensitivity and specificity were 91% and 86%
- Sensitivity and Specificity with normal illumination were 75% and 43%

More Literature

- Simple Device for the Direct Visualization of Oral Cavity Tissue Fluoresence
- J. Biomed. Optics March/April 2006
- Using histology as the gold standard for 50 sites, the device achieved a **sensitivity of 98%** and a **specificity of 100%** when discriminating normal from hi-risk oral premalignant lesions

Critical Point:
JAMA
January 2016
Fluouresence-Visualization-Guided Surgery for Early Stage Oral Cancer

Conclusion:
The use of FV...significantly reduced the rate of local recurrence...in oral cancer

How About When The Local Church/Boy Scout Troop/Kiwanis Club/Synagogue/High School Marching Band… Is Doing Something To Raise Money – You Volunteer To Do OCS For Free With Your Hi-Tech Device

Great Way To Get New Patients!
(Gee…..My Dentist Doesn't Do That!)

Send Out A Press Release To The Local:
Newspaper
Pennysaver
etc.

Talk About How OC is the 6th Leading Cause of Death in Men in the USA

Talk About How There Are More OC Cases/Year Than Cervical Cancer
OR
Ovarian Cancer
OR
Pancreatic Cancer

AND THESE DISEASES SEEM TO GET MUCH MORE PUBLICITY THAN O/OPC

Talk About The Fact That:

MORE PEOPLE DIE FROM ORAL CANCER THAN FROM CERVICAL CANCER OR MELANOMA

More Than ONE PERSON EVERY HOUR OF EVERY DAY DIES OF ORAL CANCER IN USA

WHY LITERATURE FROM BACK IN 2006?

THAT'S HOW LONG THESE DEVICES HAVE BEEN AROUND

THEY HAVE A ***PROVEN*** TRACK RECORD OF SUCCESS

More Marketing Tips

Contact The Oral Cancer Foundation

OralCancerFoundation.org

April is OC Awareness Month
They Can Help You With Marketing
Exams!!!

Where Do You Practice?
Suburban? Rural?
I Bet There Are Local Newspapers That Would Love an Article From The Local Dentist About OPC/ocs.

Urban Practice?
There Are Local Neighborhood Newspapers
and
Pennysavers

Let's talk reimbursement

A Simple 2 Minute O.C. Exam Yields:
1) Payment For The Exam
2) Payment For The Biopsy

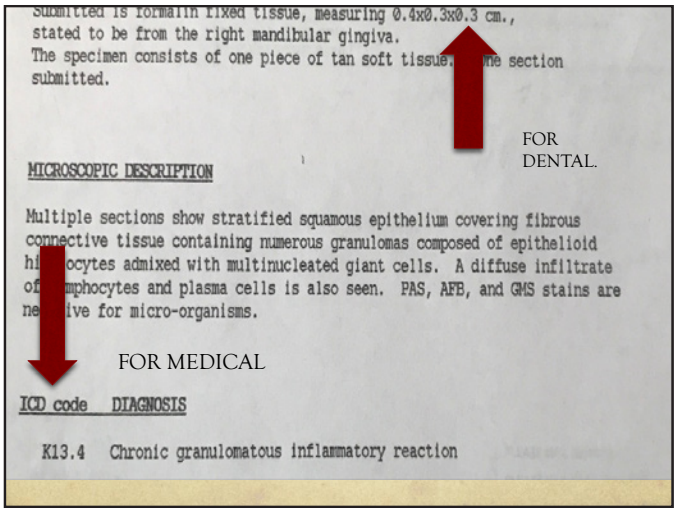
(Which You Should Be Performing!)

INSURANCE CODES

- FOR ***EXCISIONAL*** BIOPSIES
- FOR ***INCISIONAL*** BIOPSIES
- FOR ***DIFFERENT SIZE*** LESIONS
- ALL ADA ORAL SURGERY CODES....

How About Medical Insurance Sure!!

There Are Many References To Change The ADA CDT Codes To Medical ICD/CPT Codes and Modifiers



Important!!!

- Does FV Detect Cancer?
- NO!!!!!
- It Detects ABNORMAL TISSUE!!!!!

These FV Devices Help You Perform Your Exam
THEY DO NOT GIVE A DIAGNOSIS!!!

That's What A Biopsy is For!!!
The Biopsy Is *The Gold Standard* for Diagnosis

Once Again, VERBAL SKILLS are Important!

So Mr. Jones.....the OCS/FV found something that I believe merits further attention. Its could be nothing whatsoever, or it could be a warning sign that we should investigate further. More than 90% of what GPs find is benign – nothing to worry about

So Lets Get You Back Into The Office In 2 Weeks and See What's Going On

And Both ***You AND Your FRONT DESK*** make CERTAIN the patient keeps the follow-up appointment

Its still there 2 weeks later....what to do?

You then walk the patient to the front desk....call the OMS....and don't let the patient leave the office until the appt. is made...and follow up with the patient that they actually kept the appointment...people tend to put their heads in the sand and DENY

OR
You Do The Biopsy Yourself!!

Do You Know Your ABC's?

The ABCs of Melanoma
American Cancer Society
Asymmetry
Border
Color
Diameter
Evolution

*A*symmetry – One Half of the Lesion Does Not Look Like the Other Half

*B*order – Irregular/Blends In

*C*olor – Not Uniform Throughout

*D*iameter – Over 6 mm – Size Of A Pencil Eraser

*E*volution – Change in Size or Shape or Color

Look For Differences in:
Color
Contour
Consistency
Function

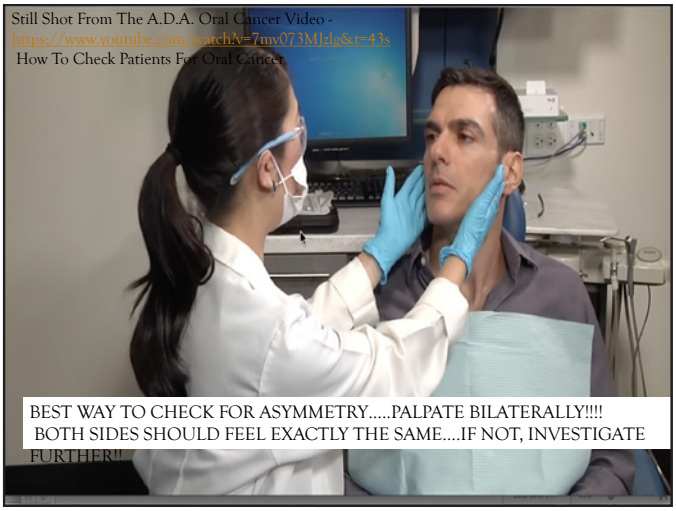
What Do I Need?
1) A Piece of Gauze
2) A Mouth Mirror

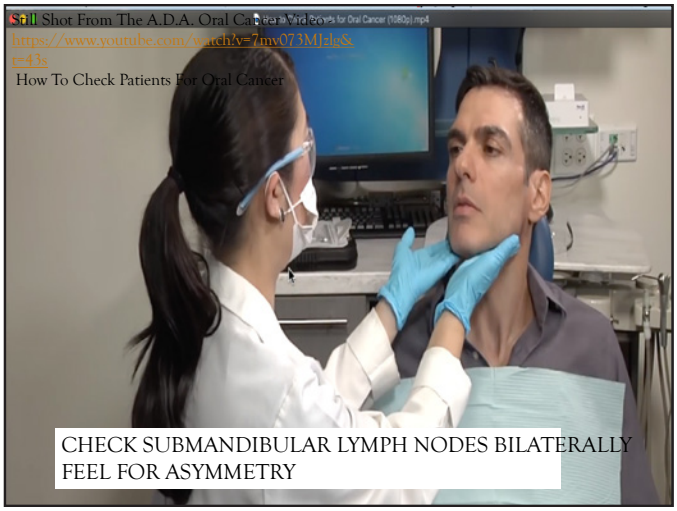
FV Device

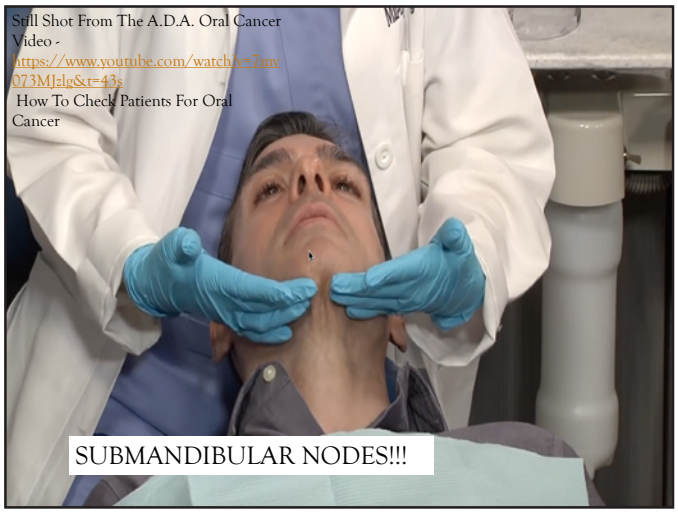
OK....Lets Start The Exam....

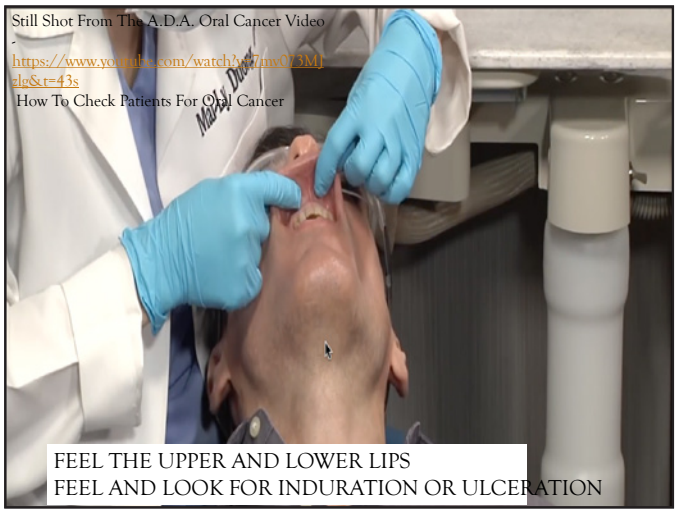
Extraoral:
Look for Symmetry
Anything Asymmetric Needs To Be Investigated!

ABCDE!!


Still Shot From The A.D.A. Oral Cancer Video -
https://www.youtube.com/watch?v=7mv073MJzlg&t=43s
How To Check Patients For Oral Cancer
BEST WAY TO CHECK FOR ASYMMETRY.....PALPATE BILATERALLY!!!!
BOTH SIDES SHOULD FEEL EXACTLY THE SAME....IF NOT, INVESTIGATE FURTHER!!

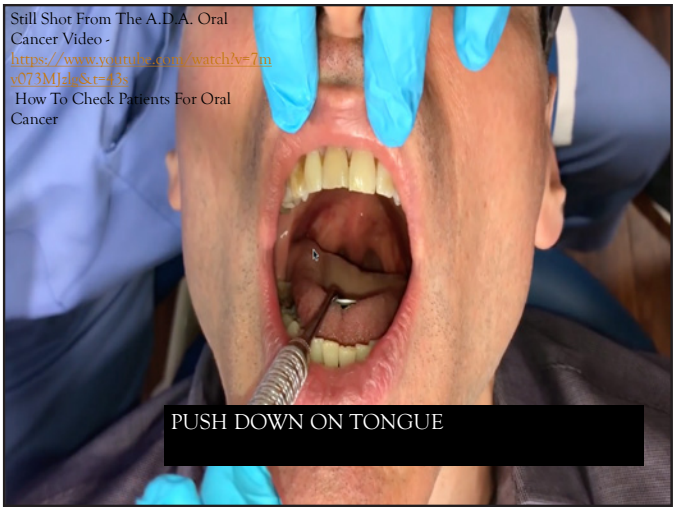

Still Shot From The A.D.A. Oral Cancer Video -
https://www.youtube.com/watch?v=7mv073MJzlg&t=43s
How To Check Patients For Oral Cancer
CHECK SUBMANDIBULAR LYMPH NODES BILATERALLY
FEEL FOR ASYMMETRY


Still Shot From The A.D.A. Oral Cancer Video -
https://www.youtube.com/watch?v=7mv073MJzlg&t=43s
How To Check Patients For Oral Cancer
SUBMANDIBULAR NODES!!!


Still Shot From The A.D.A. Oral Cancer Video -
https://www.youtube.com/watch?v=7mv073MJzlg&t=43s
How To Check Patients For Oral Cancer
FEEL THE UPPER AND LOWER LIPS
FEEL AND LOOK FOR INDURATION OR ULCERATION

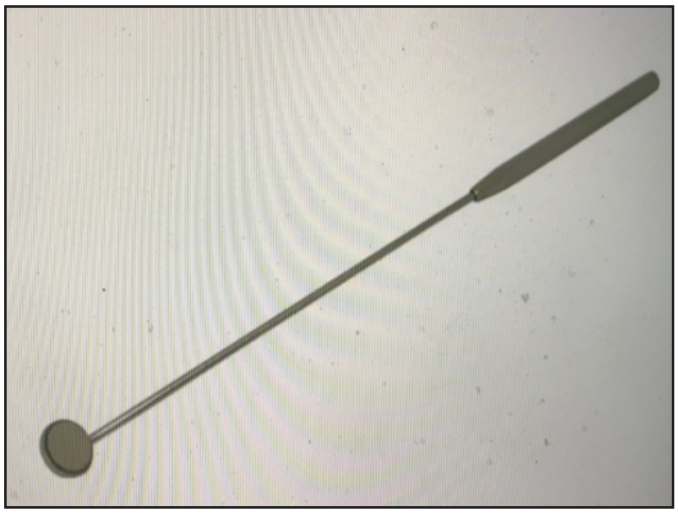

Still Shot From The A.D.A. Oral Cancer Video -
https://www.youtube.com/watch?v=7mv073MJzlg&t=43s
How To Check Patients For Oral Cancer
BIMANUAL PALPATION – ULCERATED? INDURATED?

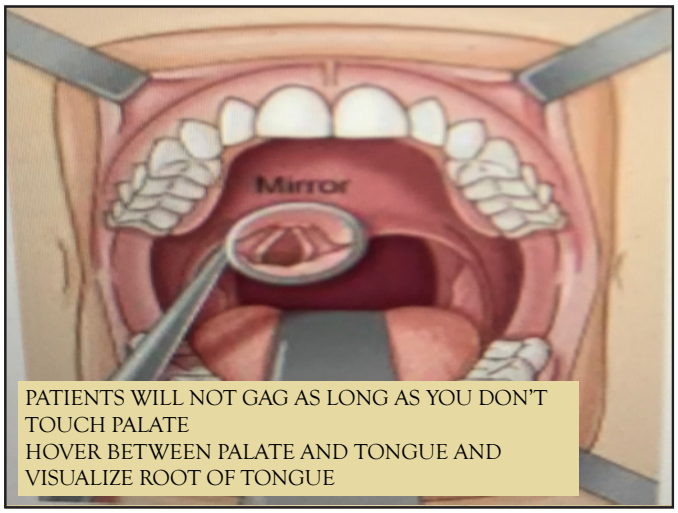

Still Shot From The A.D.A. Oral Cancer Video -
https://www.youtube.com/watch?v=7mv073MJzlg&t=43s
How To Check Patients For Oral Cancer
PLACE MIRROR ON TONGUE AND LOOK ALL AROUND

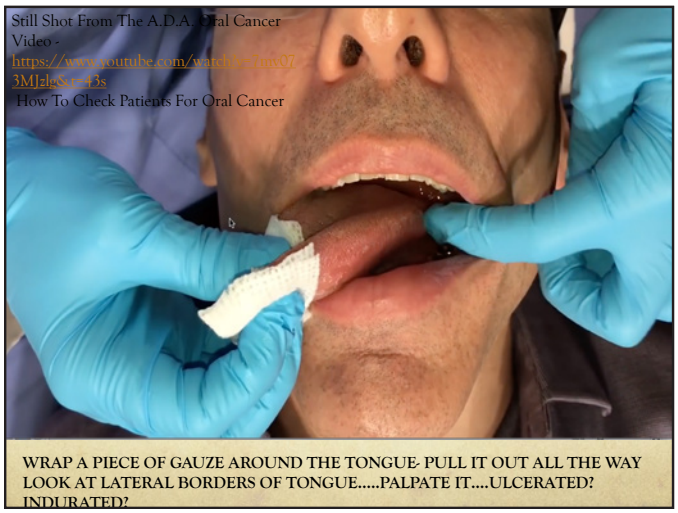


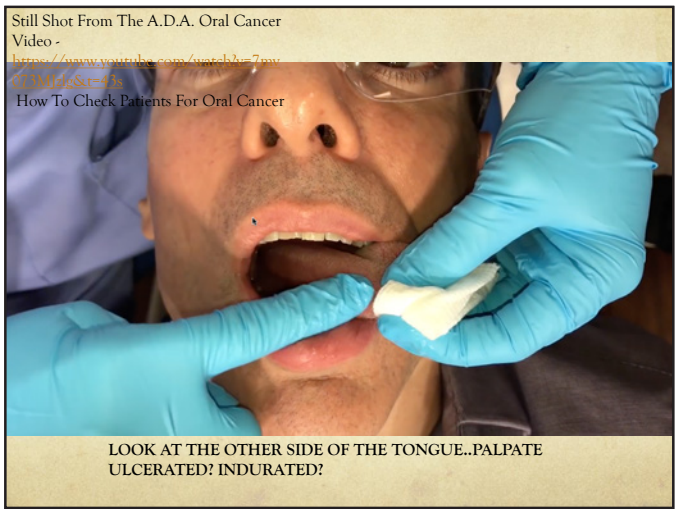
Even Better Idea....
Splurge for $10 And Buy A Laryngeal Mirror From Your Dental Supply Company

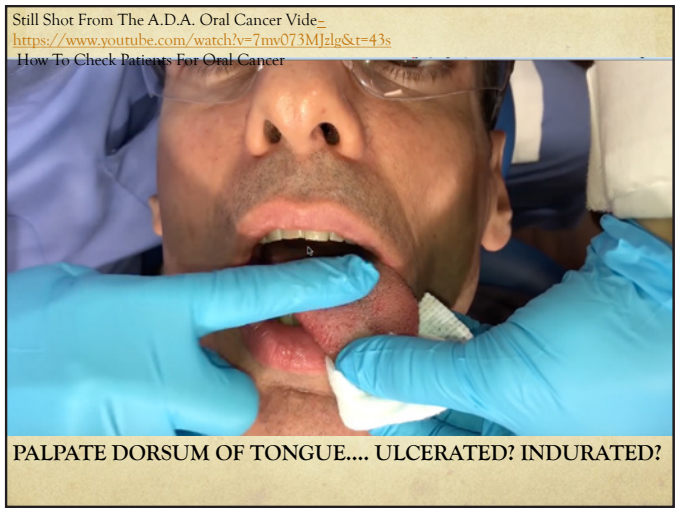
Its Just Your Regular Mirror With An **EXTRA LONG** Handle

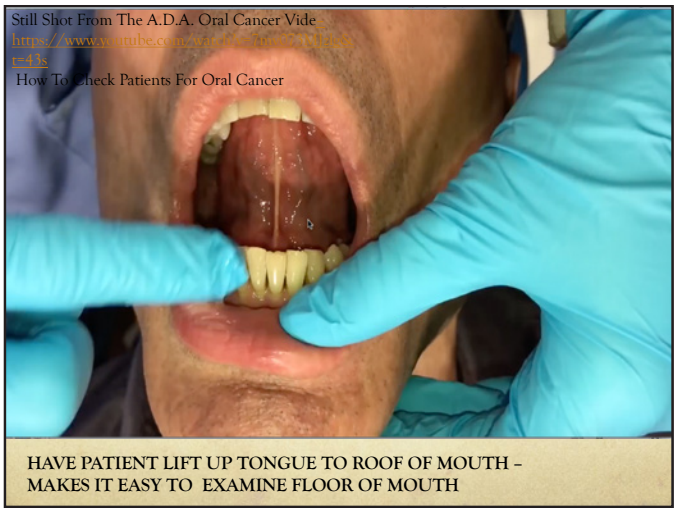


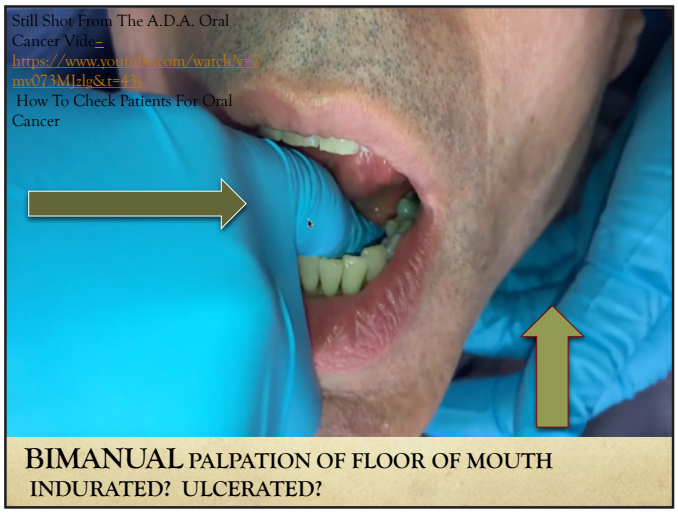












Why So Much Time Spent On The Tongue?

IT IS THE # 1 SITE OF O/OP CANCER!

TONGUE - 40%
FLOOR OF MOUTH - 30%

Oh My Goodness...
I Found Something....
WHAT DO I DO???

I Don't Want to Get Involved With
Biopsies....I Could Be Held Liable If I Do

It Wrong Or Miss Something!

NOPE!!

4 Possible Outcomes to A Biopsy

1) Benign And You Got It All

2) Benign And You Didn't Get It All

3) Malignant And You Got It All

4) Malignant And You Didn't Get it All

Benign And You Got It All

Benign And You Didn't Get It All

Malignant And You Got It All

Malignant And You Didn't Get It All

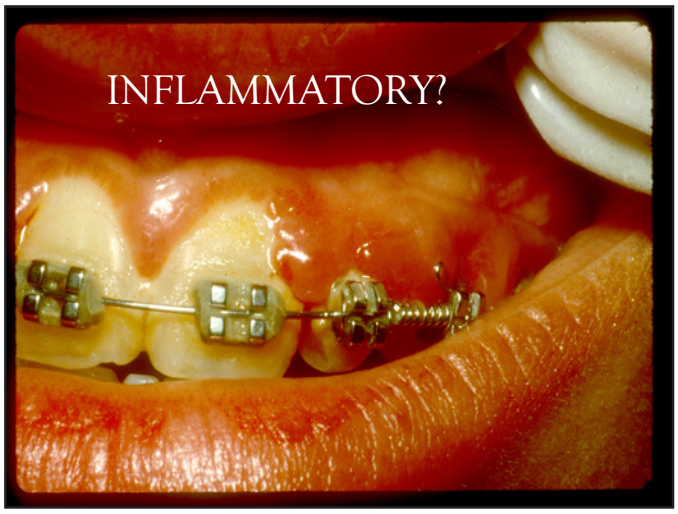
Ok - Let's biopsy!!

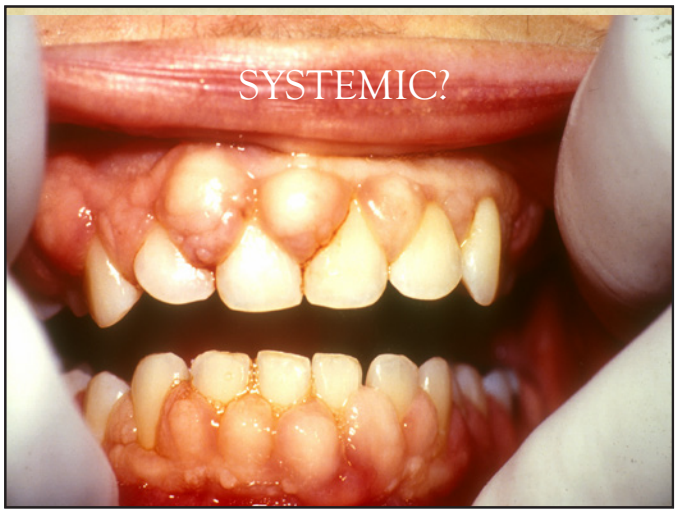
Step 1: Patient Assessment
Step 2: Lesion Assessment
Step 3: Tray Set-Up
Step 4: Technique
Step 5: Post-Op

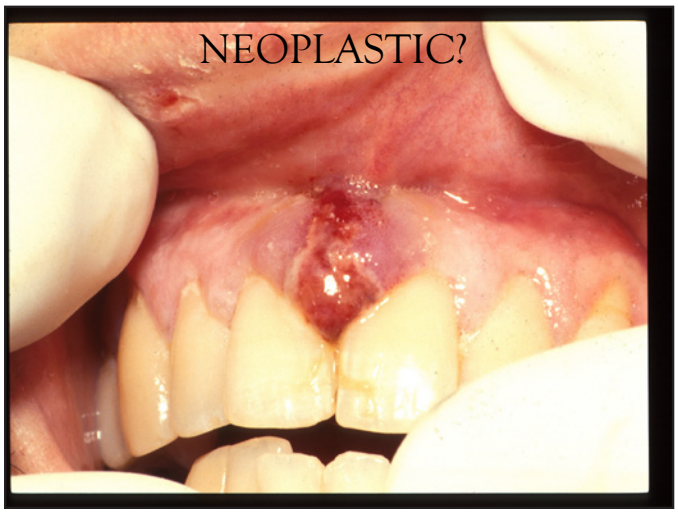
That's It!
5 Simple Steps

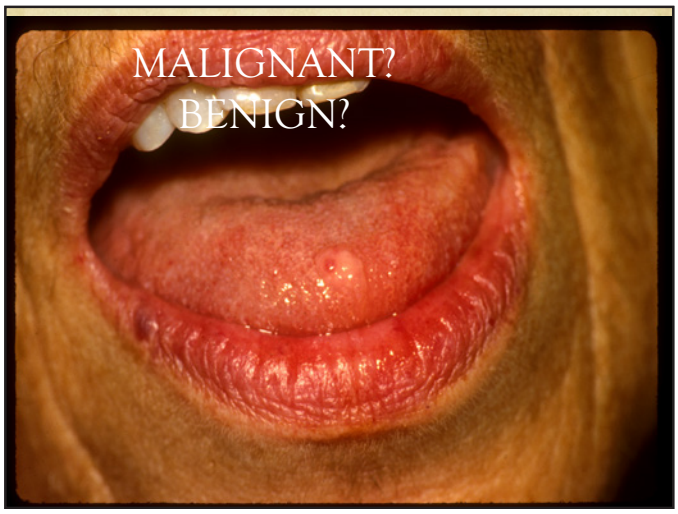
WHY BIOPSY?

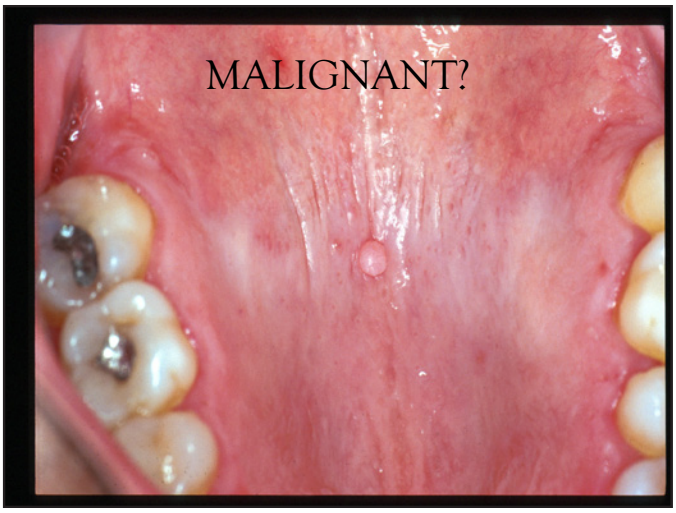
- TO DETERMINE WHETHER A NEOPLASM IS BENIGN OR MALIGNANT
- IF MALIGNANT, TO TYPE, GRADE, OR STAGE THE LESION TO DETERMINE A PROGNOSIS AND TREATMENT PLAN











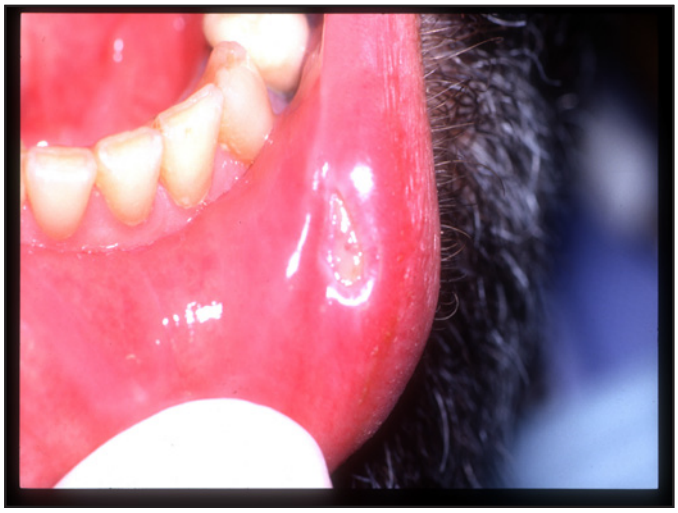
TYPES OF BIOPSIES

- EXCISIONAL BIOPSY
- INCISIONAL BIOPSY
- ORAL CYTOLOGY
- BRUSH BIOPSY
- ASPIRATION BIOPSY

For The Purpose Of This Presentation We Will Limit This To Incisional/Excisional Techniques

EXCISIONAL BIOPSY

- TOTAL REMOVAL OF THE SUSPECT TISSUE

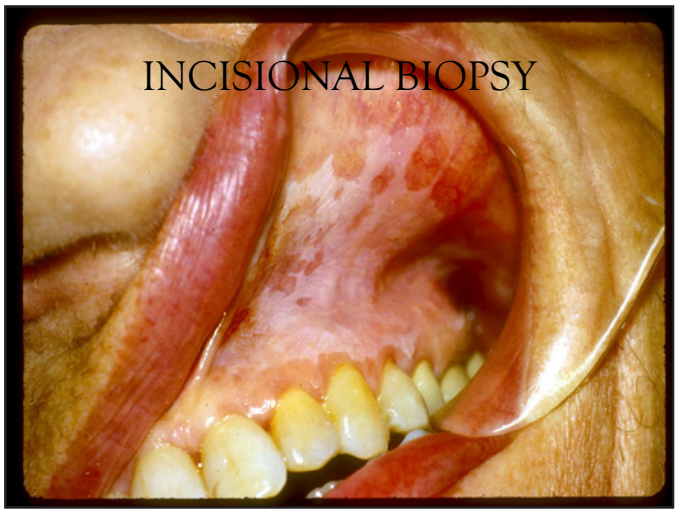


INCISIONAL BIOPSY

PARTIAL REMOVAL OF THE SUSPECT TISSUE

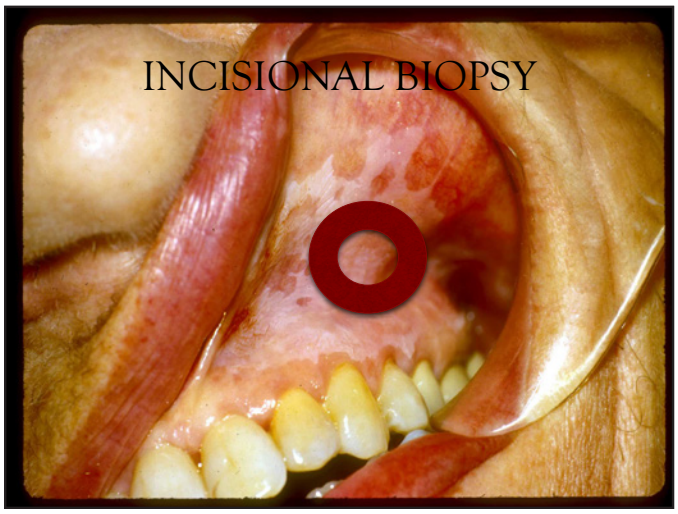
WHY INCISE? JUST TAKE OUT THE WHOLE THING!

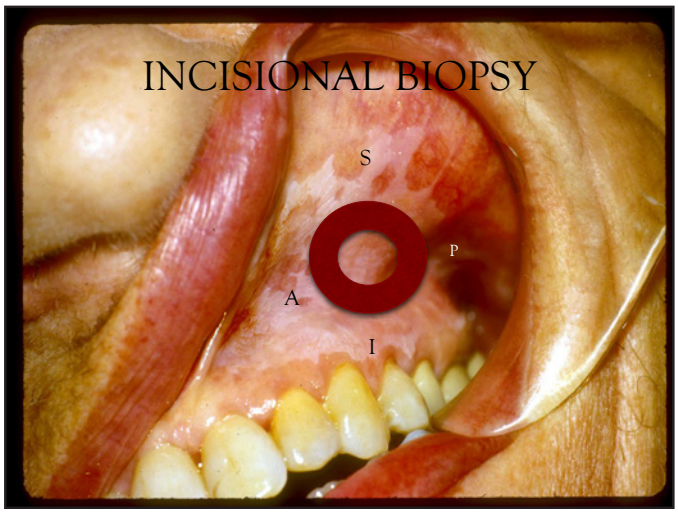
- THE LESION IS TOO LARGE TO REMOVE EASILY - WAIT UNTIL YOU GET THE DIAGNOSIS
- THERE ARE MULTIPLE SITES - SAMPLE A FEW LESIONS

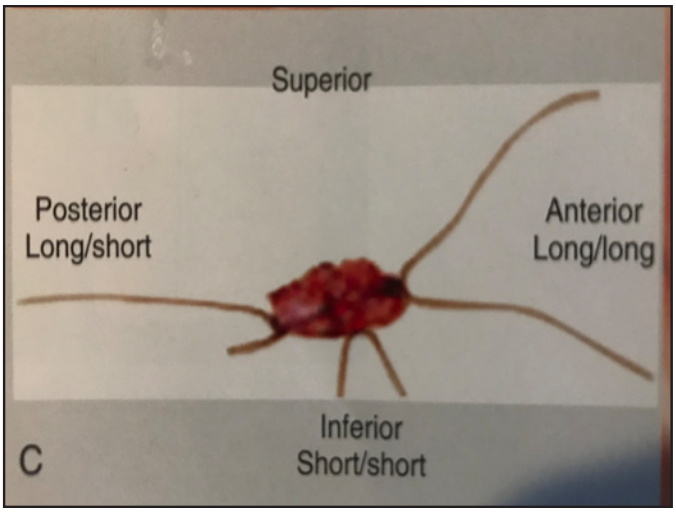


If You Take Multiple Biopsies,
PLEASE LABEL THE BOTTLES!

3 Area
#14 Area
19 Area
30 Area







Incisional Biopsy Technique

- NARROW, DEEP WEDGE IS BETTER THAN WIDE, SUPERFICIAL SPECIMEN
- THERE MIGHT BE MALIGNANT TISSUE DEEP IN THE LESION THAT YOU WILL MISS IF YOU JUST GO SUPERFICIAL

Biopsy Techniques – No Need For Any Special Equipment!!

Cold Steel – Scalpel
OR
Electrosurgery/Radiosurgery
OR
Punch
OR
Laser

AND
Suture Kit
Cotton Pliers

That's it! You Get The Biopsy Jar, Etc. From the Pathology Lab

STOP RIGHT HERE!

Oral Pathologists HATE Laser/Electrosurgery/Radiosurgery Harvested Biopsies, Right?

ABSOLUTELY 100% WRONG!

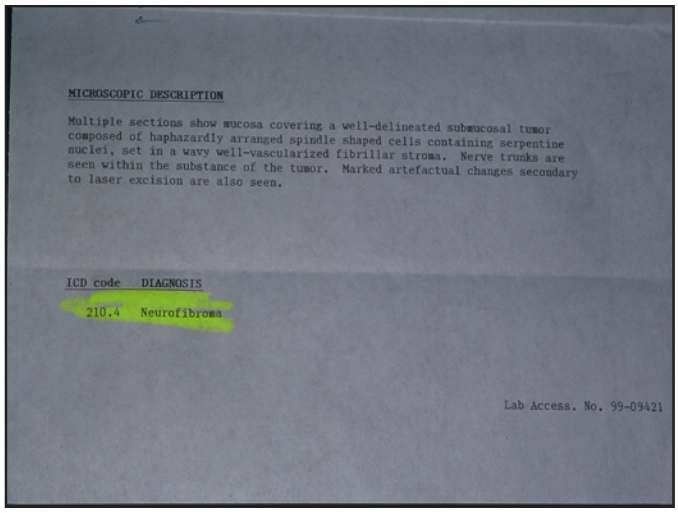
Biopsy Techniques

What's The Most Important Determinant Regarding Choice Of Technique?

What's The # 1 Key To Successful Laser/Radio/Electro Use?

TRAINING!!!!

If You Are Trained Incorrectly, This is What A Biopsy Report Looks Like:



MICROSCOPIC DESCRIPTION

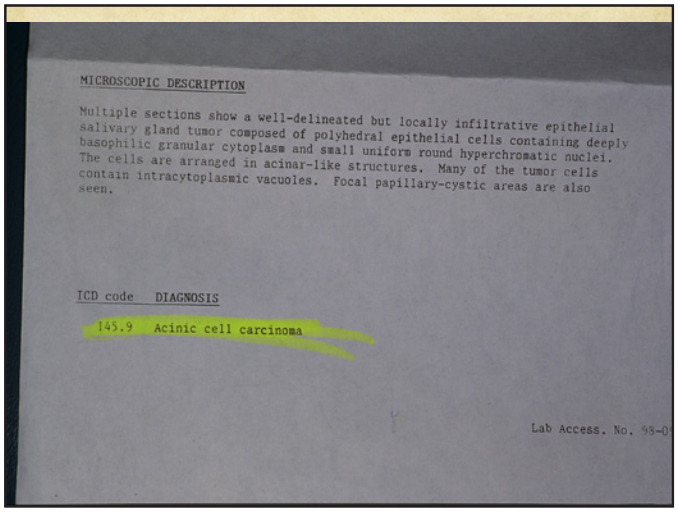
Multiple sections show mucosa covering a well-delineated submucosal tumor composed of haphazardly arranged spindle shaped cells containing serpentine nuclei, set in a wavy well-vascularized fibrillar stroma. Nerve trunks are seen within the substance of the tumor. Marked artefactual changes secondary to laser excision are also seen.

ICD code DIAGNOSIS

210.4 Neurofibroma

Lab Access. No. 99-09421

This is What A Laser Biopsy Report Looks Like IN TRAINED HANDS!



MICROSCOPIC DESCRIPTION

Multiple sections show a well-delineated but locally infiltrative epithelial salivary gland tumor composed of polyhedral epithelial cells containing deeply basophilic granular cytoplasm and small uniform round hyperchromatic nuclei. The cells are arranged in acinar-like structures. Many of the tumor cells contain intracytoplasmic vacuoles. Focal papillary-cystic areas are also seen.

ICD code DIAGNOSIS

145.9 Acinic cell carcinoma

Lab Access. No. 98-0

IMPORTANT!!!

When using lasers – electrosurgery- radiosurgery devices the surgeon should take WIDER margins than usual until they are proficient with settings – so that the specimen is not inadvertently damaged by use of excess energy

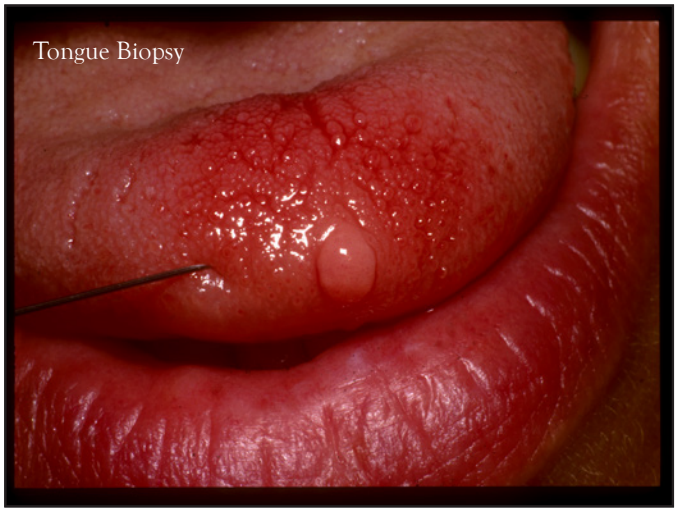
What Kind Of Things Will I See?
Top 53 Oral Pathologies
IN ORDER OF OCCURRENCE

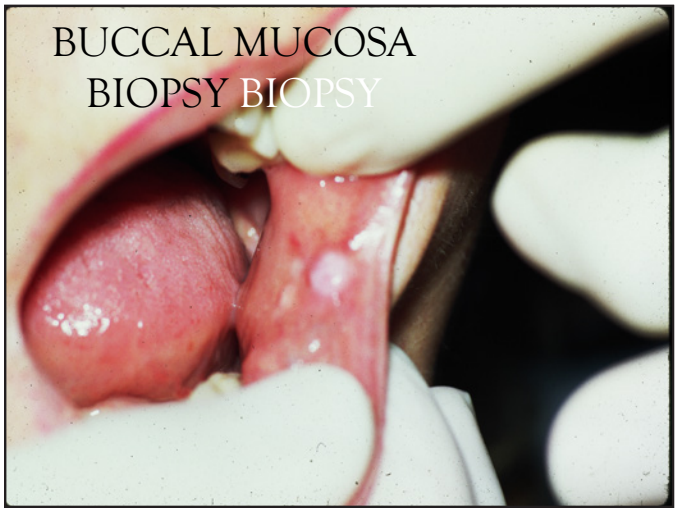
According to the textbook
Oral And Maxillofacial Pathology
by Neville, Damm, Allen, Bouquot

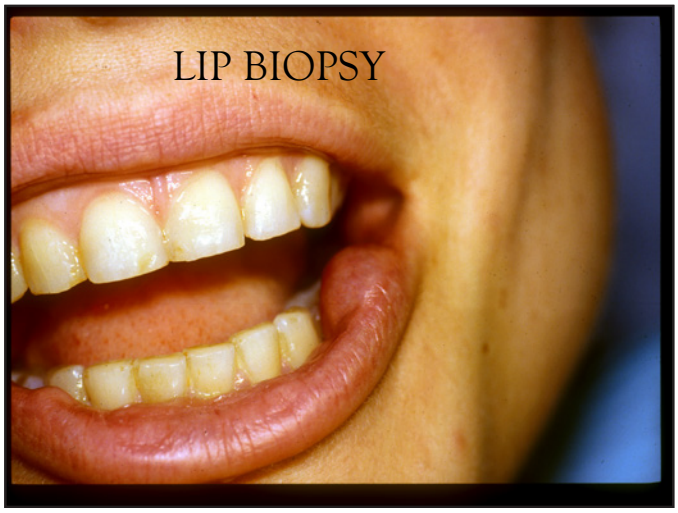
Epulis fissuratum
Lingual varicosities
Fissured tongue
Geographic Tongue
Papillary Hyperplasia of the Palate

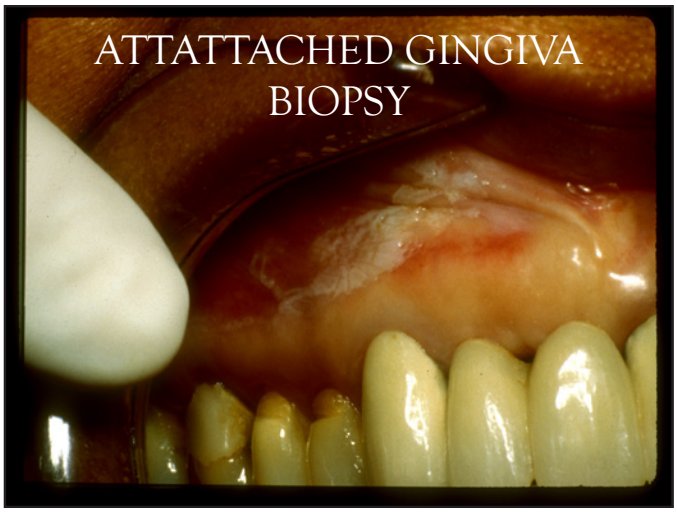
Leukoplakia
Palatal Torus
Irritation fibroma
Fordyce granules
Mandibular Torus
Leaf-shaped fibroma (under max. denture)
Hemangioma
Inflammatory ulcer
Inflammatory erythema

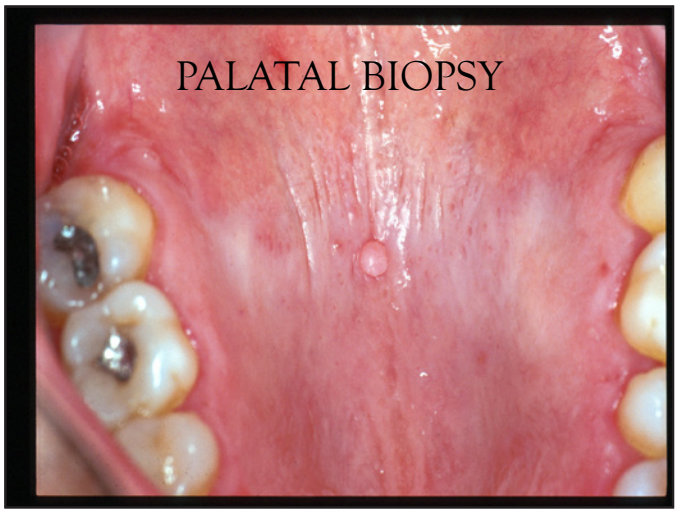
Herpes labialis
Mucocele
Scar tissue
Angular cheilitis
Smokeless tobacco keratosis
Hyperplastic
Lingual Tonsil
Hematoma/Ecchymosis
Frictional keratosis (cheek bite)
Lichen planus
Squamous cell carcinoma #25!!!!











Ready For The 5-Step Program?

Here We Go!

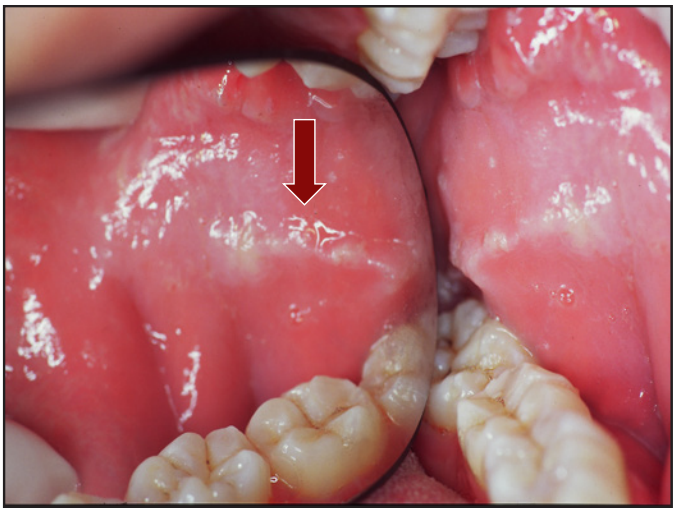
STEP ONE:
PATIENT ASSESSMENT

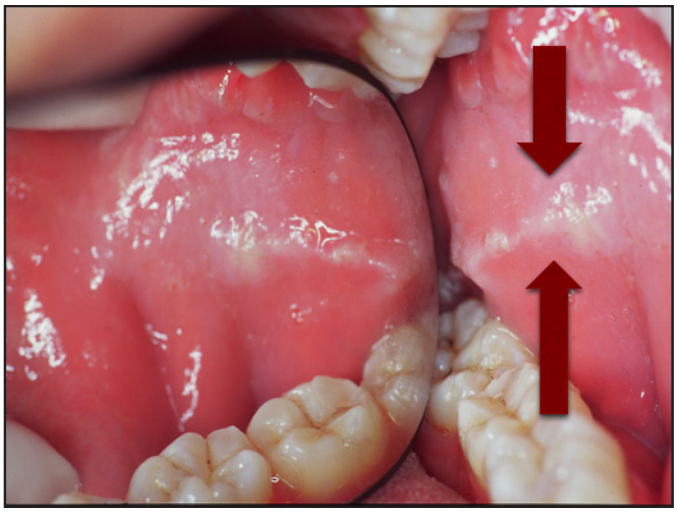
A Complete Medical History Can Very Often Give You The Diagnosis!

It Can Also Help You Decide If This Particular Patient Is the Right Patient For You To Treat!

STEP ONE:
PATIENT ASSESSMENT

Is the Patient A Grinder?
Look At The Tongue: Any Sign Of Macroglossia?
Is The Patient A Cheek Biter?





STEP ONE: PATIENT ASSESSMENT

SEXUAL HISTORY – MULTIPLE PARTNERS? HISTORY OF ATYPICAL PAP SMEARS WITH PARTNERS?

Uncomfortable Discussing This? DON'T BE!!!

HPV!!!!!

I have 2 patients:
35 y.o. single stockbroker
and
75 year old retiree -married to his h.s. sweetheart
I see the same lesion in each of them

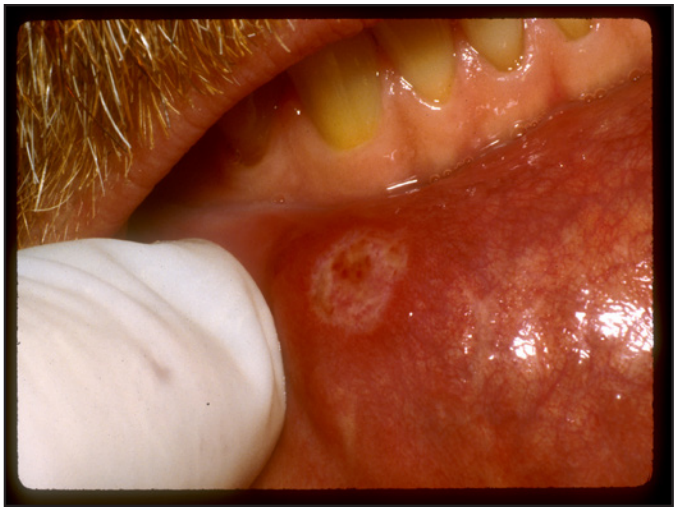
who am I more worried about??

KNOW THE MEDICAL HISTORY!!!

IS THAT DRUG INDUCED GINGIVAL HYPERPLASIA...OR IS THERE SOMETHING ELSE GOING ON??

KNOW THE MEDICAL HISTORY!!!

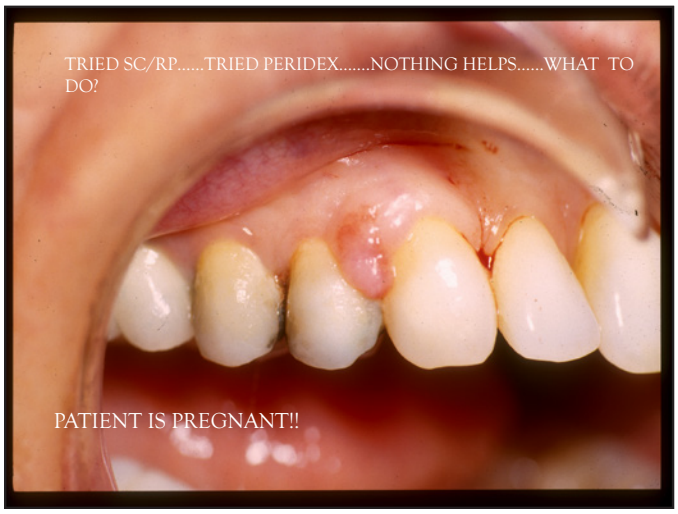
RAU?
CHRON'S DISEASE?



KNOW THE MEDICAL HISTORY!

UNCONTROLLED DIABETIC?
IMMUNOCOMPROMISED?

What If The Patient Is Pregnant?



Take A Photo And Watch It Until 2nd Trimester

Anything Special About Taking The Photo?

Of Course!!!

And Then Get Written Medical Clearance Faxed To Your Office *SIGNED By The OB Or Nurse Practitioner* (Not a Doula or Midwife IMO) To Perform The Procedure No Epi, etc....

STEP TWO
LESION ASSESSMENT

ARE THE BORDERS COMPLETELY VISIBLE?

DOES THE LESION START IN THE MAXILLARY TUBEROSITY AND EXTEND DISTAL TO THE HAMULAR NOTCH ?

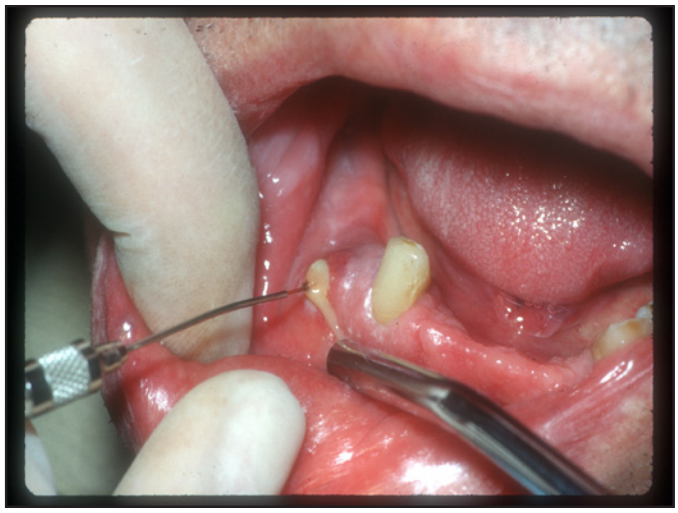
Lesion Assessment

CAN YOU AVOID UNDERLYING ANATOMY?

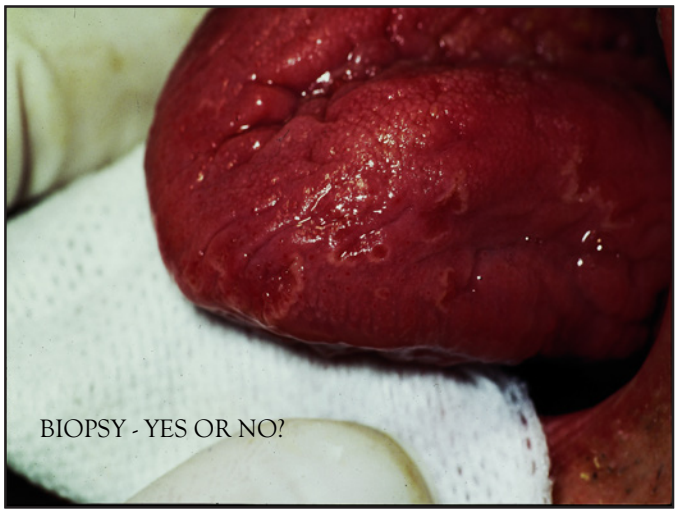
Is The Lesion Between The Lower Premolars?

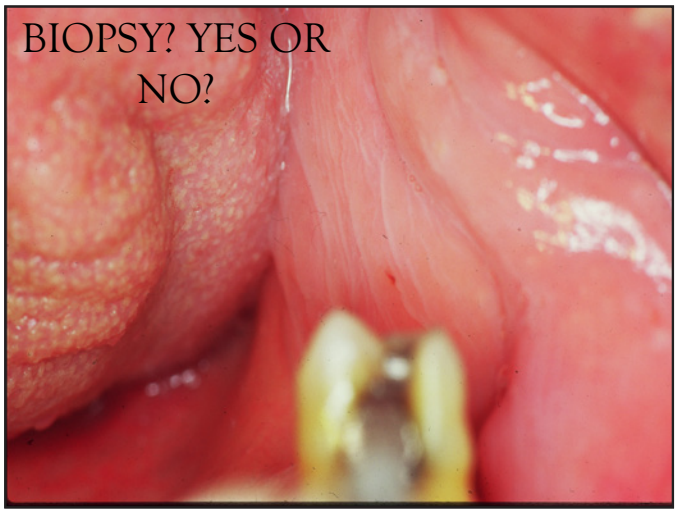
HOW WELL DO YOU KNOW YOUR NORMAL ANATOMY?

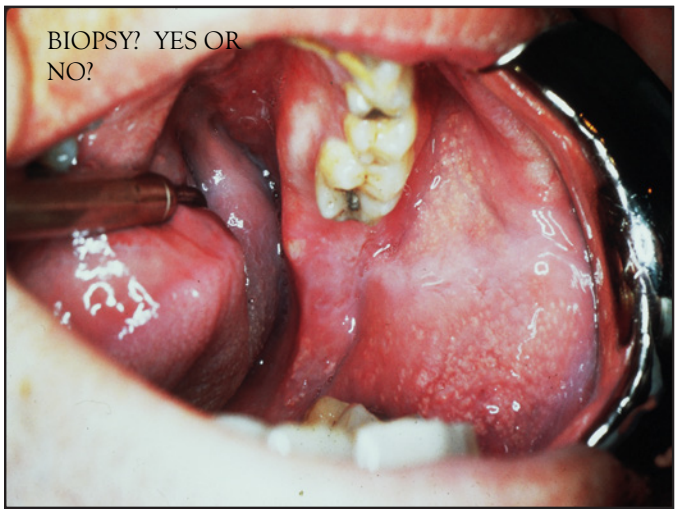
Where Does The Mental Nerve Exit The Bone? Do You Want To Incise Near That???



Do You Know What's Normal And What's Abnormal?

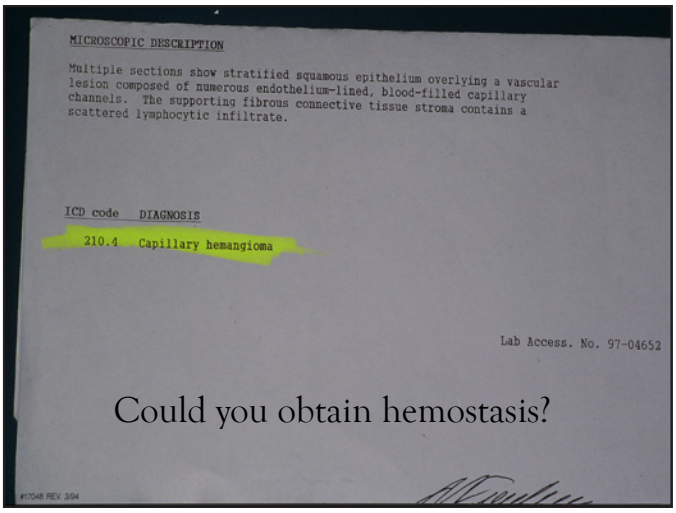


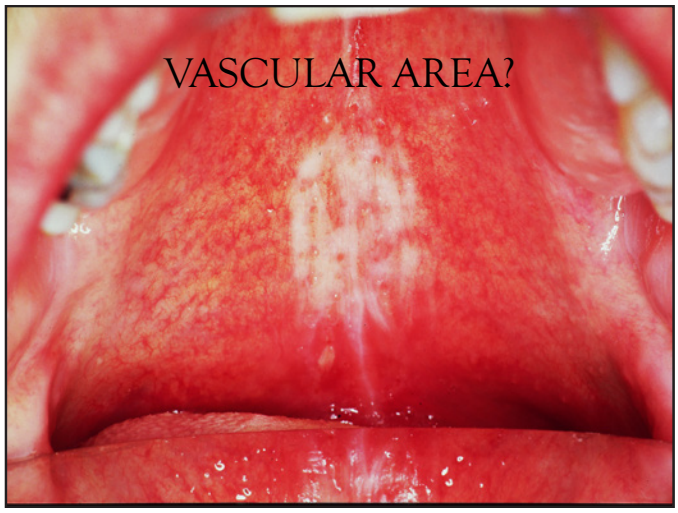


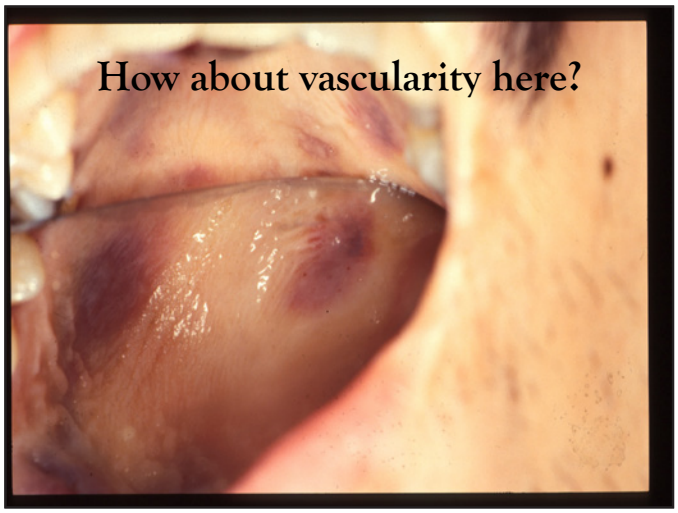


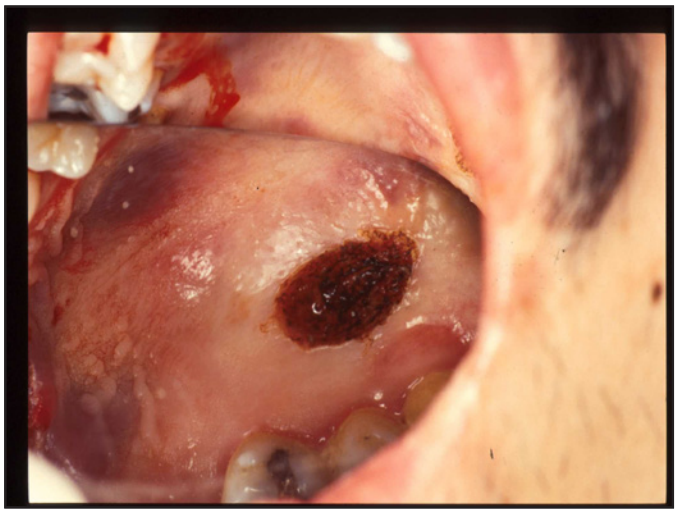
Lesion Assessment

WILL YOU BE ABLE TO OBTAIN HEMOSTASIS ?

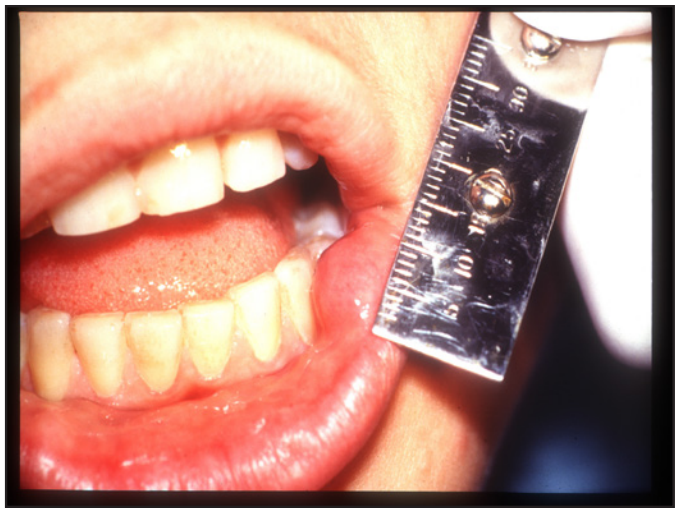

MICROSCOPIC DESCRIPTION
Multiple sections show stratified squamous epithelium overlying a vascular lesion composed of numerous endothelium-lined, blood-filled capillary channels. The supporting fibrous connective tissue stroma contains a scattered lymphocytic infiltrate.
ICD code DIAGNOSIS
210.4 Capillary hemangioma
Lab Access. No. 97-04652
Could you obtain hemostasis?

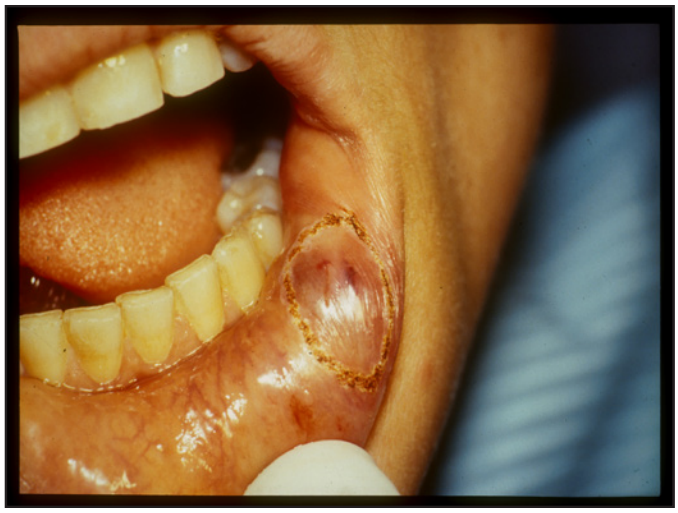

VASCULAR AREA?

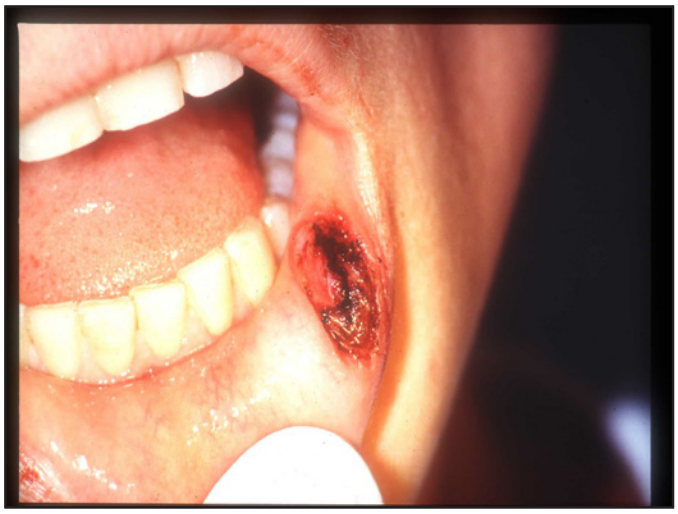

How about vascularity here?

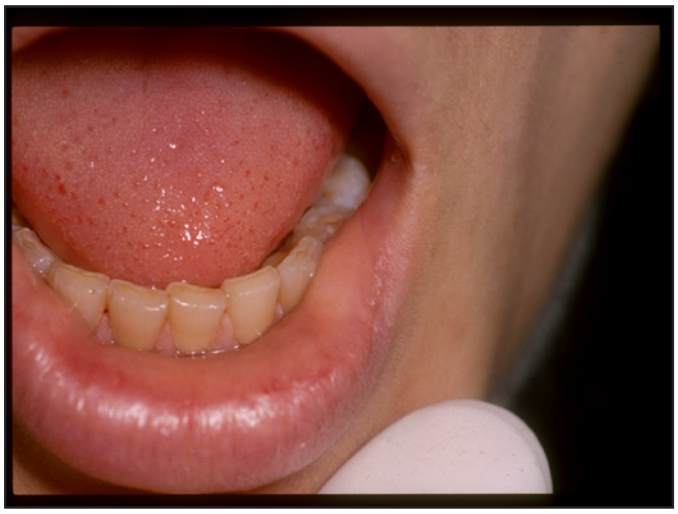



LESION ASSESSMENT
Is It In A Cosmetic Area?
Will You Leave A Scar?









LESION ASSESSMENT

COULD IT BE MALIGNANT?

FIG RUB

FIG RUB

F IXED - LESION IS FIXED TO UNDERLYING TISSUE

I NDURATED - LESION IS FIRM TO THE TOUCH

G ROWTH - LESION HAS GROWN RAPIDLY

R ED- LESION IS TOTALLY RED OR RED AND WHITE

U LCERATED - LESION SURFACE IS ULCERATED

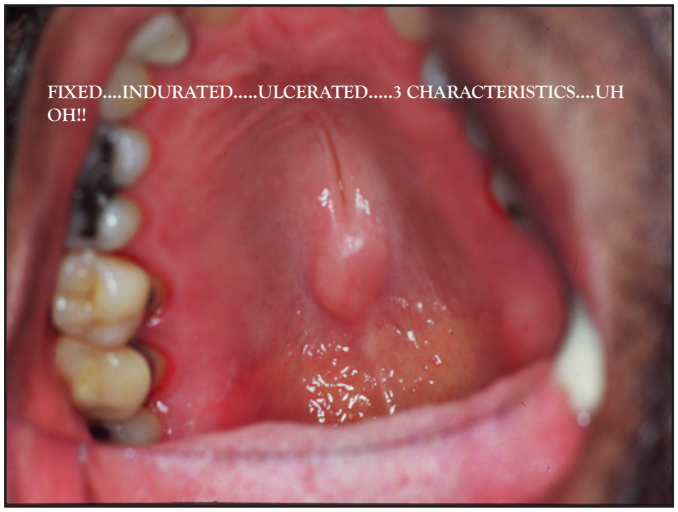
B LEEDS - LESION BLEEDS EASILY UPON TOUCH

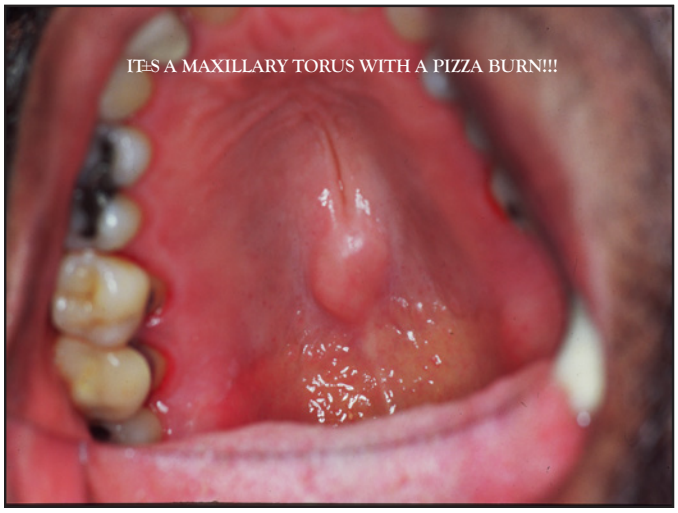
CLUES That Suggest Malignancy

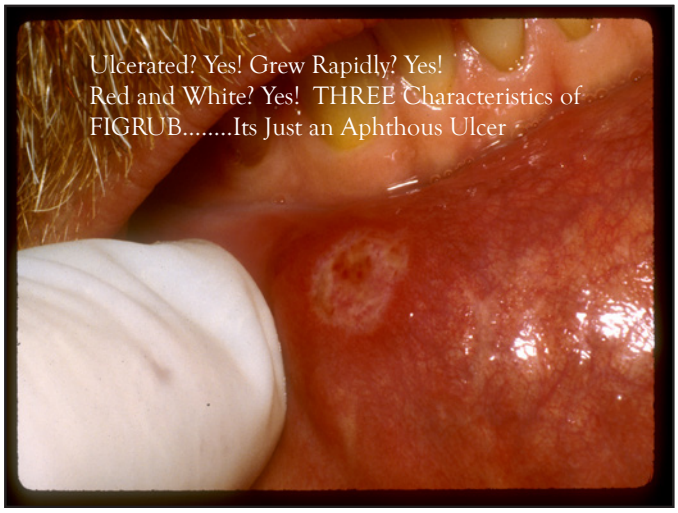
- SUDDEN WEIGHT LOSS
- SWOLLEN REGIONAL LYMPH NODES
- POORLY DEMARCATED MARGINS
- THESE ARE REASONS TO REFER!!

When Else Do I Refer? When FIG RUB Turns Out Badly

USE FIG RUB WITH A BIT OF COMMON SENSE!!

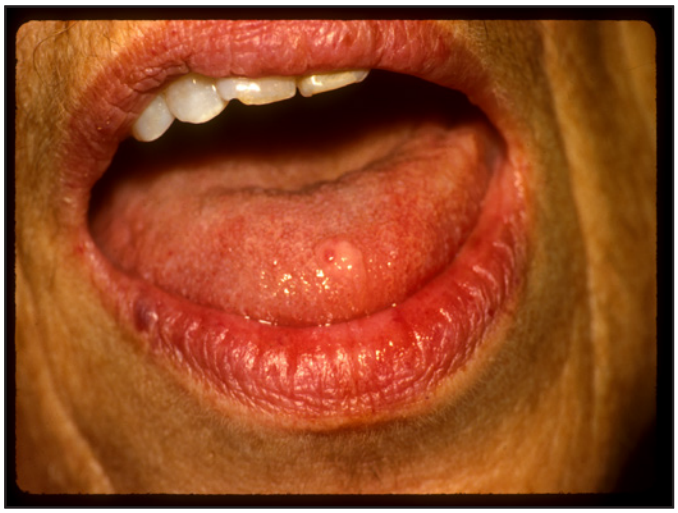


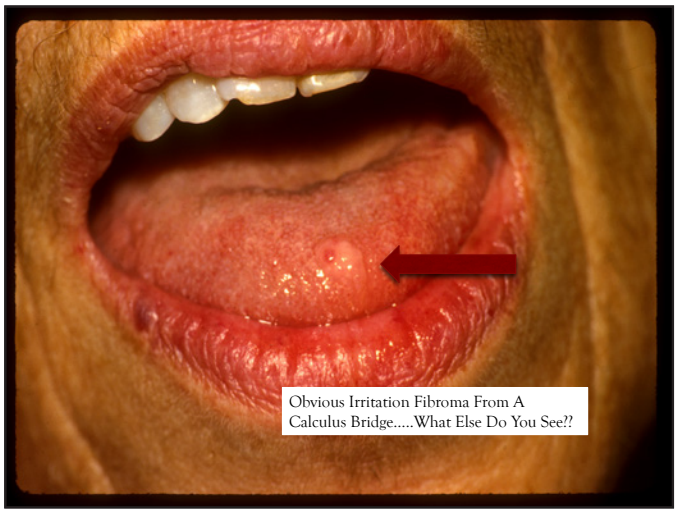


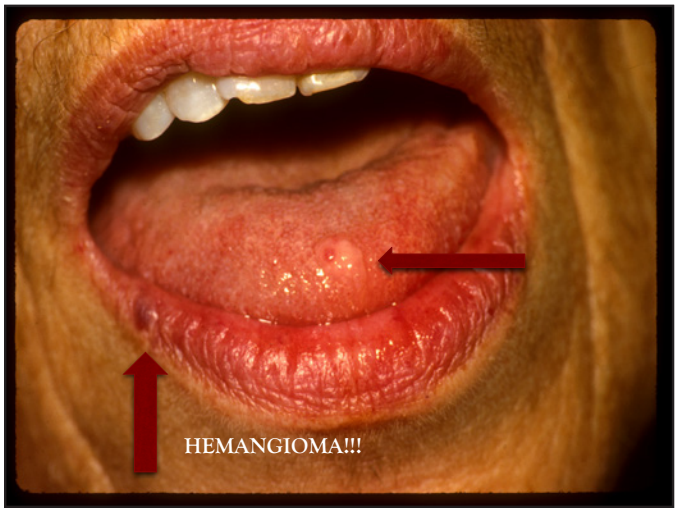


So....When Do I Biopsy? As Soon As I See Something?

Depends On What You Think It Is.
An Irritation Fibroma On A Tongue Ain't Going Away By Itself.

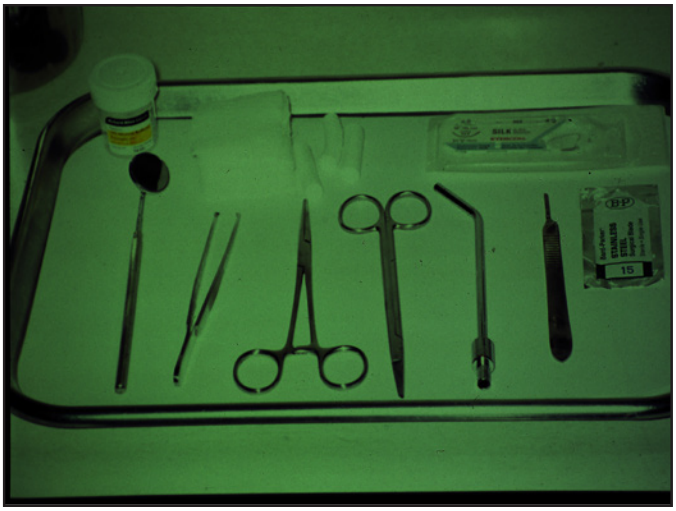






STEP THREE
TRAY SET-UP

- BIOPSY JAR
- GAUZE
- COTTON ROLLS
- SUTURE MATERIAL
- MOUTH MIRROR
- TISSUE PICKUPS
- NEEDLE HOLDER
- SCISSORS
- SUCTION TIP
- BLADE HANDLE
- # 15 BLADE
- MARKING STICK



STEP FOUR TECHNIQUE

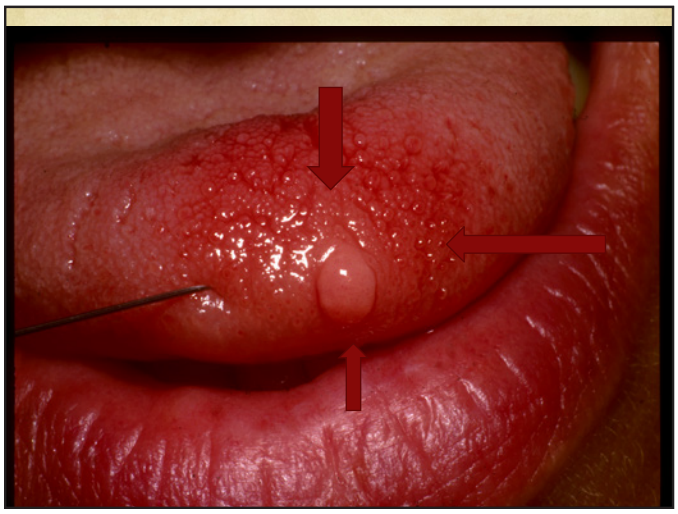
- ANESTHETIZE
- OUTLINE THE LESION IN YOUR MIND- COLOR IT!
- GRAB THE LESION WITH PICKUPS
- APPLY TRACTION USE A SUTURE?
- EXCISE THE LESION
- INSURE HEMOSTASIS
- POST-OPERATIVE INSTRUCTIONS

ANESTHESIA

- BLOCK PREFERRED OVER INFILTRATION
- IF YOU INFILTRATE TOO CLOSE TO THE LESION, THE SOLUTION CAN DISTEND THE TISSUE AND CONFOUND THE DIAGNOSIS
- IF SOLUTION IS DEPOSITED IRREGULARLY, THE LASER WILL CUT IRREGULARLY

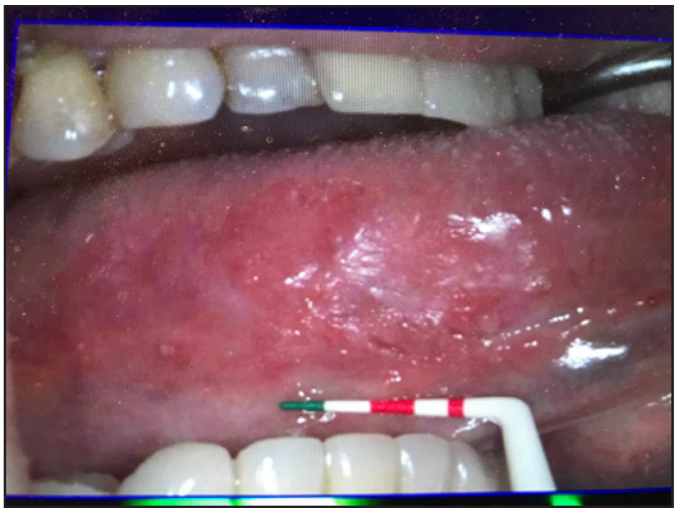
ANESTHESIA

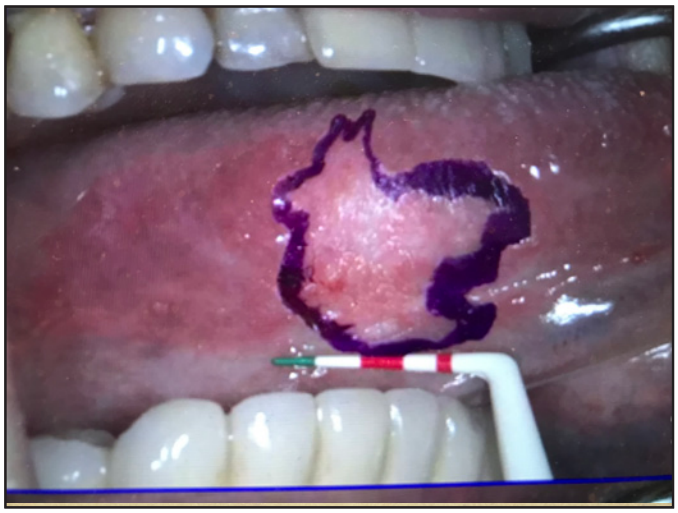
IF YOU MUST INFILTRATE INJECT AT LEAST 1 CM AWAY FROM THE LESION



OUTLINE THE LESION

USE A DENTURE MARKING STICK





POSTOPERATIVE TREATMENT

POSTOPERATIVE INSTRUCTIONS AND POST-OP APPOINTMENT
FILL OUT BIOPSY REPORT FOR LAB

POSTOPERATIVE APPOINTMENT

- EXAMINE WOUND FOR PROPER HEALING
- REMOVE ANY SUTURES
- REVIEW PATHOLOGY REPORT
- A BENIGN REPORT DOESN'T MEAN THE JOB IS FINISHED

PATHOLOGY REPORT

- WHETHER BENIGN OR MALIGNANT, DISCUSS IT WITH THE PATHOLOGIST
- IF A BENIGN INCISIONAL BIOPSY, DO YOU REMOVE THE REST OF THE LESION?

IN CASE OF A BENIGN INCISIONAL BIOPSY

- BENIGN IDIOPATHIC WHITE LESIONS HAVE A MALIGNANT TRANSFORMATION RATE OF 17%
- LEAVE IT? WATCH IT? REMOVE IT?
- PHOTOGRAPH IT?
- ***OF COURSE!!!!!***

BENIGN REPORT

- RECALL THE PATIENT PERIODICALLY TO ENSURE THAT THE LESION DOES NOT RECUR

MALIGNANT REPORT

- REFER TO AN ORAL AND MAXILLOFACFIAL SURGEON OR HEAD AND NECK SURGEON

A word about oral pathologists

how do I find one????

I prefer omp rather than regular (M.D.) pathologists

M.D. pathologists see a ton of stuff and are far less familiar with oral pathologies than an omp

Call oral surgeons in your area

call periodontists in your area

call your local dental school

call the American board of oral and maxillofacial pathology

Any Questions?
Ask Me!

Robert A. Convissar, D.D.S., F.A.G.D.

Diplomate, American Board of Laser Surgery
Master, Academy of Laser Dentistry
Fellow, American Society of Laser Medicine and Surgery
516-987-5707

LaserBobDDS@Gmail.com

www.fullspectrumseminars.com

SELF EVALUATION

Oral Cancer Detection: A Clinical Approach to Early Diagnosis

1. Oral cancer is highly associated with which of the following:

a. Tobacco abuse
b. Alcohol abuse
c. Human Papillomavirus
d. All of the above

2. Which of the following is TRUE about Fluourescence Visualization Oral Cancer Exam devices?

a. It may be able to spot lesions before they may be noticed with the naked eye
b. There is an ADA code for such exams
c. Some dental insurance plans cover F.V. exams
d. All of the above are true

3. Which of the following is FALSE about Fluoresence Visualization Oral Cancer Exams?

a. It detects cancerous lesions
b. The Journal of the American Medical Association believes their use can decrease the local recurrence of malignancies
c. Dr. Gordon Christensen believes that such devices should be a routine part of exams
d. All of the above are false

4. Which of the following is TRUE?

a. If a benign excisional lesion is removed and the margins are clear, the patient needs no further treatment
b. If a malignant excisional lesion is removed and the margins are clear, the patient needs no further treatment
c. Both of the above are true
d. Neither of the above are true

5. When an incisional biopsy is performed:

a. A wide but shallow specimen should be harvested
b. A narrow but deep specimen should be harvested
c. A wide but deep specimen should be harvested
d. A narrow and shallow specimen should be harvested

6. Clues that indicate malignancy include:

a. Sudden weight loss
b. Swollen regional lymph nodes
c. Poorly demarcated margins
d. All of the above

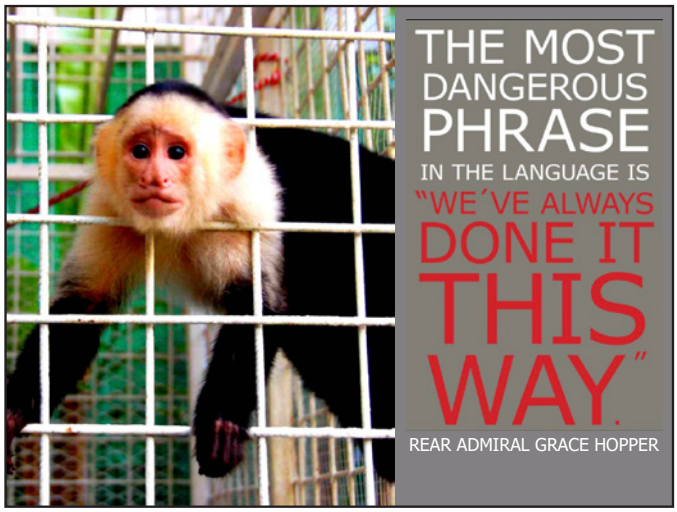
7. Which of the following regarding biopsy technique is TRUE?

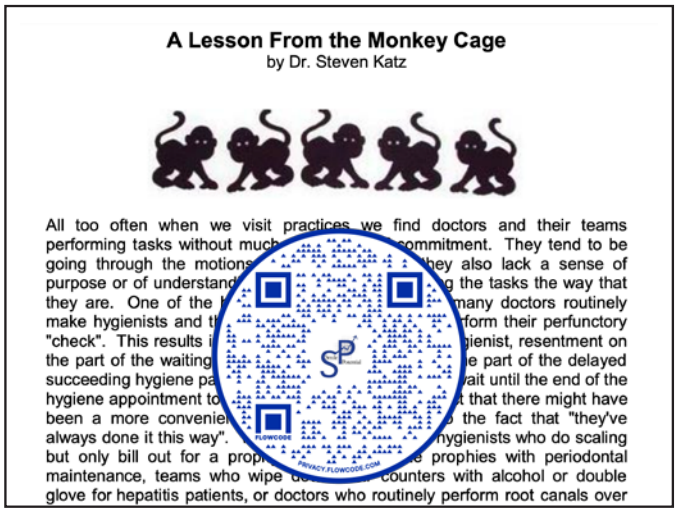
a. Denture marking stick should be part of your tray set-up
b. Block analgesia is preferred over infiltration an algesia
c. Periodontal probes should be placed in the photo of the lesion
d. All of the above

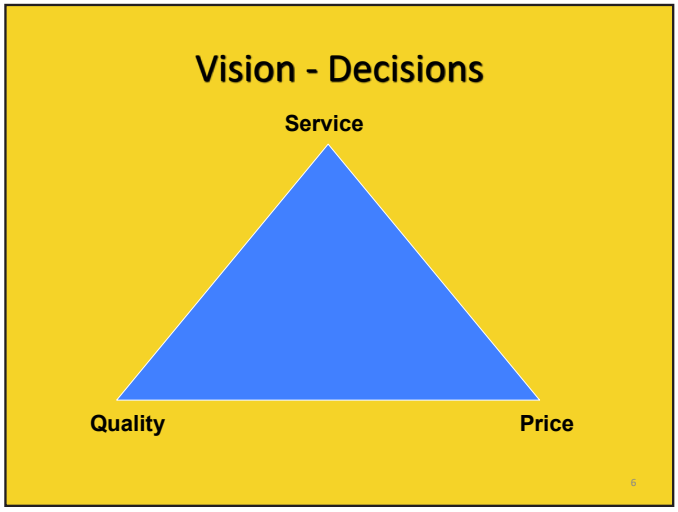
Answer Key: 1. D, 2. D, 3. A, 4. D, 5. B, 6. D, 7. D

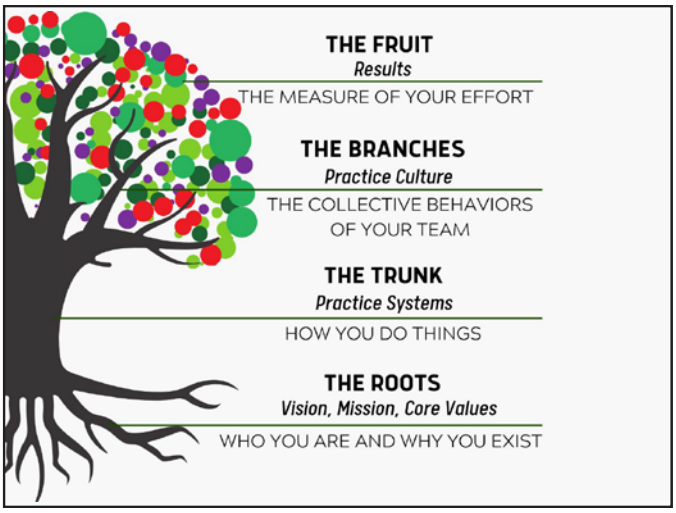
Smile Potential Practice Growth Coaching
Steven M. Katz, DMD, MAGD, FICD
https://smilepotential.com
coaching@smilepotential.com
516-599-0214

Creating a Great Practice Team and Office Culture









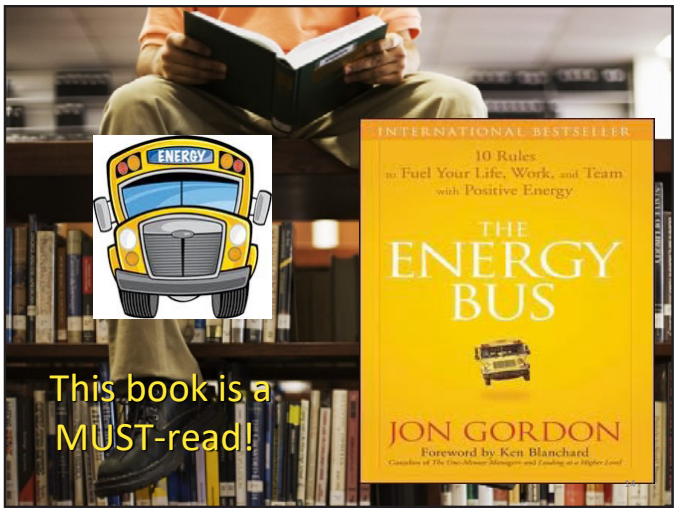
How do I Motivate My Team?

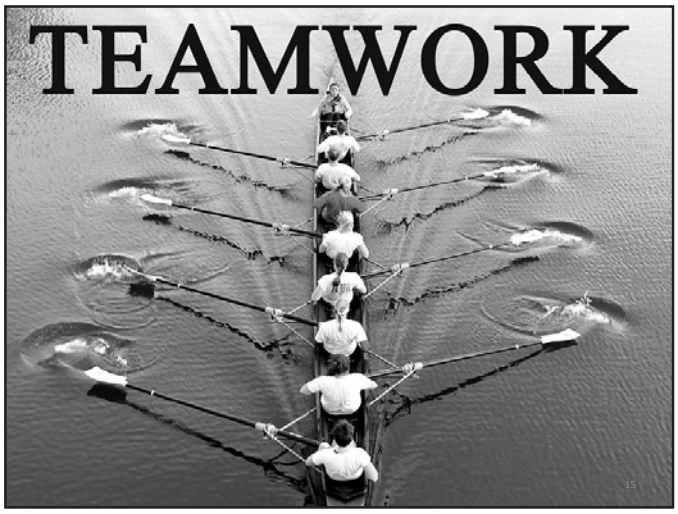
More important:

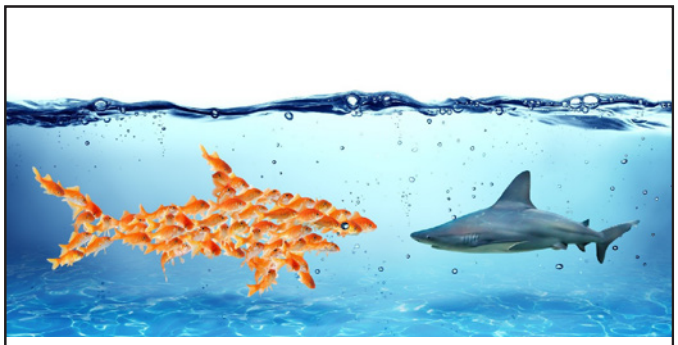
What am I giving my team to be motivated about ?

9

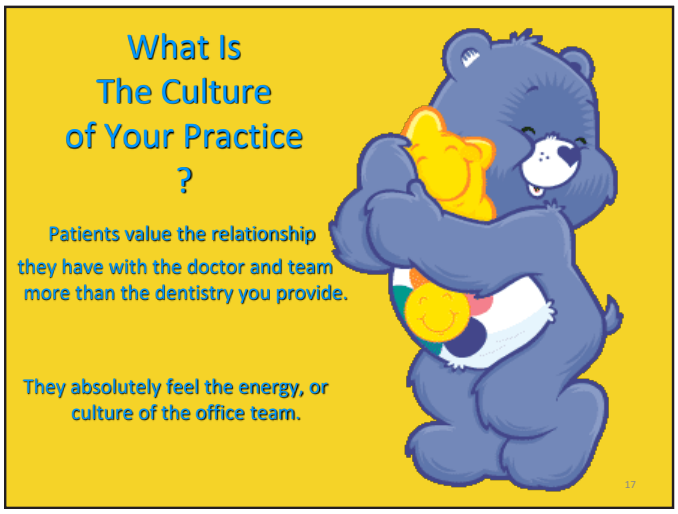
1. Have a VISION for your practice and share it with your employees.
2. INSPIRE your employees.
3. APPRECIATE your employees.





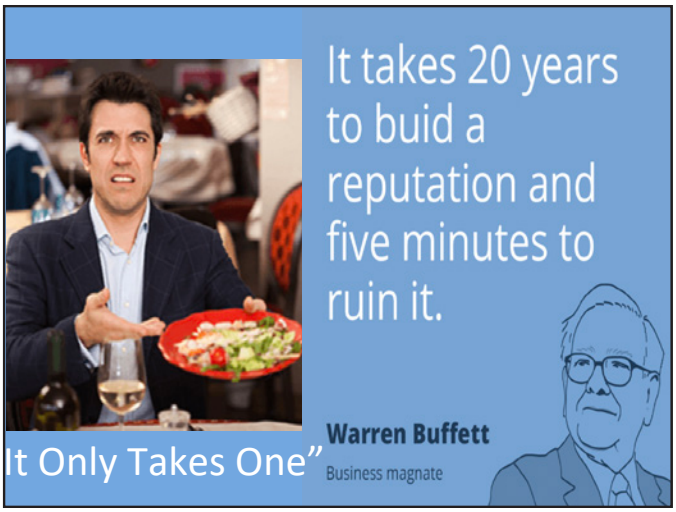


TEAMWORK



Symptoms of a Toxic Culture

- Lack of clarity/ policies allows employees to "bend" rules
- Leaders (managers/doctors) that dislike conflict so they ign
- The sense that there are different rules for different people
- Lack of self respect causes total lack of respect
- Resentment from watching people "get away with it"
- Team members that are extremely toxic getting a ca
- Ignoring the need for conflict resolution



It Only Takes One

It is amazing how the small actions of one person can totally undermine an otherwise fantastic practice or business. Don't believe it? Check this out.

Recently a brand-new restaurant ...ved in the newspaper. It seems the setting was beautiful, a... Yet the restaurant received a lousy review... ...ers felt their waiter did a horrible job.

This is really sad, an... ...sizable investment, lots of planning, an i... ...so many things right, they were ultimately ... ...e person.

You can be sure that ... ...server was chastised, if not fired. And here is ... ...tice.

No matter how great your ... ...ies you are judged by one person who doesn't care to giv... ...e patient a memorable experience every time they visit or are on the phone. It can be anyone in the practice – a hygienist, a dental assistant, a business team member, and perhaps more frequently than we like to admit…the doctor!

NO CELL PHONE POLICY

THANK YOU

I appreciate Each of you

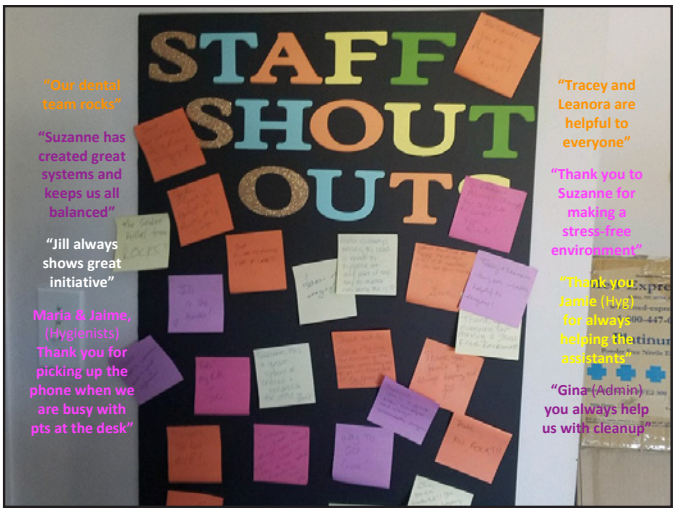
because Your participation shows your commitment

to continually raising the standard of patient care

in our profession! Im proud to call you my colleagues!

Sincerely, Kelly

Smile Potential Dental Practice Coaching
Phone: 516-599-0214 / Email: coaching@smilepotential.com



Effects of A Positive Culture

- Doctor
- Team
- Patients
- Doctor and Team

SMILE POTENTIAL DENTAL PRACTICE COACHING

coaching@smilepotential.com 516-599-0214

If you would like any additional information about anything discussed in this program, or copies of any of the slides or resources mentioned…

Use QR code…

or send email to:
coaching@smilepotential.com

Include name and phone number.

SELF EVALUATION

Creating a Great Practice Team and Office Culture

1. T/F - If something has always been done one way, it makes sense to not consider changing it.

2. Which of the following combinations are not possible?

- **a.** High quality and low price
- **b.** High quality and excellent service
- **c.** High quality, low price and excellent service
- **d.** Excellent service and low price

3. Which of the following is the most important thing to dental team members to have from their employment, as long as they are paid fairly?

- **a.** Good wages
- **b.** Appreciation
- **c.** Interesting work
- **d.** Job security

4. T/F - It is unnecessary for the doctors to have to change anything that they do, as long as the members of the team make recommended changes.

5. A positive culture:

- **a.** Can happen organically
- **b.** Can occur through engineering
- **c.** Can be felt by anyone walking into a practice
- **d.** All of the above

6. Which is not needed to create empowerment in a member of the team?

- **a.** Resources
- **b.** Training
- **c.** Bonuses
- **d.** Trust

7. T/F - Gossip between two members of a team is OK, as long as they are friends.

Answer Key: 1. F, 2. C, 3. B, 4. F, 5. D, 6. C, 7. F

Thomas Cox, ARM

Thomas P. Cox, ARM, of Richmond, Virginia, is president of Bluewater Solutions, LLC, a boutique risk and insurance management company focusing primarily on healthcare and related risks. He has over 30 years experience working almost exclusively with healthcare professionals. Mr. Cox has held executive positions with a large medical center, a major medical malpractice insurance company, and multiple insurance agencies before starting Bluewater Solutions in 2009. Bluewater Solutions offers all manner of risk and insurance management, consulting, and litigation stress coaching. Mr. Cox has a B.S. in Health Education, has done graduate work in Public Health, and earned his Associate in Risk Management designation from the Insurance Institute of America.

You may contact Mr. Cox at 804-221-4369 or by email at tpcox@bluewatersolutions.net.

WINNING FOCUS, INC.
Successful Litigation Stress Coaching

Thomas Cox, COO, Litigation Stress Coach
2312 Summerwood Drive, Henrico, VA 23233
804-221-4369
tpcox@bluewatersolutions.net
www.winfordoc.com

Understanding Insurance Gaps and Managing Litigation Stress

Insurance Gaps

- Personal v. Professional
  - Cyber Liability
  - Disability insurance
  - Life Insurance
  - Supplemental benefits

Personal v. Professional

- The last section will deal with litigation stress, where I will discuss that who you are is what you do and what you do is who you are.
- Example: Insurance company v. dental or medical practice

Personal v. Professional

- If it is difficult separating who you are from what you do, then any insurance gap is both personal and professional.
- When dealing with litigation, who you are makes it more difficult to deal with than other professions.

Cyber Liability

Basics

- First internet breach: 1974
- Victims: American Express, Visa, MasterCard
- 300,000 job openings in cyber security
- Good guys always one step behind bad guys

Cyber Liability Basics

- Remove the internet = estimated 8% decrease in GDP
- Threat: More ways to get money out of the internet and more easily (do not need to buy a gun)
- Continual changes in software leaves holes
- The cloud (where the data is going, so is the action)
- The Internet of Things ("IoT") (*Phones, watches, house*)
- "It can't happen to me..."
- Professional and personal…one and the same
- Will likely be how WWIII starts

Cyber Liability Basics

- What is cyber crime?

Unlawful acts wherein the computer is either a **tool** or **target** or both. Commonly it is a crime that can be committed live (analog) or via computer (digital).

  - Illegal sales (stolen goods, illegal drugs)
  - Pornography
  - Online gambling
  - Intellectual property theft
  - Defamation
  - Stalking

Cyber Liability Basics

Basics

- Over 300 billion emails sent daily
- Approximately 50% are phishing
- Looking for data to sell or leverage
- Personal or customer information

Cyber Liability Basics

- 95% of phishing-based breaches follow software installation.
- $3.62 million: average cost of an email breach.
- 66 days: Average time needed to remediate a breach.
- 27.7%: Likelihood a second breach will occur with 24 months.
- $141: average cost per record to remediate a breach, but some industries are hit harder than others:
  - > Healthcare: $380 per record
  - > Financial services: $245
  - > Human Services: $223
  - > Education: $200
  - > Life science: $188

Cyber Liability

- Having an incident response team can reduce the cost of a breach by approximately $19 per record

Cyber Liability Basics

- What is cyber crime?

The computer may, however, also be a *target* for unlawful acts.

- Unlawful access to a computer/system/network
- Theft of information
- E-mail bombing
- Trojan attacks
- Internet time theft
- Physical damage to a computer/system/network
- Ransomware

Cyber Liability Basics

Malware and non-malware attacks

- Malware attacks involve emails with infected attachments used to gain access to a computer, commonly pdf or doc.
- Attacks without malware impersonate a trusted person or company to trick the user into giving away corporate information or assets. These commonly use imitation login pages, malicious links, or forged requests.
- 91% of cyber crime starts with **one** email -*FireEye*

Cyber Liability Basics

- 10% of attacks involve malware
  - Viruses
  - Worms
  - Ransomware
  - Adware
  - Trojan Horse
  - Spyware

Cyber Liability Basics

- 90% of email attacks do not involve malware
  - Impersonation
  - CEO fraud
  - Whaling
  - Spear phishing
  - Credential harvesting
  - W2 scams

Cyber Liability Basics

Two biggest concerns, financially, are ransomware and theft of Personally Identifiable Information ("PII").

Ransomware attacks

- 97% infected attempted to infect backup repositories
- 53% of data was encrypted
- 34% of companies that paid the ransom were unable to recover data

Cyber Liability

Now that I have your attention…

- Cyber liability insurance comes with risk management, some offer monitoring
- Underwriting tracks size and revenue
- Premiums jumped in 2021 and 2022
- Premiums flattening in 2022 and 2023
- Make sure you know what you are buying

Cyber Liability

Insuring Clause 1. Cyber Incident Response

- Cyber incident response
- Legal and regulatory response
- Security and forensic costs
- Crisis communication costs
- Privacy breach management costs
- Third-party privacy breach management costs
- Post-breach remediation costs

Cyber Liability

Insuring Clause 2. Cyber Crime

- Funds transfer costs
- Theft of funds held in escrow
- Theft of personal funds
- Extortion
- Corporate identify theft
- Telephone hacking
- Customer phishing

Cyber Liability

Insuring Clause 3. System Damage and Business Interruption

- System damage and rectification costs
- System business interruption
- Claim preparation costs

Cyber Liability

Insuring Clause 4. Network Security & Privacy Liability

- Network security liability
- Privacy liability
- Contingent bodily injury
- Management liability
- PCI fines, penalties and assessments

Cyber Liability

Insuring Clause 5. Regulatory Actions

- Regulatory fines, penalties, and resolution agreements
- Corrective action plan costs

Insuring Clause 6. Media Liability

- Defamation
- Intellectual property rights infringement

Insuring Clause 7. Technology errors and omissions

Insuring Claus 8. Court attendance costs

Cyber Liability

- The key point is to have this coverage while also working with a reputable service provider. Between these two resources you should have the best protection possible and also be protected in the event of a successful cyber attack.

Insurance Gaps: Disability insurance

- What it does
- Why does it matter?
- What are the options?

Disability insurance

What it does

- Income protection

Why do you need it?

- >25% likelihood of disability between 20-65
- People dismiss spinal cord and brain injuries, and amputation as too remote, but most disability claims are related to cancer, back injury, heart attack, diabetes, and other chronic illnesses (see “exposome” in Part 1).

Disability insurance

Types of disability insurance

Short-term

Long-term

Individual

Group

Short-term disability

- Typically replaces 60-70% of base salary
- Term is a few months to one year
- Likely will have an elimination period of as few as a couple of weeks to a month
- May or may not cover partially disabled

Long-term disability

- Typically replaces 40%-65% of base salary
- Common elimination period is 90 days
- Benefits end when:
  - Disability ends
  - At a certain age or number of years
  - Social Security Normal Retirement (“SSNR”)

Definition of disabled

- Any occupation – least expensive
- Modified own occupation
- Transitional own occupation
- Own occupation
- Own occupation not engaged
- Own specialty – most expensive

Policy, not marketing materials or agent

Disability Policy Riders

- Partial/Residual Disability
- Inflation
- Future Purchase
  - Future increase
  - Benefit update
  - Benefit purchase
  - Benefit increase
- Catastrophic Disability
- Retirement
- COLA
- Additional Disability
- Non-Cancelable and Guaranteed Renewable

Disability Policy Riders

- Must have
  - Guaranteed Renewable
    - Conditionally renewable = NO
    - Guaranteed renewable = premium?
    - **Non-Cancelable and Guaranteed Renewable**
  - Residual Disability
  - Own Specialty
  - COLA (under 50)
  - Future Purchase (under 30)

Group Disability

- Can cover people otherwise uninsurable
- Offers optional communicable disease coverage (Business Overhead)
- Will be a lower premium than individual
- Two or more professionals = group
- Can include group life insurance
- Employee benefit

Insurance Gaps: Life Insurance

Life Insurance Marketing and Research Association (LIMRA)

- Misconceptions are deterring millennials (ages 27-42) from buying the life insurance protection they need.
- According to the LIMRA 2022 Insurance Barometer Study:
  - 55% of millennials have no life insurance at all
  - 35% of millennials feel that life insurance is too expensive
  - 1/3 of millennials say they haven't purchased life insurance because they don't think they would qualify, or they haven't been approached

Life Insurance

- Asset protection
- Who you love and who you owe
- Individual and Group (term)
- Term Life: 100% death benefit with policy term
- Permanent Life
  - Whole Life: death benefit with savings component (cash value)
  - Universal Life: Whole life with the option to increase or decrease premiums (increase and decrease benefits)
  - Variable Life: Investment vehicle with premiums invested, typically in mutual funds

Final Expense Insurance

- Whole life insurance with a small benefit
  - Funeral or burial insurance
- Face value of $2,000 - $35,000
- Covers final expenses: Funeral, burial, cremation, taxes, debts ($7,000-$12,000)
- Likely don't need if you already have life insurance or pre-paid funeral expenses
- This does make sense for anyone younger than 85 with no life insurance or pre-paid funeral coverage
- Guaranteed issue, but maybe not on day 1

Supplemental Benefits

Indemnity-Based Voluntary Insurance

- Commonly specific coverage for cancer, hospital indemnity, accident, critical illness, etc.
- Offered by employers to employees, paid by employees
- No tax benefits
- No coverage outside of the scope

Supplemental Benefits

Expense Reimbursed Insurance

- Unique benefit plan that:
  - Allows for "discrimination"
  - Is ACA compliant
  - Is a fully-insured insurance plan and tax-deductible for employer
  - Fills coverage gaps (reimbursed insurance)
  - Is flexible
  - Enhances employee recruiting and retention
  - Helps with high-deductible health plans

Supplemental Benefits

- **Level 1: Benefit Gaps**

Deductibles, co-insurance, co-pays, exclusions, limitations, visit limits

- **Level 2: Expanded Coverage**

Brand name frames, private hospital room, major dental, additional PT visits, brand name prescriptions, OON mental health

- **Level 3: Unexpected coverage**

Acupuncture, adult orthodontia, LASIK, executive physicals, prescription sunglasses, prescribed massage therapy, treatment abroad

Expense Reimbursed Insurance

Expense reimbursed insurance isn't tied to the same types of condition limitations as indemnity-based voluntary insurance. This type of supplemental plan provides coverage for both routine expenses and beyond, casting a broader net of where coverage will be offered and leaving far fewer holes. If a coverage gap results from a routine Rx, a heart attack, cancer or anything in between, expense reimbursed insurance has the ability to provide coverage up to the specified plan levels, between $5,000 and $100,000.

Additional Information

tpcox@bluewatersolutions.net

804-221-4369

Litigation Stress

Reader's Digest Version

- What is stress?
- Why does it occur?
- What should we do about it?
- What is litigation stress?
- Why does it occur?
- What should we do about it?
- Why should we do something about it?

Litigation Stress

How I ended up here

Stress

Some definitions

- General Adaptation Syndrome ("GAS")
- Stress
- Stressor
- Eustress
- Distress

Hans Selye

Stress

Selye's last inspiration for GAS came from an endocrinological experiment in which he injected mice with extracts of various organs. At first he thought he had discovered a new hormone, but then realized that anything he injected produced the same symptoms: swelling of the adrenal cortex; atrophy of the thymus; and, gastric and duodenal ulcers.

Stress

Paired with his observation that people with different diseases exhibit similar symptoms resulted in Selye describing the effects of "noxious agents," which he later termed "stress."

In other words, everything bothers us!

Stress

Selye eventually developed a theory of a physiology of stress having two components:

- A set of responses he eventually summarized as General Adaptation Syndrome; and,
- The development of a pathological state brought about from ongoing, unrelieved stress.

Stress

Selye discovered and documented that stress differs from other physical responses in that stress can originate from good news or bad, and whether the impulse is positive or negative. This eventually evolved into an understanding that there is the event, there is the response, and then there is our management of the response.

Example: Me

Stress

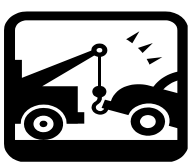
- Stress is something that happens to us on an ongoing basis, it is our reaction to the world around us.
- We perceive it as eustress or distress.
- The hypothalamic-pituitary-adrenal axis, the mechanism by which the body copes with stress, was also first described by Selye.
- Today it is usually summarized as the "fight or flight syndrome."

Stress

- The "fight or flight syndrome" is just as it sounds: the body is preparing to do something necessary for survival, preparing to fight or to run away.
- Very useful in the past and on occasion today.
- Much less useful today.
- Make everything life and death, you "die" a lot.

Stress

What happens if we are faced with stress that we cannot or should not fight or run away from? Think of an automobile where someone is stepping on the brake pedal and gas pedal at the same time. If you know nothing about how an automobile works you can still figure out that something bad is going to happen to that car…and to our bodies if we treat them the same way.



Litigation Stress

Professionals get sued all the time; why do health-care professionals seem to have such an extreme reaction?

- **Personality**
- **Training**
- **Injury**
- **System**

Litigation Stress

Most of the pioneering work on the subject of litigation stress was done by Sara C. Charles, M.D.

- Began her career at the University of Notre Dame College Mental Health Center
- 1972: Professor of Psychiatry and a practicing psychiatrist at the University of Illinois – Chicago
- 1976: Six-week malpractice trial; defense verdict
- Began litigation stress research
- 2005: Sara C. Charles, MD, Physician Litigation Stress Resource Center

Litigation Stress

Professionals get sued all the time; why do health-care professionals seem to have such an extreme reaction?

- **Personality**

  The type of individual who enters the medical or dental profession is not only highly intelligent and driven but tends towards self-criticism. In addition, these individuals tend to be highly **independent**. In times of distress this independence can lead to isolation.

Litigation Stress

Professionals get sued all the time; why do health-care professionals seem to have such an extreme reaction?

- **Training**

  The survival mentality critical to successfully navigating medical and dental school, residency and, in some cases, fellowship, reward the independent, the driven, the self-critical. Doctors are trained to question constantly, even when a diagnosis and treatment are going well. When something goes wrong…

Litigation Stress

Professionals get sued all the time; why do health-care professionals seem to have such an extreme reaction?

- **Training**

  The training a doctor receives leads to a practice that is normally stressful, but usually in equilibrium. However, with changes that have been going on in the U.S. health care system since 1980 doctors are feeling less in control over clinical decision-making than in the past.

Litigation Stress

Professionals get sued all the time; why do health-care professionals seem to have such an extreme reaction?

- **Injury**

  When diagnosis and treatment are going well, doctors are still questioning. When something goes wrong, the perfectionism and self-criticism of the doctor increases the normal stress, especially as someone has been injured. This does not happen with other professionals.

Litigation Stress

Professionals get sued all the time; why do health-care professionals seem to have such an extreme reaction?

- **Injury**

  In other words, if a doctor is sued for malpractice it is like an exclamation point at the end of a sentence or the proverbial straw that breaks the camel's back. The doctor has likely beaten him or herself up over what happened long before the claim or lawsuit shows up.

Litigation Stress

Professionals get sued all the time; why do health-care professionals seem to have such an extreme reaction?

- **System**

  In the tort system we currently have the most common way for an injured individual to be made whole, or as whole as possible, is through litigation. In litigation one person has to be right and one person has to be wrong.

Litigation Stress

Professionals get sued all the time; why do health-care professionals seem to have such an extreme reaction?

- **System**

  In a malpractice claim the patient is claiming the health care professional practiced bad medicine or dentistry, usually based on a **bad outcome**. Yet that outcome may have been the best possible outcome the patient could have expected.

Litigation Stress

Professionals get sued all the time; why do health-care professionals seem to have such an extreme reaction?

- **System**

  Add all of this up:
- A self-critical individual, the doctor,
- Who has had a bad outcome,
- Who is likely already questioning everything that was done, from the initial visit to the last patient encounter

Litigation Stress

Professionals get sued all the time; why do health-care professionals seem to have such an extreme reaction?

- **System**

  And who now has an attorney (and eventually a plaintiff's expert and maybe the defense expert or insurance company) telling him/her that bad medicine was practiced, that it hurt someone, and that the doctor must pay.

Litigation Stress

Professionals get sued all the time; why do health-care professionals seem to have such an extreme reaction?

- **System**

  And in very simple terms, the litigation process is nasty. Doctors got to where they are today because they are scientists and they would like a malpractice claim to be a scientific inquiry. It is not. It is usually a circus, a theatre, unless Alternative Dispute Resolution is used, but…

Litigation Stress

Professionals get sued all the time; why do health-care professionals seem to have such an extreme reaction?

- **System**
  Even if Alternative Dispute Resolution is used there will still be discovery before any mediation or arbitration, including a deposition, and the **deposition** is usually the nastiest part of the claim a doctor will have to deal with.

Litigation Stress

Professionals get sued all the time; why do health-care professionals seem to have such an extreme reaction?

- **System**
  In most states the claim process will follow a similar path:
- Service or Notice of Suit
- Discovery (Interrogatories and depositions)
- Settlement offers
- Alternative Dispute Resolution or Trial

Litigation Stress

What is the usual response to a claim of medical or dental malpractice?

- 95% of doctors have periods of extreme emotional distress during all or some portions of the litigation process.
- The distress may start with the bad outcome or it may start with the service of legal papers.
- The response will include, at various times, outrage, shock, dread, fear of reputation destruction, and fear over the financial impact.

Litigation Stress

What is the usual response to a claim of medical or dental malpractice?

- Feelings of intense anger, frustration, inner tension, and insomnia are frequent during the litigation process.
- 27%-39% of doctors report major depressive disorders
- 20%-53% report adjustment disorder
- 2%-15% report the onset or exacerbation of a physical illness.
- Less than 2% report drug or alcohol misuse

Litigation Stress

Why this extreme response?

- Go back to the characteristics of a doctor, the self-critical nature that leads to doubt when things are going well, the exaggerated sense of responsibility.
- In litigation fault must be established for compensation to be paid.
- Fault in a malpractice case is based on deviation from the standard of care, resulting in injury.
- Doctors bristle at the accusation that their care was “sub-standard.” It is an insult to their reputation, their honor.

Litigation Stress

Why this extreme response?

- A doctor looks at a claim of malpractice as a personal attack, whereas other professionals are able to look at it as a difference of opinion or the cost of doing business.
- Most people cherish their personal integrity and it is just that integrity that is under attack in a medical or dental malpractice claim, with the added challenge of a physical injury usually having occurred.

Litigation Stress

Other factors that come into play make each case unique:

- The doctor-patient relationship
- The nature and extent of the injury
- The publicity (or fear of it)
- The adversarial nature of litigation, which is foreign to how most doctors' work.

The above contribute to feelings of isolation, frustration, dependency, and in general disrupt the usual equilibrium of the physician.

Coping with Litigation Stress

It has been determined through multiple studies over the years that the greatest sources of distress results from a lack of control or feelings of **lack of control**. Therefore, for physicians to cope with litigation, to regain the equilibrium necessary to reduce the distress, steps need to be taken to gain as much **control** as possible over a situation where control must be ceded to others.

Coping with Litigation Stress

Each of the following items is designed to help the doctor either gain control, gain a feeling of control, or not let the lack of control consume him/her (treat the symptoms).

Coping with Litigation Stress

1. Gain as much knowledge about the litigation process as possible. Do this through the attorney assigned to your case by your insurance company, or through the claims manager managing the claim for your insurance company, in order to maintain privilege.

Coping with Litigation Stress

2. Treat the symptoms. This is true for anyone dealing with stress, litigation or otherwise. When having a physical reaction, exercise eats up the juices of stress and work better over the long-term than medication, but medication may be necessary.

The Body Keeps the Score

Coping with Litigation Stress

3. Get a personal physician, if you do not have one. Get treatment for any persistent symptoms, such as a physical illness, depression, substance abuse, or the like. Do NOT self-diagnose or self-prescribe.

Coping with Litigation Stress

4. Make family important and a part of the process, and get help if needed to maintain strong family ties. A physician's wife once stated that she "lost" her husband for two years when he was sued for malpractice, that he was distant, unavailable, and "locked up inside of himself."

Unable to be present
Mindfulness

Coping with Litigation Stress

5. The quicker steps are taken, the less chance there is for better coping. If coping mechanisms are not put in place rapidly it can lead to additional malpractice claims (statistics have shown that claims do happen in clusters), along with loss of family and friends. In addition, if the equilibrium is too disrupted the doctor may become a hazard to the practice and to patients.

Coping with Litigation Stress

6. Social support can come from many sources. Most medical malpractice insurance companies have physician support programs today. These exist for two primary reasons, better defense and reduced chance of additional claims. Your attorney will tell you to not discuss the case and this is good LEGAL advice but not good psychological advice. You can discuss many aspects of what you are going through without discussing the clinical details of the case.

Coping with Litigation Stress

7. Take steps to restore life-work balance. Most doctors tend towards workaholism. The litigation process is uneven: one week you will feel strong and confident, the next week you may be plagued by doubts and low self-esteem. By engaging in activities that even out your life and over which you have some control ("treat the symptoms") you will feel more in control of both your personal and professional lives.

Coping with Litigation Stress

8. Actively participate in your defense. Every call to an attorney costs money, **but it is not your money**; that is why you have malpractice insurance.

Coping with Litigation Stress

9. Change the perception of the event.

- Other professionals are able to take a more unemotional view because they see this as being about business, not personal.
- It is difficult, if not impossible, for physicians to not take a patient injury personally.
- View the litigation process separately from the medical event, understand that the litigation process is just about money, and you may be able to change your perception of the event and reduce your emotional imbalance.

What has changed?

- If stress is the body reacting to the mind sensing a "fight or flight" situation, and…
- …if "fight or flight" usually indicates a loss of control or feelings of not being in control…
- …what has changed?

What has changed?

- **Fewer independent practices**
- **Movement to malpractice insurance being a line item on the profit and loss sheet**
- **Loss of consent-to-settle**
- **EMR-driven practice protocols**
- **Less time with patients**
- **Fewer "normal patients"**
- **Less "laying on of hands"**

Loss of Control

Conclusion

- Stress is simply responding to the world around you.
- Distress is an ongoing negative reaction that triggers the "fight or flight" mechanism.
- Distress is usually related to something either outside of our **control** or perceived as being outside of our **control**.
- Treat stress by treating the symptoms.
- Work to change the perception of the event.
- Take steps to gain as much control as possible.

Conclusion

- Litigation stress is a strong, sometimes crippling reaction to a medical/dental malpractice claim.
- Other professionals are able to take a more unemotional view because they see this as being about business, not personal.
- Treat the symptoms.
- Failure to deal adequately with litigation stress can result in a doctor being a bad witness on his or her own behalf, alter behavior that leads to additional claims, damage or destroy personal relationships, and even end a career.

Conclusion

A doctor should access every resource available to help deal with the stress of litigation, to include:

- Malpractice insurance company
- Local medical society
- Professional help
- Exercise
- Meditation, yoga, and/or neuromuscular relaxation
- Gain knowledge about the litigation process
- Include family

SELF EVALUATION

Understanding Insurance Gaps and Managing Litigation Stress

1. Cybercrime involves unlawful acts where a computer is either a tool, a target, or both and includes such acts as:

a. Intellectual property theft.
b. Theft of information.
c. Ransomware attacks.
d. All of the above.

2. Long-term disability insurance:

a. Is income protection.
b. Should have an Any Occupation definition of disability.
c. Will replace 100% of pre-disability income.
d. Only covers catastrophic injuries.

3. The General Adaption Syndrome developed by Hans Selye:

a. Is a physical response to a perceived threat.
b. Occurs when one has control of a situation.
c. Is a very useful response today.
d. All of the above.

4. T/F – Having a gap in insurance can only hurt you professionally, not personally.

5. Distress can be described as:

a. Responding appropriately to the world around you.
b. Having a positive response to an upcoming event.
c. Having an extreme physical and emotional response.
d. An event that causes a stress response.

Answer Key: 1. D, 2. A, 3. A, 4. F, 5. C

TOM VIOLA
PHARMACOLOGY DECLASSIFIED

Cannabis and the Dental Practice

Thomas A. Viola, RPh, CCP, CDE, CPMP

Disclaimer and Copyright

Participants in this activity have an implied responsibility to use all available information to enhance patient outcomes and their own professional development and judgement. Optimal use of medications changes rapidly with time. The content presented in this activity is not intended as a substitute for the participant's own research, or for the participant's own professional judgement or advice for a specific problem or situation.

Conclusions drawn by participants should be derived from objective analysis of all scientific data and not necessarily from the content of this activity. This activity and its content are not intended to, nor should they be considered to be, rendering medical, dental, clinical, pharmaceutical, or other professional advice. The content of this activity should be used in conjunction with timely and appropriate medical consultation.

 1

Disclaimer and Copyright

No representations or guarantee of the accuracy, timeliness, or applicability of the content of this activity can be made or is made. The author of this activity specifically disclaims applicability of any of the content presented to any given clinical situation, due to the high degree of variability among patients. Participants assume all risks and responsibilities with respect to any decisions or advice made or given as a result of the use of the content of this activity.

No part of this activity may be reproduced, stored in a retrieval system, distributed, or transmitted in any form, or by any means, electronic, mechanical, photocopying, recording, scanning, or otherwise without the express, written prior approval of the author. Compliance will be determined with all available technology.

All violations will be litigated to the fullest extent possible.

 2

Program Learning Objectives

Upon successful completion of this program, participants should be able to:

- Discuss the history of and various types of cannabis, as well as its current legal status available formulations and proposed uses in dentistry.
- Describe the pharmacology of cannabis, including its mechanism of action, routes of administration, adverse reactions, drug interactions and contraindications.

 3

Program Learning Objectives

Upon successful completion of this program, participants should be able to:

- Identify the pharmacologic effects of cannabis on major organ systems.
- Explore the dental considerations of cannabis, including effects on dental treatment, potential treatment modifications, and patient care planning.

 4

Controlled Substances

The Controlled Substances Act of 1970 empowered the DEA to regulate the manufacture and distribution of substances with abuse potential.

- Termed "controlled substances", these substances can only be prescribed and dispensed when there is a currently accepted medical use.
- Substances are placed in assigned "schedules" based on abuse potential and accepted uses.

 5

Controlled Substances

- Schedule I
  - Highest potential for abuse
  - Not considered safe for use
  - No accepted medical indication in the U.S.
    - Illegal to possess (on the federal level)
  - Types
    - Heroin
    - LSD
    - Marijuana

 6

What Exactly is Cannabis?

 7

The Growing Pains …and Strains… of Cannabis

 8

Cannabis

- Strains
  - There are three "naturally-occurring strains" of cannabis:
    - *C. sativa*
      - Often described as "high-THC"
    - *C. indica*
      - Often described as "mixed THC-CBD"
    - C. *ruderalis*
      - Often described as "high-CBD"

 9

Types of Cannabis

- Hybrids
  - There has been much cross-breeding, in-breeding and blending of strains to produce hybrids
  - Thus, strain "names" have essentially become meaningless

 10

Types of Cannabis

- Hemp
  - Cannabis plant of the sativa species
  - THC content less than 0.3%
  - Grown for its seed and fiber
  - Used commercially to make
    - Canvas
    - Biofuel
    - CBD (cannabidiol)

 11

What is "THC"? What is "CBD"?

 12

Cannabinoids

 13

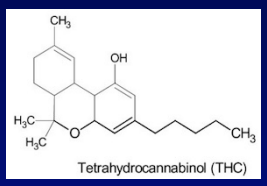
Cannabis Active Compounds

- Phytocannabinoids
  - Cannabis contains over 500 compounds and 66 known cannabinoids
    - Major cannabinoids
      - Tetrahydrocannabinol (THC)
      - Cannabidiol (CBD)
    - Minor cannabinoids
      - Cannabinol (CBN)
      - Cannabigerol (CBG)
      - Cannabichromene (CBC)

 14

Cannabis Active Compounds

- THC
  - Pain Relief
  - Anxiety Relief
  - Euphoria
  - Physical relaxation
    - "Couch-Lock"

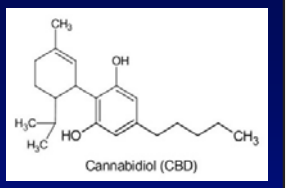


Tetrahydrocannabinol (THC)

 15

Cannabis Active Compounds

- CBD
  - Pain relief
  - Decreased nausea
  - Anxiety relief



Cannabidiol (CBD)

 16

Cannabis Active Compounds

- Phytocannabinoids
  - Cannabis contains over 500 compounds and 66 known cannabinoids
    - Major cannabinoids
      - Tetrahydrocannabinol (THC)
      - Cannabidiol (CBD)
    - Minor cannabinoids
      - Cannabinol (CBN)
      - Cannabigerol (CBG)
      - Cannabichromene (CBC)

 17

Cannabis Active Compounds

- Cannabinol (CBN)
  - Considered to be a "weaker" version of THC
    - THC components found in the cannabis plant break down and form CBN
    - About 25% as "effective" as THC
- Cannabigerol (CBG)
  - Considered to be the precursor to other cannabinoids.
    - CBG-A, the acidic form of CBG, breaks down to form CBG, CBD, THC, and CBC

 18

Cannabis Active Compounds

- Cannabichromene (CBC)
  - One of the most abundant phytocannabinoids
    - Considered to be nearly 10 times as effective as CBD for relieving pain, anxiety and inflammation
    - Non-psychotropic phytocannabinoid that inhibits endocannabinoid inactivation and activates the transient receptor potential ankyrin-1 (TRPA1)
      - May modulate gastrointestinal motility

 19

What is a “Terpene”?

 20

Cannabis Active Compounds

- Terpenoids (terpenes)
  - In addition to cannabinoids, cannabis also contains terpenoids
    - Organic compounds found in plants:
      - Beta-caryophyllene (cloves, hops)
      - Limonene (lemons, oranges)
      - Linalool (lavender, jasmine, rosewood)
      - Myrcene (eucalyptus, lemongrass)
      - Pinene (pinecones)

 21

But How Does Cannabis Actually Work?

 22

Endocannabinoids

- Endogenous cannabinoids
  - Synthesized by the body
    - Anandamide (AEA)
    - 2-arachidonoylglycerol (2-AG)
  - Metabolites of arachidonic acid
    - Proposed link with the prostaglandin system

 23

Endocannabinoids

- Mechanism of Action
  - Cannabis works in the endocannabinoid system
    - Two receptors govern this system
      - CB1 Receptors
        - Primarily found in the CNS
          - Euphoria
          - Appetite stimulation
          - Decreased perception of pain
          - Memory disturbances
          - Impaired motor function
          - Slowed cognition

 24

Endocannabinoids

- Mechanism of Action
  - Cannabis works in the endocannabinoid system
    - Two receptors govern this system
      - CB2 Receptors
        - Found in the GI
          - CHS
        - Found in the immune system
          - Modulate immunity
          - Modulate inflammation

 25

Why Are There So Many Different Kinds of Cannabis?

 26

The Anatomy of the Cannabis Plant

 27

The Anatomy of the Cannabis Plant

- The Leaf
  - Allows for identification of strains
  - Allows for photosynthesis and plant growth
  - Does not produce the majority of the actives

 28

The Anatomy of the Cannabis Plant

- The Cola
  - Actives are isolated from flowers of female plants
  - The flower is then dried to produce “buds”
  - Male plants pollinate female plants

 29

The Anatomy of the Cannabis Plant

- Trichomes
  - Tiny hair-like projections on the flowers and leaves
  - Used to differentiate each strain of cannabis
  - Contain hundreds of cannabinoids, terpenes
    - Terpenes are essential oils found in the cannabis plant and other plants

 30

Why Are There So Many Different Routes of Administration?

 31

Routes of Administration

- Oral
  - Edibles, tinctures, oils
  - Advantages
    - Delayed onset, longer duration of action
  - Disadvantages
    - Inconsistent bioavailability
    - Extensive first-pass metabolism
    - Greater potential for overdose

 32

Routes of Administration

- Sublingual/Buccal
  - Sprays, strips, oils
  - Gums, lozenges, mints, toothpicks
  - Advantages
    - Immediate onset, shorter duration of action
  - Disadvantages
    - Adverse effects on oral mucosa from consistent exposure

 33

Routes of Administration

- Smoking (combustion)
  - Plant material
    - Joints, blunts, pipes
  - Advantages
    - Simple and effective
  - Disadvantages
    - Inhalation of combustion products
    - More than 2000 compounds are produced during smoking with mostly unknown effects

 34

Routes of Administration

- Water pipes
  - Plant material (bongs, hookah)
  - Advantages
    - Removes toxins in smoke
  - Disadvantages
    - Doesn't remove particulates
    - Might remove THC

 35

Routes of Administration

- Vaping/Dabbing
  - Concentrates, resins (chips, oils, budders)
  - Advantages
    - More efficient delivery of actives
    - Target temperature of specific cannabinoids
    - No odor
  - Disadvantages
    - Need special equipment
    - Presence of residual solvents

 36

Routes of Administration

- Oral Inhalers
- Topicals
  - Creams, ointments, balms, lotions, patches
  - Eye drops
- Suppositories
  - Vaginal, rectal
- Tampons

 37

Is There Any Evidence of Cannabis' Therapeutic Efficacy?

 38

"*The Health Effects of Cannabis and Cannabinoids*"
- National Academies of Sciences, 2017

National Academies of Sciences, Engineering, and Medicine. 2017. The Health Effects of Cannabis and Cannabinoids: The Current State of Evidence and Recommendations for Research. Washington, DC: The National Academies Press. https://doi.org/10.17226/24625.

 39

Is There Any Evidence of Efficacy?

The committee creating this National Academy report was tasked with conducting a comprehensive review of the current evidence of the health effects of cannabis.

- The strongest evidence was in reducing nausea and vomiting, treating pain, and relieving subjective spasticity associated with multiple sclerosis.
- A lower level of confidence supported efficacy for improving short term sleep outcomes.

 40

So Why Does It Seem That *Everyone* Uses Cannabis?

 41

Cannabis' Purported Uses

- Treatment of symptoms of:
  - ALS
  - Alzheimer's disease
  - Arthritis
  - Cachexia
  - Cancer
  - Crohn's disease
  - Irritable Bowel Syndrome (IBS)
  - Epilepsy/seizures
  - Glaucoma
  - Hepatitis C

 42

Cannabis' Purported Uses

- Treatment of symptoms of:
  - HIV/AIDS
  - Nausea
  - Neuropathies
  - Pain
  - Parkinson's disease
  - Persistent muscle spasms (including MS)
  - PTSD
  - Sickle cell disease
  - Terminal illness

 43

Cannabis' Purported Uses

- Opioid Use Disorder
  - Allows for the use of medical cannabis as an adjunct to Medication Assisted Treatment (MAT).
  - For all patients that suffer from opioid dependence and addiction, not only those with chronic pain.

 44

Self-Medicating With Cannabis

 45

Self-Medicating with Cannabis

Many youths said they used cannabis as a coping strategy and thought cannabis could relieve a variety of conditions.

- Some of the more common reasons for self-medication with cannabis include:
  - chronic pain
  - anxiety
  - depression
  - sleep problems

 46

Self-Medicating with Cannabis

Self-medicating with cannabis can be complicated and difficult to determine the actual dosage.

- Different cannabis products contain different levels of these cannabinoids.
- The amount of each cannabinoid consumed and the way it is consumed produces different effects.

 47

Self-Medicating with Cannabis

Cannabis may interact with medications, exacerbate medical conditions and may not be the best treatment option.

- Managing symptoms without medical advice may lead to undiagnosed health problems which could lead to greater harm.

 48

Adverse Reactions

 49

Adverse Reactions

- Neurological and behavioral effects
  - Immediate effects
    - Cognitive and psychomotor impairment.
  - Chronic effects
    - Addiction
    - Disruption of brain development
    - Psychotic disorders

Source: ADA Oral Health Topics, Cannabis: Oral Health Effects (9/21)
https://www.ada.org/resources/research/science-and-research-institute/oral-health-topics/cannabis-oral-health-effects)

 50

Adverse Reactions

- Immediate cardiovascular effects
  - Tachycardia
  - Hypertension
  - Myocardial Infarction
- Immunosuppressive effects
  - Increased risk of opportunistic infection

Source: ADA Oral Health Topics, Cannabis: Oral Health Effects (9/21)
https://www.ada.org/resources/research/science-and-research-institute/oral-health-topics/cannabis-oral-health-effects)

 51

Drug Interactions

 52

Drug Interactions

- Additive Adverse Effects
  - Sympathomimetics (epinephrine)
  - CNS depressants (benzodiazepines)
  - Serotonergics (SSRI's, tramadol)
  - Analgesics (opioids)

 53

Cannabis Dental Considerations And Treatment Planning

 54

Cannabis Dental Considerations

- Use of cannabis has been associated with:
  - Poor quality of oral health
    - –Frequently complicated by associated factors
      - –High tobacco, alcohol, and other drug use
      - –Poor oral hygiene practices
    - –Use of cannabis causes xerostomia
    - –Use of cannabis causes appetite stimulation and consumption of cariogenic snack foods

Source: ADA Oral Health Topics, Cannabis: Oral Health Effects (9/21)
https://www.ada.org/resources/research/science-and-research-institute/oral-health-topics/cannabis-oral-health-effects)

 55

Cannabis Dental Considerations

- Use of cannabis has been associated with:
  - Poor quality of oral health (continued)
    - –Use of cannabis is associated with similar oral pathologies as tobacco smoking including leukoedema
    - –Use of cannabis (especially vaping) is associated with gingival enlargement, erythroplakia, chronic inflammation of the oral mucosa with hyperkeratosis and leukoplakia

Source: ADA Oral Health Topics, Cannabis: Oral Health Effects (9/21)
https://www.ada.org/resources/research/science-and-research-institute/oral-health-topics/cannabis-oral-health-effects)

 56

Cannabis Dental Considerations

- Use of cannabis has been associated with:
  - Increased risk of cancer
    - –Synergistic effects between tobacco and cannabis smoke may increase oral and neck cancer risk for people who smoke both
    - –Immunosuppressive effects of cannabis, especially in association with oral papillomavirus, may contribute to these increased risks of cancer

Source: ADA Oral Health Topics, Cannabis: Oral Health Effects (9/21)
https://www.ada.org/resources/research/science-and-research-institute/oral-health-topics/cannabis-oral-health-effects)

 57

Cannabis Dental Considerations

- Use of cannabis presents several clinical challenges for the dental practitioner:
  - –Increased anxiety, paranoia and hyperactivity may heighten the stress experience of a dental visit
  - –May lead to unexpected, inappropriate behavior

Source: ADA Oral Health Topics, Cannabis: Oral Health Effects (9/21)
https://www.ada.org/resources/research/science-and-research-institute/oral-health-topics/cannabis-oral-health-effects)

 58

Cannabis Dental Considerations

- Use of cannabis presents several clinical challenges for the dental practitioner:
  - –Numerous reports have indicated that patients who are heavy cannabis users are more difficult to anesthetize with local anesthesics
  - –Increased heart rate and other cardiorespiratory effects of cannabis make the use of epinephrine potentially life-threatening

 59

Cannabis Dental Considerations

- Use of cannabis presents several clinical challenges for the dental practitioner:
  - –Numerous reports have indicated that patients who are heavy cannabis users are more difficult to sedate and to keep sedated*
  - –Many clinicians have reported combative behavior requiring physically restraining patients

*Addamo, Paul, et al. "Marijuana's Effect on Dosage Requirements During Sedation in Oral and Maxillofacial Surgery." Journal of Oral and Maxillofacial Surgery 81:9 (2023): S66-S67
vs.
*Daniel Ripperger et al. "Cannabis Users Require More Anesthetic Agents for General Anesthesia in Ambulatory OMS Procedures." Journal of Oral and Maxillofacial Surgery. 13 September 2023.

 60

Cannabis Dental Considerations

- Use of cannabis presents several ethical challenges for the dental practitioner
  - "Intoxicated users" and informed consent
  - "Impaired" practitioners and potential malpractice

61

TOM VIOLA
PHARMACOLOGY DECLASSIFIED
www.tomviola.com
www.facebook.com/pharmacologydeclassified
www.instagram.com/pharmacologydeclassified

SELF EVALUATION

Cannabis and the Dental Practice

1. Potential adverse effects of cannabis include which of the following?

a. tachycardia
b. mycocardial infarction
c. stroke
d. hypertension
e. all of the above

2. As a result of recent changes in legislation across 33 states, cannabis is now designated as a:

a. Schedule I controlled substance
b. Schedule II controlled substance
c. Schedule III controlled substance
d. Schedule IV controlled substance
e. Schedule V controlled substance

3. T/F - CB1 receptors are found primarily in CNS.

4. Which of the following is a qualifying condition for the use of medical marijuana in some states?

a. Alzheimer's Disease
b. Cachexia
c. Cancer
d. Parkinson's Disease
e. All of the above

5. Which of the following is a terpene found in cannabis plants?

a. Beta-caryophyllene
b. Limonene
c. Linalool
d. Myrcene
e. All of the above

Answer Key: 1. E, 2. A, 3. T, 4. E, 5. E

Eric J. Ploumis, DMD, JD
453 Second Avenue
New York, NY 10010
EPloumis@DentalPracticeLawyers.com

Buying or Selling a Dental Practice: Legal and Practical Issues

Why am I Speaking to You Today?

- To explore legal issues in a transition from both the buyer's and seller's perspective
- To answer some of your questions about the legal issues of a practice transition

1

Objective

This presentation is designed to give both buyers and sellers a brief overview of some of the legal issues to consider when transitioning into or out of a dental practice.

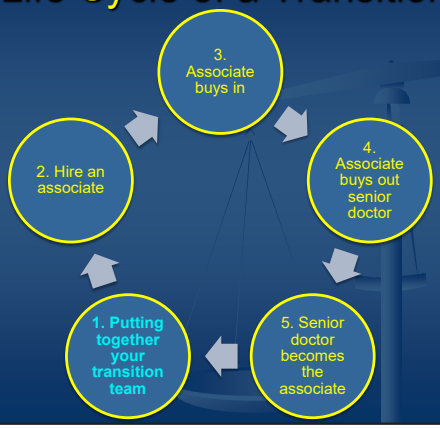
2

Objective

We will review the legal documents your transition might require.

3

Life Cycle of a Transition



4

Do you really need an associate?

- Excessive patient load
- Desire to reduce workload
- Transition imminent

5

Why you don't need an associate

- Professional companionship
- Expectation of growth
- Desire to keep all procedures "in house"
- Locked-in buyer
- Better utilization of overhead

6

Associates, you have two functions in the office:

- Make your employer's life easier
- Make money for your employer

7

Seller's Transition Team	Buyer's Transition Team
Accountant	Accountant
Attorney	Attorney
Financial Planner	Finance Source
Practice Broker	Practice Broker
Transition Consultant	Transition Consultant
Spouse	Insurance Broker
	Spouse

8

Attorney's Role

- Evaluates: legal issues, employment issues, legal structure of practice, documents
- advisor
- negotiator
- document drafter
- document reviewer

9

Legal Considerations

Things to consider and have in place when contemplating a transition . . .

10

Seller's Entity Status

- "C" or "S" corporation?
- If a "C" corp, consider switching to "S" status prior to transition.
- "C" corp makes a transition more difficult due to tax consequences for both parties

11

Seller's Employment by Corporation

- If you are a C corp and have an employment contract with your corporation, "resign" from corporation at least a year prior to sale.
- This will help ensure the goodwill value is personal to you and not a corporate asset.

12

Buyer's Entity Status

In conjunction with your accountant, choose the appropriate entity:

- Sole Proprietor
- Professional Corporation (s-corp election)
- Professional Limited Liability Company

13

Lease Issues: Buyer and Seller

- Pay careful attention to your lease years in advance. Negotiate hard.
- Put your lease where you can find it.
- READ THE LEASE
- You must have at least five to seven years left on your lease when you are ready to sell. Buyer cannot get financing without a lease of this duration.

14

Lease Issues

- Never assume the landlord will cooperate even if he is your patient, friend or brother
- Make absolutely sure you can assign and sublet to your buyer. Key words in lease are "such consent shall not be unreasonably withheld, conditioned or delayed."
- Practice purchase agreement must have a lease contingency

15

Lease Issues

- Seller: do not assign your lease unless you close
- Buyer: do not close unless the lease is assigned to you.
- Buyer: if office is owned by seller, get an exclusive even if you vacate the space

16

Lease Zingers

- right of landlord to recapture space
- large assignment commission to landlord
- unobtainable standards for assignment
- "time is of the essence" clauses
- costly holdover rates
- failure to get an exclusive for dental office
- failure of landlord to release seller

17

Lease to Own

- fair market value rent
- fair market value purchase price
- right of first refusal vs. option to purchase

Seller: Restrictive Covenants

- Make sure all associates have employment contracts with restrictive covenants
- Never hire an associate with the idea you will prepare a contract later
- Lack of restrictive covenant will hurt practice marketability

19

Buyer: Restrictive Covenants

- Restrictive covenants are enforceable: don't sign one if you don't intend to adhere to it.
- Be careful about a "bait and switch" restrictive covenant.
- You will be asked to sign a restrictive covenant: look for creative solutions to difficult issues.

20

Financial Policy, Accounts Receivable

- Tighten up your financial policies at least a year in advance.
- Make an effort to collect your accounts receivable at least six months in advance. This may be money left on the table after the transition.
- Buyer does not want to collect your a/r. Once you sell, you will not be in a strong position to collect them yourself.

21

Practice Liens and Loans

- Review and begin to pay off any outstanding debt on practice.
- Do not enter into any long-term leases or contracts. The buyer may not want to assume these, and you may have to absorb them.
  - examples include: yellow page ad, digital x-ray/cbct, postage meter, water cooler, laundry service, sharps pick-up, alarm system, software maintenance.

22

Practice Statistics: Charts and Computer Entries

- Be diligent about entering computer stats
- Inaccurate stats present an incomplete picture of the practice.
- Improve your charting. Take progress records.
- Buyer will do a chart audit. Do not be offended or defensive. Neat charts improve value and buyer confidence.

23

Pre-Sale Patient Management and Care

- Start treatment on any patient who is ready to begin.
- Increase your initial fee and make sure patients adhere to your fee schedule.
- Avoid excessive prepayments and excessive use of third-party financing.
- Avoid a last minute "fire sale" on treatment. Buyer's can spot that and will look unfavorably on it.

24

Tax Returns/Financial Data

- Clean up your books.
- Slow down on the personal deductions to show more income.
- Report cash in the unlikely event you haven't been.
- Have tax returns and P&L ready for buyer.
- Work with your accountant to have all the financial data ready for buyer.

25

Post-Transition Employment

- Does seller want to work for buyer?
- Does buyer want to employ seller?
- If yes, how much and in what capacity? As an independent contractor or an employee?
- Will Seller close P.C. or have P.C. work for buyer?
- Seller: how you treat buyer will be how buyer will treat you.

26

Personal and Financial Issues/ Seller

- Can I afford to retire?
- Am I burned out?
- Do I have something else I would rather be doing?
- Is my spouse on-board with the sale? (For better or worse, but not for lunch.)

27

Personal and Financial Issues/ Buyer

Know seller's answers to the previous questions and ask yourself:

- Can I afford this practice?
- Do I need to work somewhere else?
- Am I ready to run a practice?
- Is my spouse as excited as I am?

28

Tax Issues in a Transition

There are three parties to every transition:

- Seller
- Buyer
- IRS

29

Tax Issues in a Transition

- goodwill
- accounts receivable, contracts receivable
- restrictive covenants
- fixed (tangible) assets
- supplies and instruments
- leasehold improvements
- stock transfer

30

Goodwill

- best for seller
  - buyer: straight-line 15-year amortization
  - seller:
    - capital gain for unincorporated, S-corp, LLC
    - double tax if C corp
      - 35% corp tax plus personal income tax rate

31

Restrictive Covenants

- allocation unfavorable to both parties
  - buyer: straight-line 15-year amortization
  - seller: ordinary income

(If restrictive covenants are merged into goodwill, capital gains treatment is possible.)

32

Fixed (Tangible) Assets

- dental and office equipment, furniture, fixtures
- good for buyer
  - buyer: depreciates annually according to schedule, 5 – 7 years
    - Section 179 (ask your accountant)
    - buyer may pay sales tax on value of assets
  - seller: ordinary income

33

Supplies and Instruments

- great for buyer
  - buyer:
    - immediately deductible
    - no sales tax
  - seller: ordinary income

34

Leasehold Improvements

- so-so for buyer
- up to 39 years to depreciate
  (cost segregation analysis may speed this up)

35

Allocation of Purchase Price

- Make sure you can support the allocations in your agreements
- Get your accountant involved

Stock Sale

- Great for seller, terrible for buyer.
- Buyer: no deduction, becomes "basis"
- Buyer: inherits all of corporation's liabilities
- Seller: capital gain above basis

37

Fractional (Stock) Buy-In

- Limited value assigned to stock in a fractional buy-in to reduce unfavorable tax outcome to purchaser (depreciated value of assets)
- Income shift, buyer to seller
  - offset (increase) in purchase price
- Personal goodwill of seller
- May be the only way to buy in to a group practice

38

Psychological Issues

- Seller's Concerns
- Buyer's Concerns

39

Seller

- Your practice is probably not worth 1x gross despite how great you feel it is
- You probably aren't worth $2,000/day despite how great you think you are
- Don't stay too long, sell while your practice still has real value
- Even though you just "hung out a shingle" and did well, it is a different environment today.
- Are you sure you can live on what you have left?

40

Buyer

- Seller's practice is worth more than 25% of gross despite how antiquated you feel the physical plant is
- Somehow, seller managed to make a great living with that dowdy old office
- You probably aren't worth $2,000/day despite how great you think you are
- It will take you a year or two to realize you don't know everything
- Are you sure you can live on what you have left?

41

Inter-family Transitions

- every parent's dream
- fraught with emotion
- dependent upon having a large practice
- challenging with divorced families
- complex tax issues

You are ready to move ahead.

What documents will you need?

Formal Document Drafting

- asset, stock , or interest purchase agreement
- new lease or lease assignment and assumption
- employment agreement for seller
- consulting agreement for seller
- deferred compensation agreement for seller
- stock purchase agreement
- stock pledge agreement
- goodwill assignment agreement
- restrictive covenants
- partnership agreements/ partnership dissolution agreements
- promissory note
- bill of sale
- security agreement
- escrow agreement
- lien search/title search

44

Formal Document Drafting

- letter of intent
- parties negotiate issues
- formal documents are drawn up, usually by seller's attorney
- documents can be drawn up by broker, consultant or buyer's attorney
- other attorney reviews and comments

45

Disclaimer

This information is not intended at a substitute for legal advice. You should familiarize yourself with the laws of your local jurisdiction and seek legal advice from a local attorney who specializes in such matters.

46

SELF EVALUATION

Buying or Selling a Dental Practice: Legal and Practical Issues

1. The seller's transition team should include:

a. Accountant
b. Attorney
c. Spouse
d. All of the above

2. In most cases a seller should have a lease with at least:

a. One year left on the term
b. Five years left of the term
c. The length of the time remaining isn't important
d. It is up to the parties to negotiate the remaining term

3. T/F - A seller should have a written employment agreement that contains restrictive covenants for all associates.

4. Seller's goodwill offers favorable tax treatment. How many years to amortize the goodwill asset?

a. One year
b. Five years
c. Ten years
d. Fifteen years

5. T/F - Buyer and seller should try to use one mutually-agreed-upon attorney when they transition a practice.

Answer Key: 1. D, 2. B, 3. T, 4. D, 5. F

SUCCESS VS FAILURE

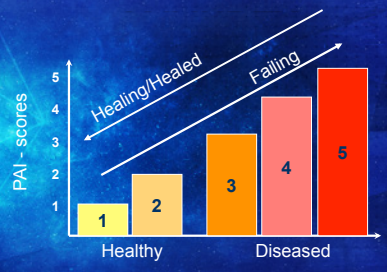
FUNCTIONAL SUCCESS

TREATMENT OUTCOME IN ENDODONTICS: THE TORONTO STUDY

PROSPECTIVE STUDY
2003–2008

Friedman et. al, March, 2008

PAI INDEX



RESULTS

- 86% of teeth healed according to strict criteria
- 95% of teeth remained asymptomatic and functional
- Absence of apical periodontitis is significant predictor of better outcome
- Root filling technique, warm vertical condensation suggests higher success

ENDODONTIC TREATMENT OUTCOMES

1,462,288 TEETH FOLLOWED FOR 8 YEARS

Salehrabi R, Rotstein I. J. Endo. 2004

97% SURVIVAL

85% OF TEETH EXO'D DID NOT HAVE FULL COVERAGE

TREATMENT PLANNING DECISIONS

IMPLANT VS ENDODONTICS

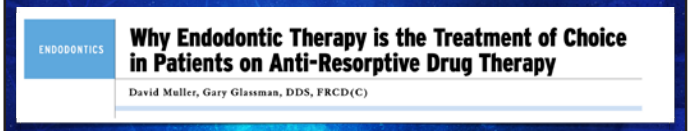
TX PLAN PHILOSOPHY

1. Tooth Variables
2. Implant Variables
3. Patient Variables

(perio, rest, endo status)
(site, bone quality/quantity)
(systemic health, economics, compliance and motivation)

MANAGING THE CARE OF PATIENTS WITH BISPHOSPHONATE ASSOCIATED OSTEONECROSIS

An American Academy of Oral Medicine Position Paper
J Am Denmt Asspocic. 2005 Dec; 136(12):1658-1668



Oral Health Journal May Endodontic Issue 2024
www.oralhealthgroup.com

INDICATIONS FOR USE

1. Osteoporosis
2. Certain Cancers
3. Pagets Disease

(post menopausal women)
(metastatic skeletal lesions and resorptive defects, breast, lung, prostrate, multiple myeloma)

INHIBITS OSTEOCLASTIC ACTIVITY THEREBY REDUCING BONE REMODELING AND TURNOVER

OSTEONECROSIS

Interruption and compromise of the blood supply

GUIDELINES

- ✓ Exo teeth with poor prognosis prior to BP therapy
- ✓ Complete all dental procedures before BP therapy
- ✓ Endodontic tx is preferred over tooth extraction
- ✓ Elective tx such as implants should be avoided
- ✓ Asymptomatic pts on Oral BP therapy <3 yrs
  - ✓ no alteration or delay in planned surgery
- ✓ Asymptomatic pts on Oral BP therapy >3 yrs
  - ✓ Stop meds 3 months prior to surgery and 3 months after surgery...."Drug Holiday"
- ✓ Pts on IV BP therapy...direct osseous surgery should be avoided!!

IMPLANT VS ENDODONTICS

Retrospective Cross Sectional Comparison of Initial Nonsurgical Endodontic Treatment and Single-Tooth Implants

Doyle et al. J. Endo. Sept. 2006

196 IMPLANT RESTORATIONS VS 196 MATCHED INITIAL NSRCT

PURPOSE

To compare retrospectively the outcomes of single tooth implant restorations with matched teeth receiving initial NSRCT and restorations

FOUR POSSIBLE OUTCOMES

1. Success
2. **Survival**
3. Survival with subsequent treatment intervention
4. **Failure**

SUCCESS–IMPLANTS

-Functional
-no peri-implant radiolucency
-no mobility

SURVIVAL–IMPLANTS

Present in mouth with subsequent
post tx intervention
or adjunctive procedures

SUCCESS–ENDODONTICS

No presence of
Apical Periodontitis
Radiographic or clinical
PAI < 2 (1-5)

SURVIVAL–ENDODONTICS

-Present in mouth
-uncertain healing
-evidence of healing
-post tx intervention

FAILURE

Extraction or planned for extraction

OUTCOME	IMPLANT	ENDO
SUCCESS	73.5%	82.1%
SURVIVAL NO TX INTERVENTION	2.6%	8.2%
SURVIVAL WITH TX INTERVENTION	17.9%	3.6%
FAILURE	6.1%	6.1%

"...RESTORED ENDODONTICALLY TREATED TEETH AND SINGLE-TOOTH IMPLANT RESTORATIONS HAVE SIMILAR FAILURE RATES..."

"...THE IMPLANT GROUP SHOWED A LONGER AVERAGE AND MEDIAN TIME TO FUNCTION..."

"...IMPLANT GROUP HAD HIGHER INCIDENCE OF POST OP COMPLICATIONS REQUIRING SUBSEQUENT TX INTERVENTION..."

STATE OF THE SCIENCE ON IMPLANT DENTISTRY SYMPOSIUM

A REVIEW OF FACTORS INFLUENCING TREATMENT PLANNING DECISIONS OF SINGLE-TOOTH IMPLANTS VS PRESERVING NATURAL TEETH WITH NONSURGICAL ENDODONTIC THERAPY

Mian K. Iqbal, BDS, DMD, MS, and Syngcuk Kim, DDS, PhD

JOE Volume 34, Number 5, May 2008

METHODS

- A meta-analysis of existing literature was carried out to determine the survival rates of the specific treatment

METHODS

- 55 studies related to single tooth implants and 13 studies related to restored root canal treated teeth were included

METHODS

- The endpoint analyzed in these studies was the survival rate of these two treatment modalities

RESULTS

- ...no significant differences in survival between restored root canal treated teeth and single tooth implants

CONCLUSION

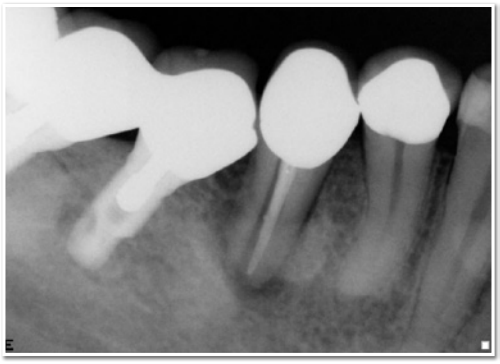
- decision to treat a tooth endodontically or replace it with an implant must be based on factors other than the treatment outcomes of the procedures themselves...

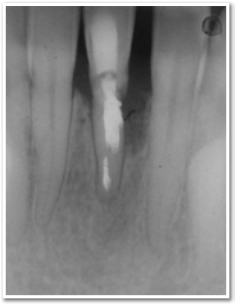
CONCLUSION

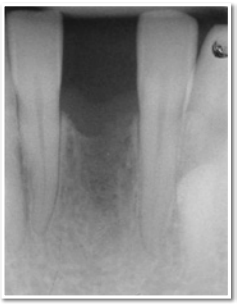
"...both NSRCT followed by an appropriate restoration and single tooth implants are an excellent and predictable treatment for the "retention" of compromised teeth..."

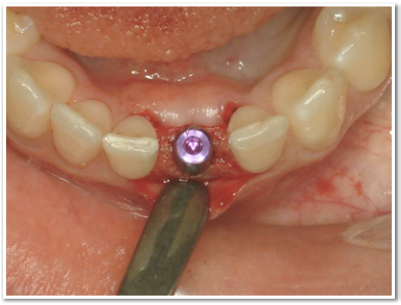
CONCLUSION

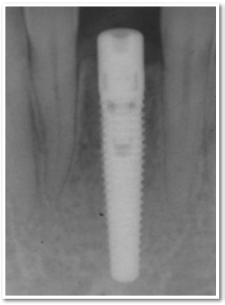
"however, priority should be first given to treatment modalities that aim at preserving the natural teeth before embarking on extraction and replacement"

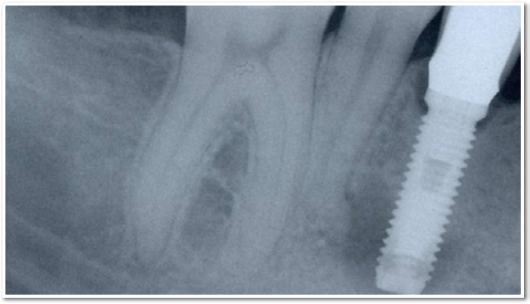


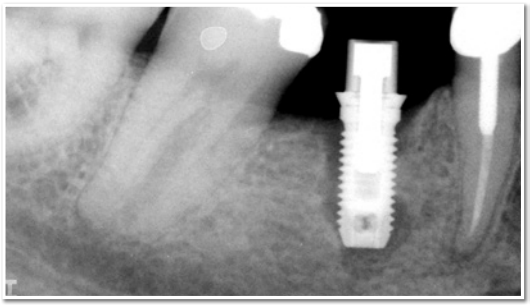












TREATMENT PLANNING DECISIONS

BEST EVIDENCE
& ETHICS

BEST INTERESTS
OF PATIENT

FACTORS OTHER
THAN TREATMENT
OUTCOMES

- Restorability
- Quality and Quantity of Bone
- Esthetic Demands
- Cost-Benefit Ratio
- Systemic Factors
- Economy

MAIN OBJECTIVE
IN DENTISTRY!!!

PREVENTION OF
ORAL DISEASE....

PRESERVATION OF THE
NATURAL DENTITION!!!

MAIN OBJECTIVE OF ENDODONTICS!!!

PREVENTION AND/OR ELIMINATE APICAL PERIODONTITIS

CRITICAL CONCENTRATION THEORY!

-DR. DOUGLAS SPRUNT

TECHNIQUE AND TECHNOLOGICAL IMPROVEMENTS

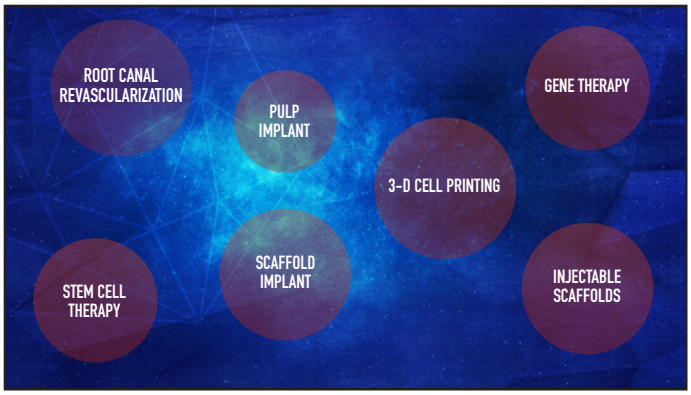
BACTERIA: "EVIL OF ALL ROOT"

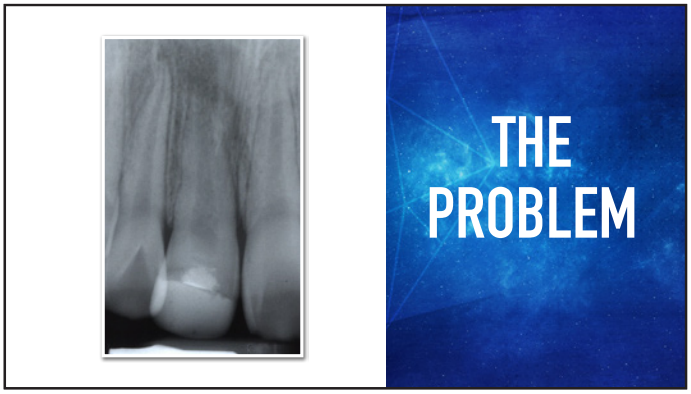
ROOTED IN EXCELLENCE: MASTERING THE ART OF ENDODONTICS

Gary Glassman, DDS, FRCD(C)
gary@rootcanals.ca
www.rootcanals.ca

ENDODONTIC REGENERATION

BIOLOGICALLY BASED PROCEDURES DESIGNED TO REPLACE DAMAGED STRUCTURES INCLUDING DENTIN AND ROOT STRUCTURES, AS WELL AS CELLS OF THE PULP-DENTIN COMPLEX





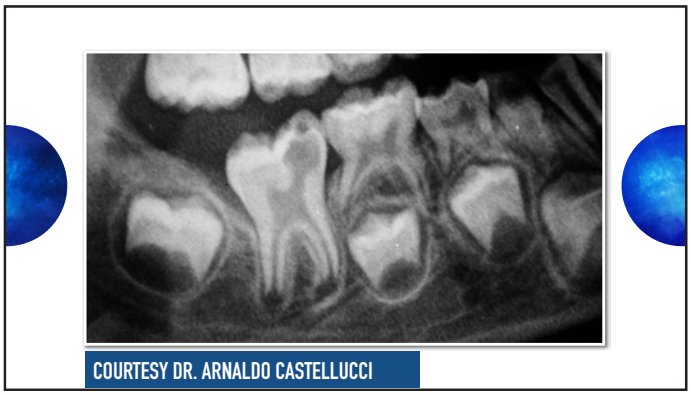
PREVIOUS TREATMENT OPTIONS

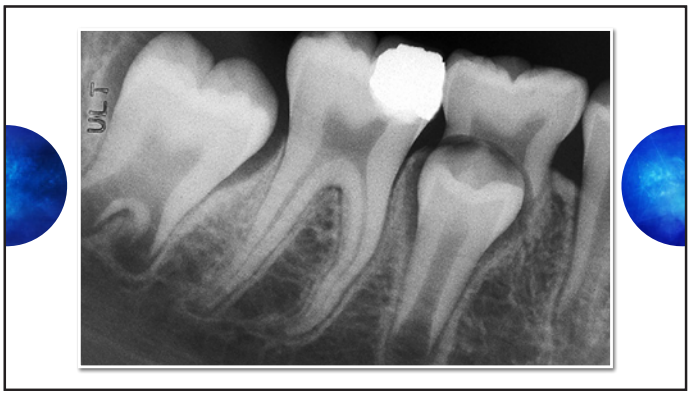
PERIODONTITIS WAS LIMITED TO EXTRACTION, CALCIUM HYDROXIDE APEXIFICATION OR MORE RECENTLY MTA APEXIFICATION.

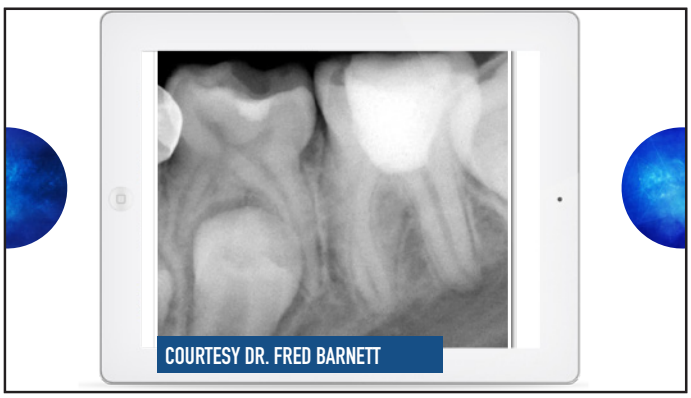
BOTH APEXIFICATION TECHNIQUES DID NOT ALLOW FOR A PREDICTABLE OUTCOME, AND FURTHERMORE DID NOT ALLOW FOR CONTINUED ROOT DEVELOPMENT.

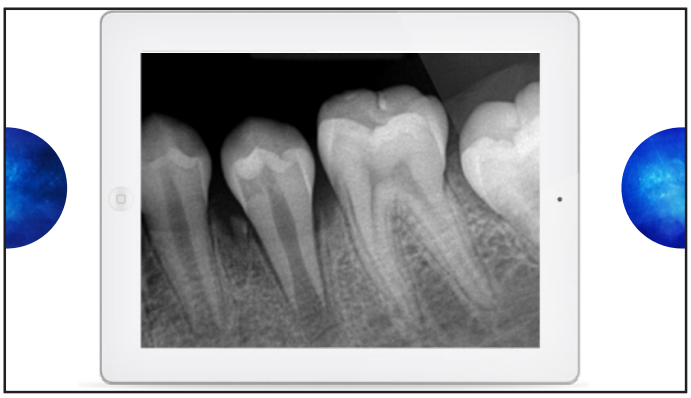
THIS WOULD LEAD TO THIN DENTINAL WALLS WITH AN INCREASED RISK OF FRACTURE SUSCEPTIBILITY.

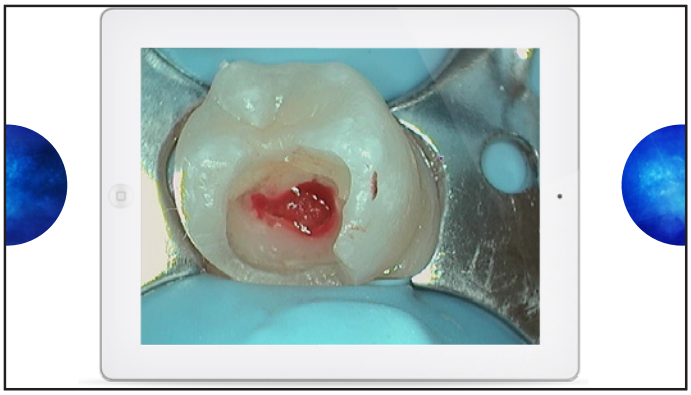
APEXOGENESIS VITAL PULP THERAPY

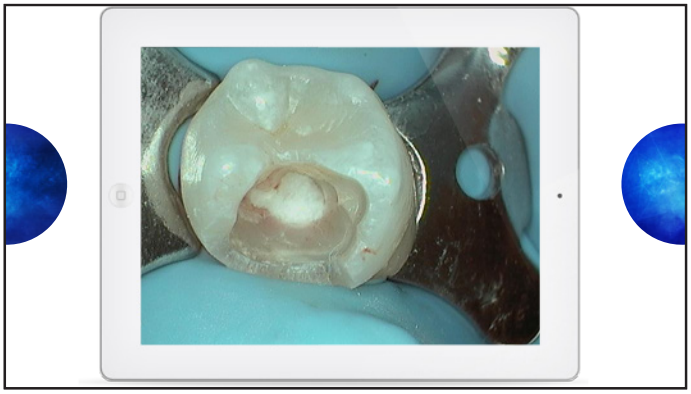


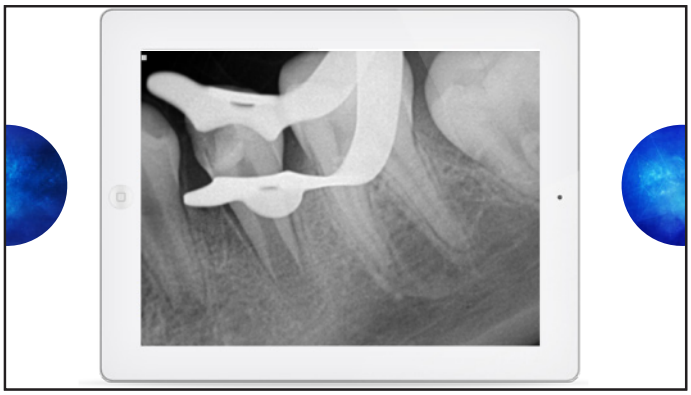


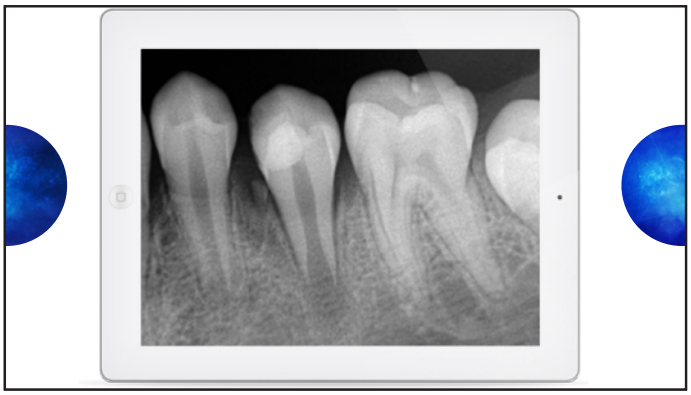


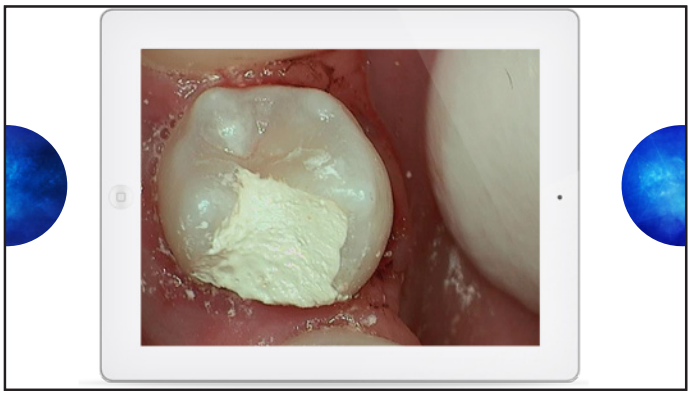


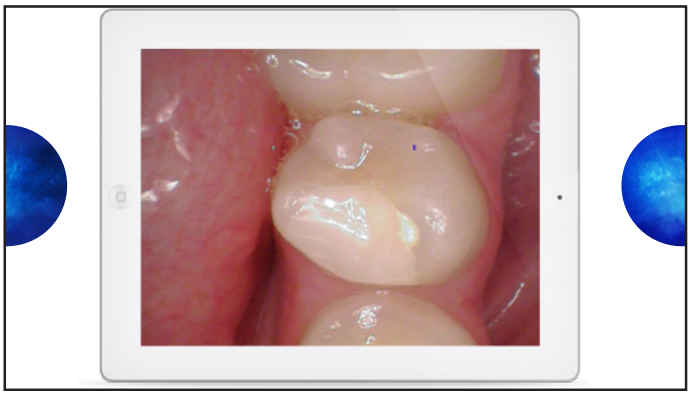


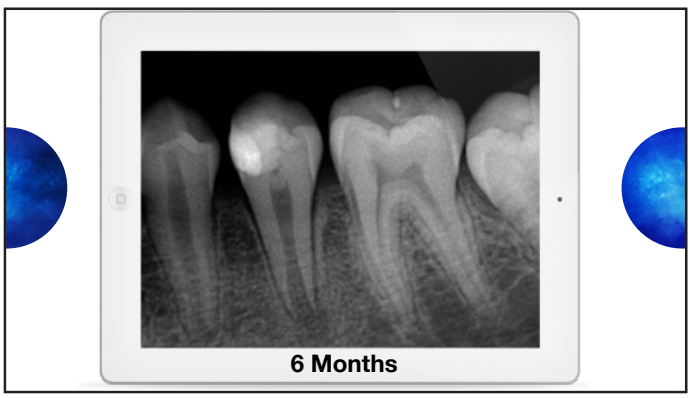




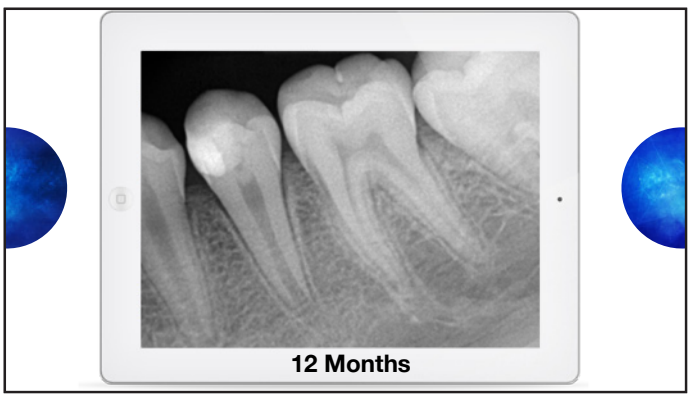




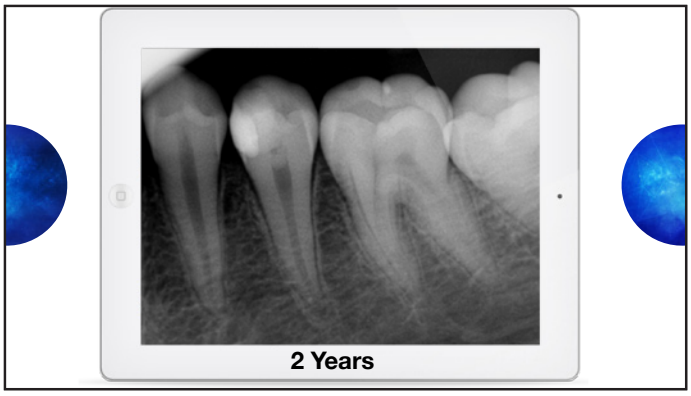




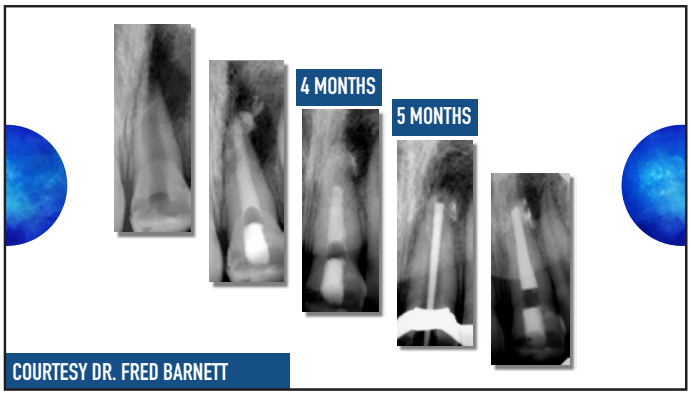
6 Months

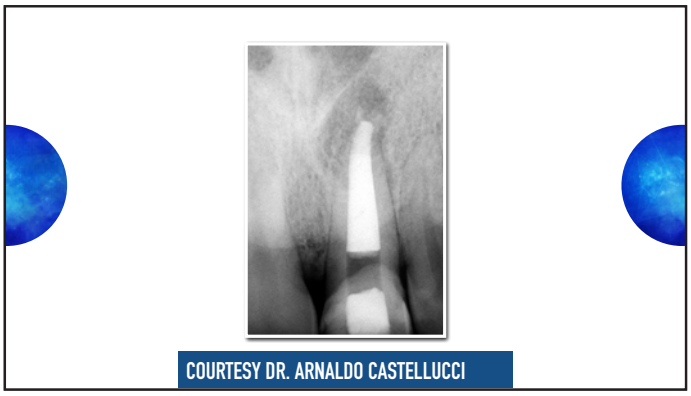


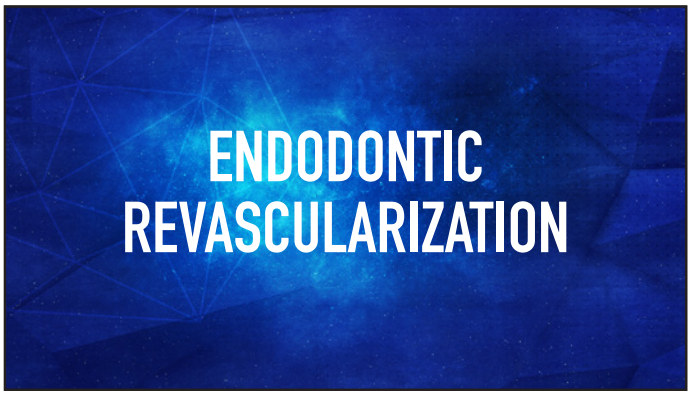
12 Months

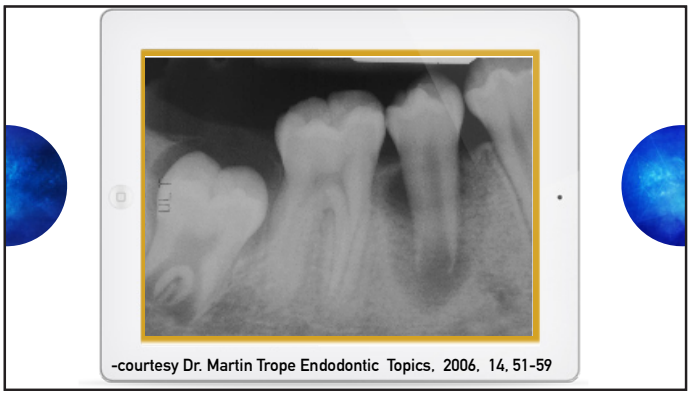

2 Years

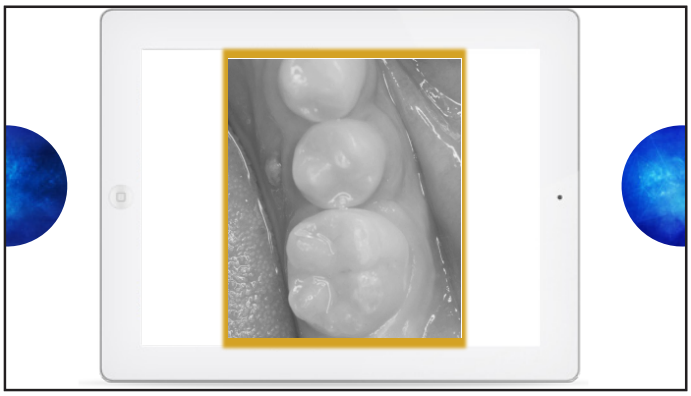

APEXIFICATION

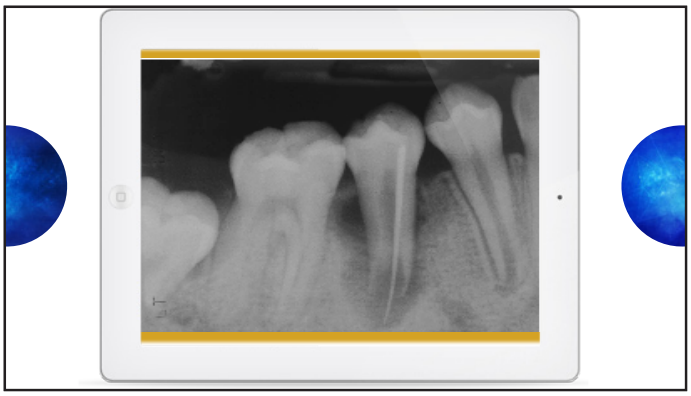

4 MONTHS
5 MONTHS
COURTESY DR. FRED BARNETT

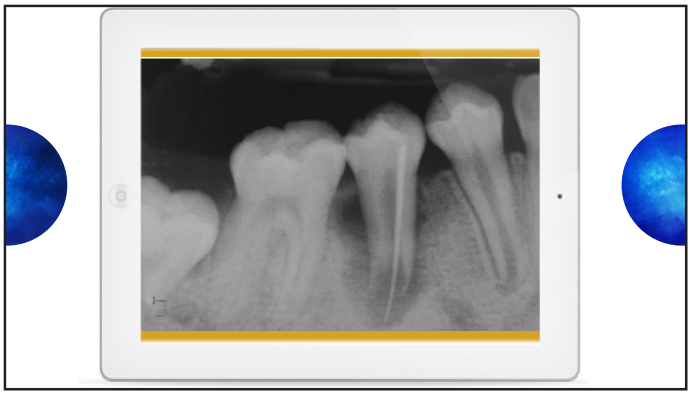

COURTESY DR. ARNALDO CASTELLUCCI


ENDODONTIC
REVASCULARIZATION


-courtesy Dr. Martin Trope Endodontic Topics, 2006, 14, 51-59

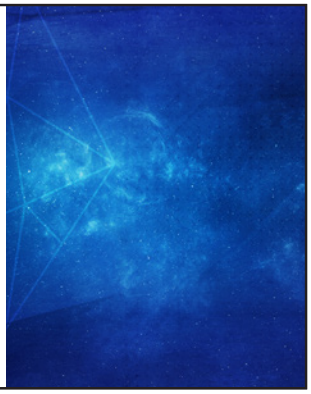


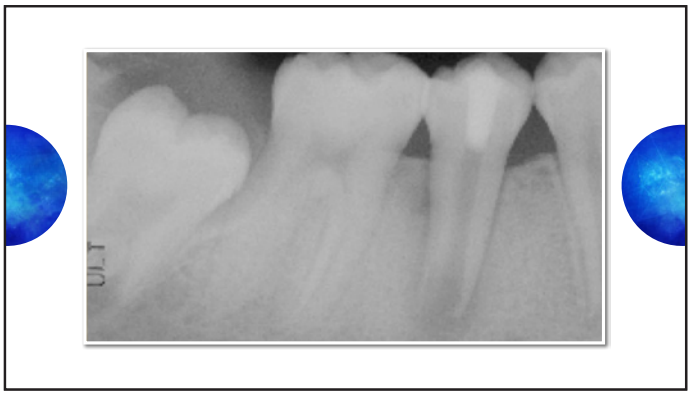




FIRST APPOINTMENT

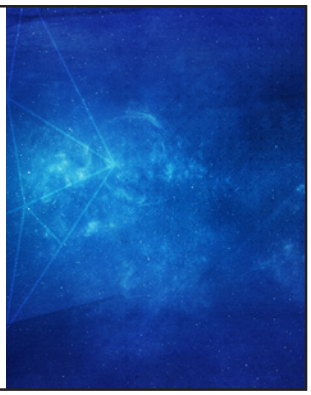
- Access opening
- Slowly flush the canal system with 20 ml of 5.25% NaOCl and 10 ml of Peridex
- Dry canal with paper points
- ORIGINALLY…A mixture of ciprofloxacin, metronidazole, and tetracycline is spun approx. 8mm down the canal with the use of a lentulo spiral **NOTE: Staining of tooth**
- **NOW….CaOH and some are using Platelet Rich Fibrin (PRF)**
- Access opening is sealed using temporary filling material
- Reappoint patient in 21 days

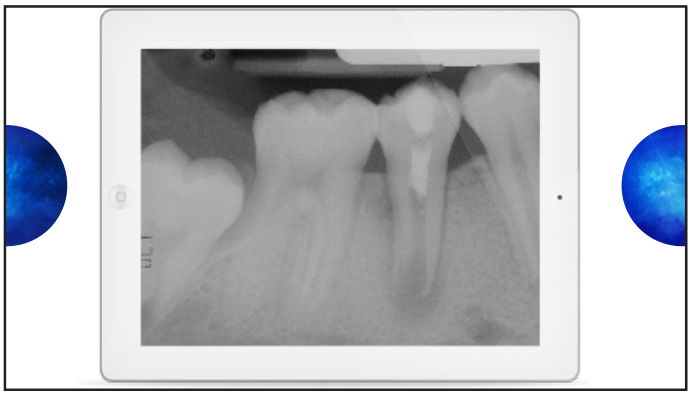


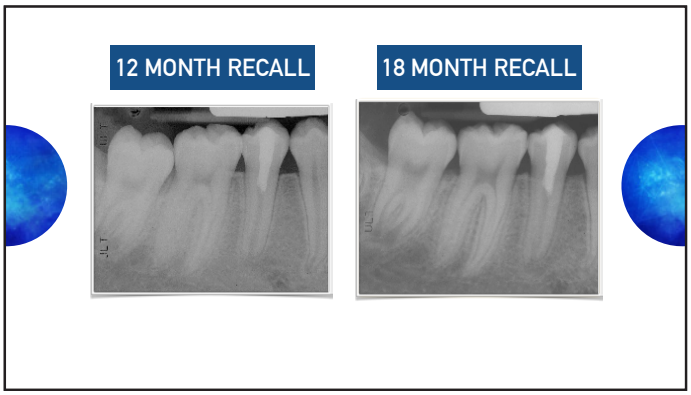


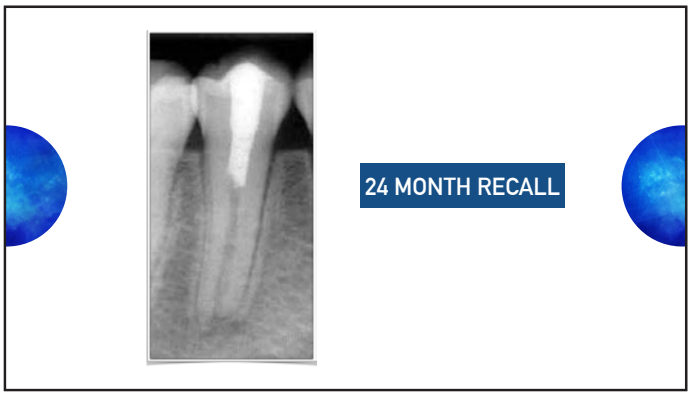
SECOND APPOINTMENT

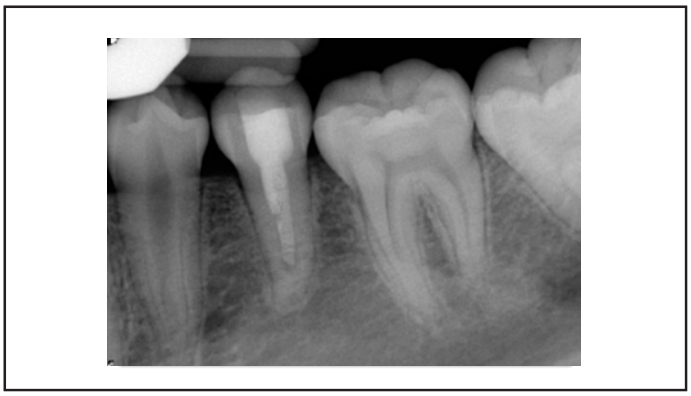
- Access opening
- Canal is again flushed with 10 ml of 5.25% NaOCl Dry canal with paper points
- Provided there is no evidence of inflammatory exudate an endodontic explorer is placed beyond the apex to initiate hemorrhaging into the canal space
- The blood is stopped at a level of approximately 3 mm below the CEJ and is left for 15 minutes to allow for clot formation

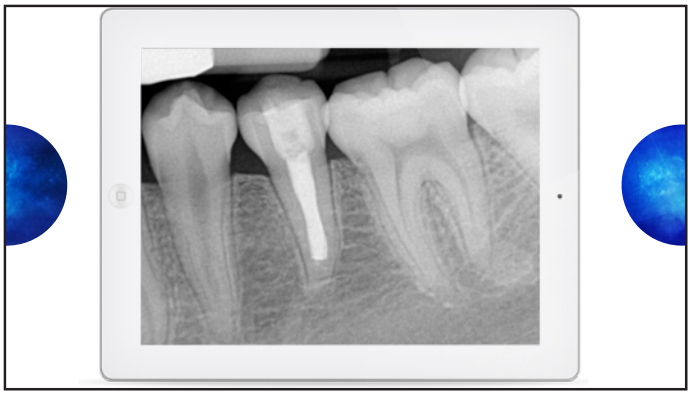


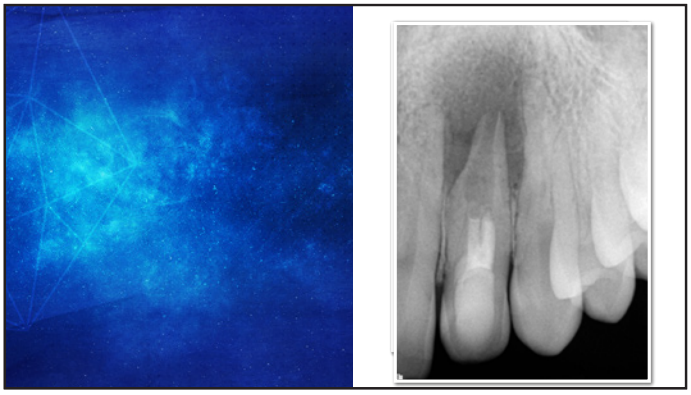


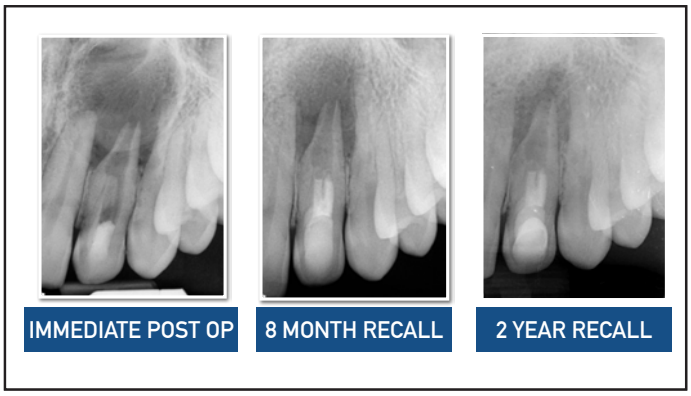


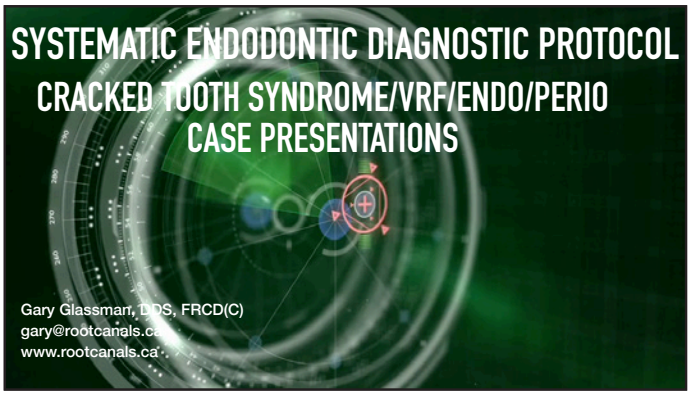


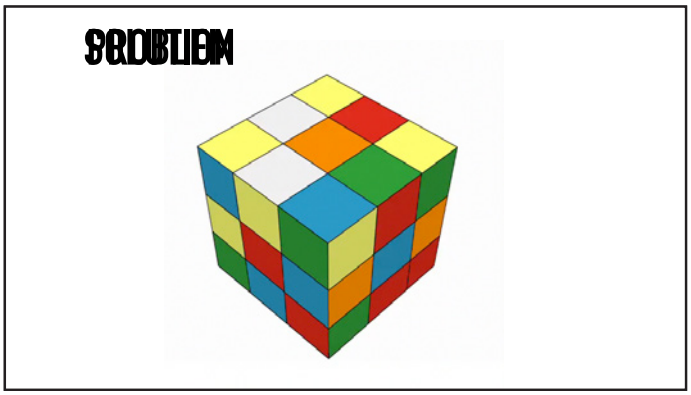




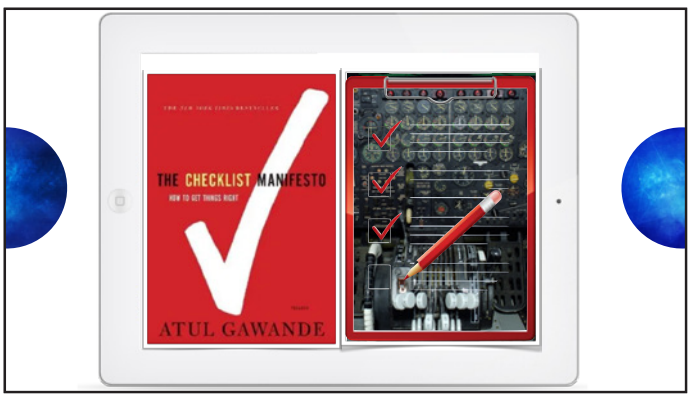



IMMEDIATE POST OP
8 MONTH RECALL
2 YEAR RECALL

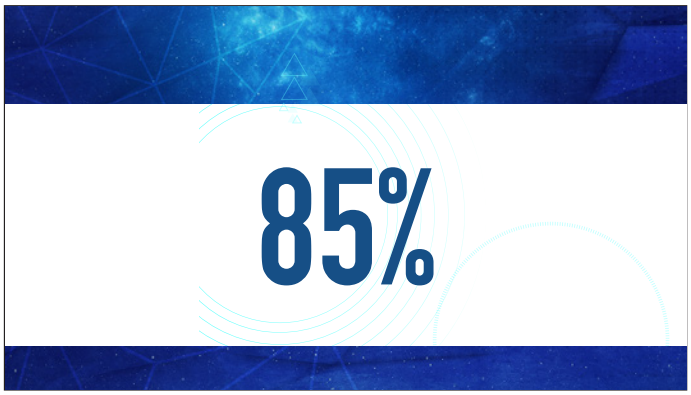

SYSTEMATIC ENDODONTIC DIAGNOSTIC PROTOCOL
CRACKED TOOTH SYNDROME/VRF/ENDO/PERIO
CASE PRESENTATIONS
Gary Glassman, DDS, FRCD(C)
gary@rootcanals.ca
www.rootcanals.ca


PROBLEM


Data
Collection
&
Analysis


THE CHECKLIST MANIFESTO
ATUL GAWANDE


INTUITION AND
CLINICAL EXPERIENCE


85%


LISTEN
LISTEN
LISTEN


CHECKLIST


1 HOT AND/OR COLD AND/OR BITING SENSITIVITY?
2 SPONTANEOUS PAIN?
3 SWELLING?
4 DIFFICULTY SWALLOWING?
5 DIFFICULTY BREATHING?
6 SYMPTOMS RELIEVED BY OVER THE COUNTER OR RX MEDS?
7 SYMPTOMS KEEPING UP AT NIGHT?


Patient Medical History


SOAP

SUBJECTIVE INFORMATION
OBJECTIVE INFORMATION
ASSESSMENT OF INFORMATION
PLAN OF TREATMENT

SUBJECTIVE INFORMATION

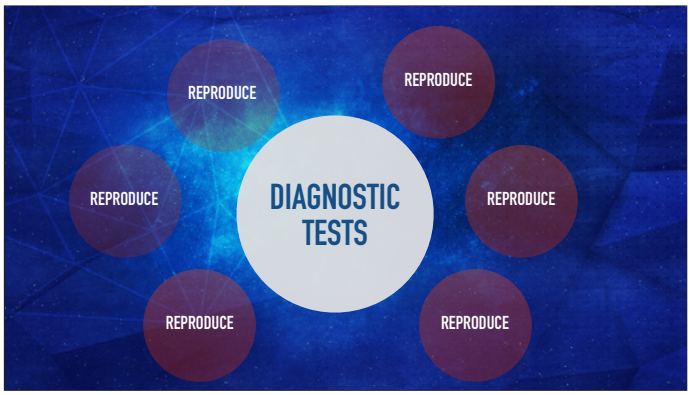
- ✓CHIEF COMPLAINT
- ✓CURRENT STATUS OF THE DISEASE
- ✓LOCATION/SOURCE OF PAIN
- ✓HISTORY OF PAIN/PROBLEM
- ✓FREQUENCY OF PAIN
- ✓SEVERITY OF PAIN
- ✓SPONTANEITY OF PAIN
- ✓STIMULUS/RELIEF OF PAIN

OBJECTIVE INFORMATION

- ✓CLINICAL/VISUAL EXAMINATION
- ✓CLINICAL TESTING
- ✓RADIOGRAPHIC EVALUATION

ASSESSMENT OF INFORMATION

- ✓NO IDEAL CLASSIFICATION FOR PULP AND PERIRADICULAR DISEASE
- ✓CLASSIFICATION SHOULD BE BASED ON CLINICAL AND RADIOGRAPHIC FINDINGS, SINCE NO HISTOLOGICAL DATA IS AVAILABLE
- ✓DUAL DIAGNOSIS
- ✓1) PULPAL STATUS 2) PERIRADICULAR STATUS



PULP SENSITIVITY

THERMAL TESTING

Responses to Stimuli can be:

- ✓ Normal
- ✓ Exaggerated
- ✓ No Response

COLD TESTING

A response and immediate remission (10-15 seconds):

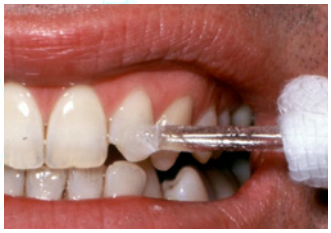
✓ Normal

An increase in intensity that lingers:
✓ Abnormal

No response:
✓ Normal or Abnormal

A δ NERVE FIBRES

COLD TESTING ICE



A δ NERVE FIBRES

COLD TESTING ICE

COLD TESTING ICE

A δ NERVE FIBRES

COLD TESTING ENDO ICE

A δ NERVE FIBRES

COLD TESTING ENDO ICE

A δ NERVE FIBRES

HOT TESTING

- ~~Heated Gutta Percha~~
- ~~Heated Ball Burnisher~~
- ~~Hot Water~~
- ~~Prophy Cup~~
- Hot Pulp Test Tip ✓

C NERVE FIBRES

COMPARISON OF HEAT-TESTING METHODOLOGY

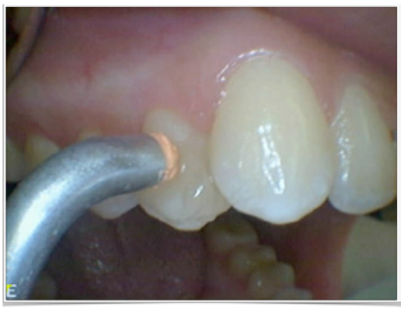
Bierma M. Et. Al. JOE August, 2012

FACTS

- Heat can damage pulps!!
- Temps of 42°-42.5° C may be high enough to cause damage to the pulp
- A 4° C rise in intrapulpal temperature can cause minimal temporary changes
- 10° C rises causes greater damage and 20° C rise can cause pulp necrosis

HOT PULP TEST TIP

HOT PULP TEST TIP



THERMAL TESTING–HOT

A response and immediate remission (10-15 seconds):

✓ Normal

An increase in intensity that lingers:
✓ Abnormal

No response:
✓ Normal or Abnormal

HOT PULP TEST TIP

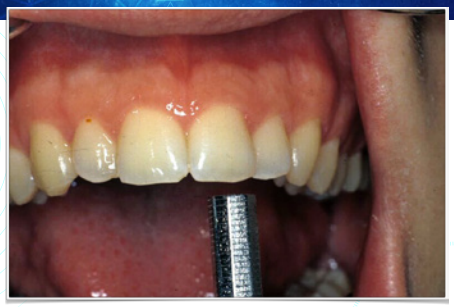
ELECTRIC PULP TEST–EPT

ELECTRIC PULP TEST–EPT

- ✓ Gives an indication of pulp vitality when compared to a control tooth
- ✓ Percentage of false readings (positive and negative) make the test unreliable in determining disease status
- ✓ Good for establishing a base-line following trauma
- ✓ Good for testing profoundness of local anaesthesia

ANALYSIS OF PERIODONTAL LIGAMENT (PDL) AND ATTACHMENT APPARATUS STATUS

PERCUSSION TEST

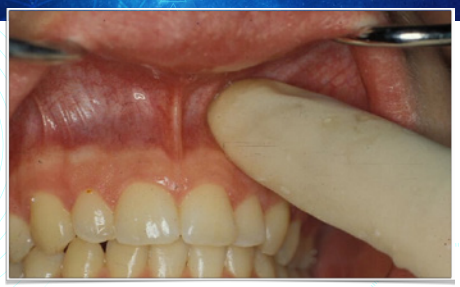


PERCUSSION TEST

- ✓ A positive response indicates inflammation of the periodontal ligament and is used to isolate the offending tooth
- ✓ If the patient indicates that there is severe pain when pressure is applied, apply only finger pressure – do NOT use an instrument to percuss the teeth

PERCUSSION TEST

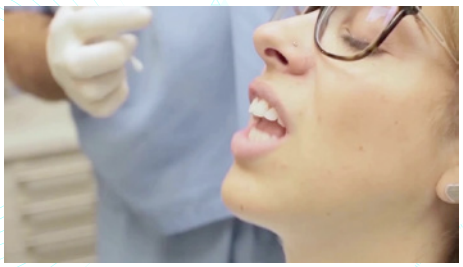
APICAL PALPATION



APICAL PALPATION

- ✓ Purpose
- ✓ Locate an intra-oral swelling
- ✓ Indicates perforation of the buccal plate of bone

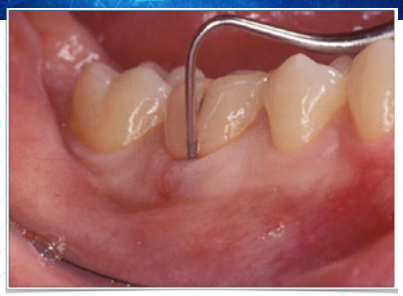
APICAL PALPATION



MOBILITY

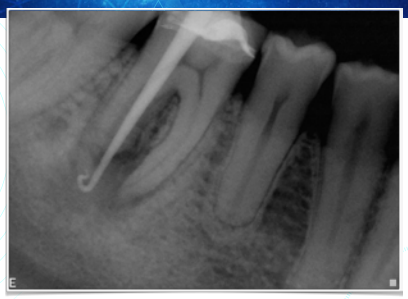
MOBILITY

PERIODONTAL PROBING

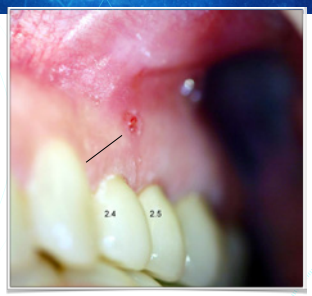


PERIODONTAL PROBING

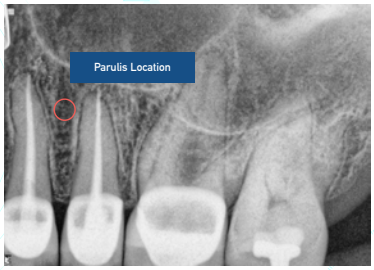
SINUS TRACT-SINUGRAM



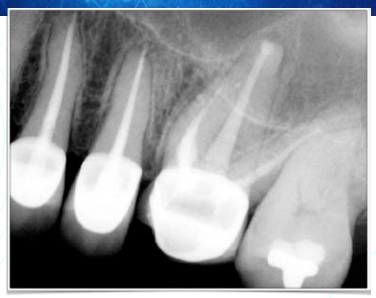
SINUS TRACT-SINUGRAM



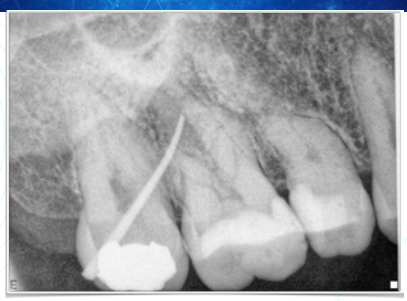
SINUS TRACT-SINUGRAM



EXPECT THE UNEXPECTED!!



EXPECT THE UNEXPECTED!!



CRACKED TOOTH SYNDROME (SPECTRUM)

BITE TEST

PURPOSE

- ✓ Isolates the offending tooth

POSSIBLE CAUSES

- ✓ Inflammation at apex
- ✓ Cracked tooth with fracture impinging on the pulp and/or periodontal ligament

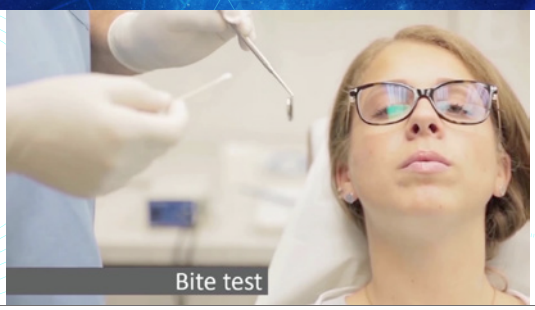
BITE TEST

METHOD

- ✓ Using either a "Q-tip" or "Tooth-sleuth" have patient apply biting pressure on one cusp at a time

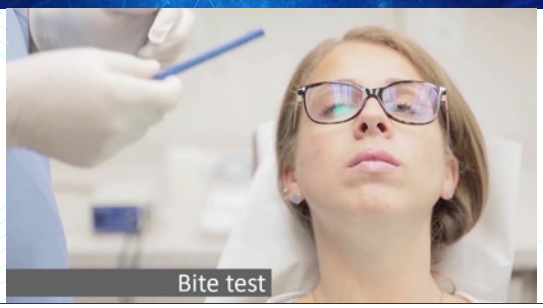
BITE TEST

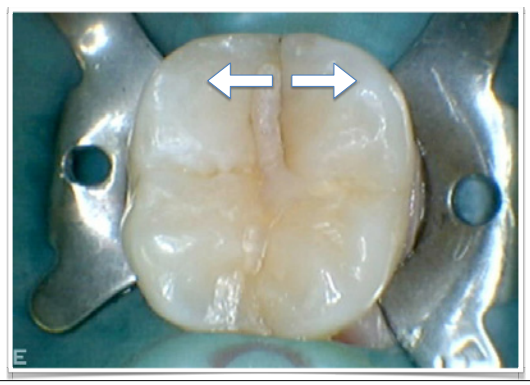
BITE TEST

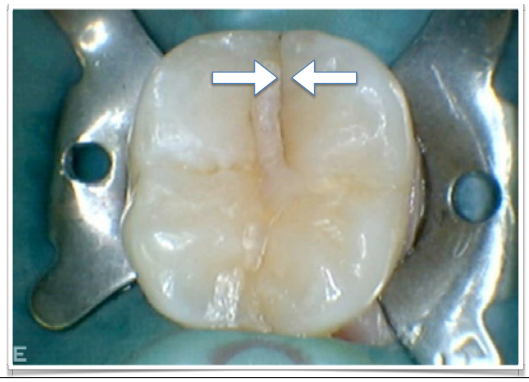


BITE TEST

BITE TEST

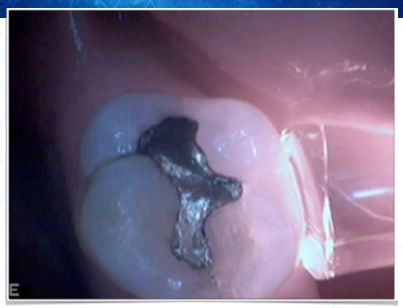






OUCH!!!!!

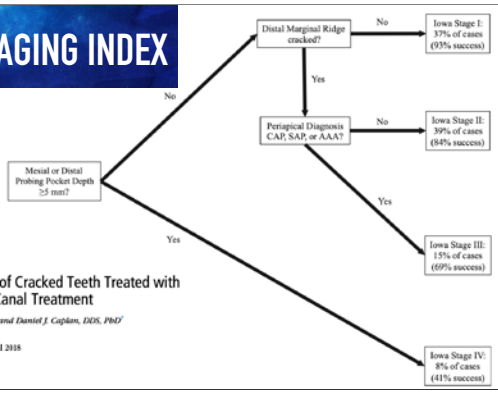
TRANSILLUMINATION



CRACKED TOOTH SYNDROME

The term **"cracked tooth syndrome"** was coined by Cameron (1964) and referred to teeth with sensitivity to biting and unexplained thermal sensitivity. The cracks were usually mesial to distal, and mandibular second molars had the highest incidence of cracks.

IOWA STAGING INDEX



12-month Success of Cracked Teeth Treated with Orthograde Root Canal Treatment

Keith V. Krell, DDS, MS, MA, and Daniel J. Caplan, DDS, PhD†*

JOE — Volume 44, Number 4, April 2018

PROGNOSIS

Decision Making for Retention of Endodontically Treated Posterior Cracked Teeth: A 5-year Follow-up Study

Irene G.B. Sim, BDS, MDS, M Endo RCS (Edin), Toh-Seong Lim, BDS, MDS, MRD RCS (Edin),† Gita Krishnaswamy, BEng, MS,‡ and Nab-Nab Chen, BDS, MDS, MS**

JOE — Volume 42, Number 2, February 2016

PROGNOSIS

- ✓ Patient demographics, tooth type and location, existing restoration, number and location of cracks, presence of pretreatment signs and symptoms, and initial pulpal and periapical diagnosis did not significantly affect the survival of the teeth
- ✓ **The determining factor when deciding on treatment of these teeth hinges on the extent of the crack.**
- ✓ From the present study, 95.2% of teeth with coronal cracks survived at 5 years compared with 81.8% of teeth with radicular extensions.

BIDIRECTIONAL SPLINTING: REVERSIBLE PULPITIS

Received: 26 May 2021 | Accepted: 9 July 2021
DOI: 10.1111/iej.13597

ORIGINAL SCIENTIFIC ARTICLE

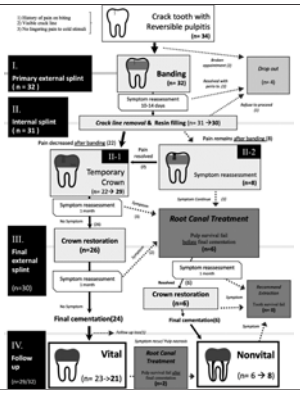
INTERNATIONAL ENDODONTIC JOURNAL | WILEY

Survival and prognostic factors of managing cracked teeth with reversible pulpitis: A 1- to 4-year prospective cohort study

Junghoon Lee[1] | Sunil Kim[1] | Euiseong Kim[1,2] | Kyung-Ho Kim[3,4] | Seong Taek Kim[5] | Yoon Jeong Choi[3,6]

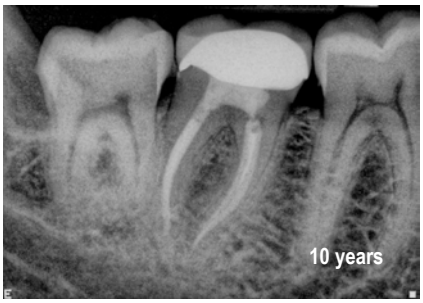
PROTOCOL: SUMMARY

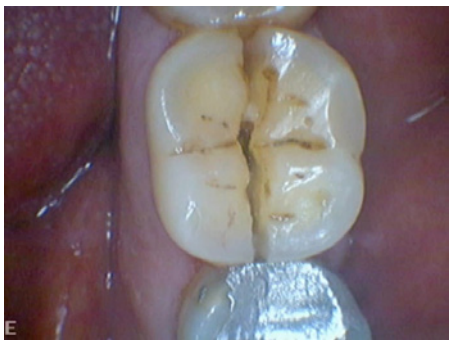
- ✓ Immediate splinting with a stainless steel orthodontic band
- ✓ Internal splinting with crack line removal and resin restoration (10-14 days later)
- ✓ External splinting with crown restoration (1 month later)
- ✓ IF HOWEVER, tooth continued to be symptomatic then endodontic treatment followed by crown

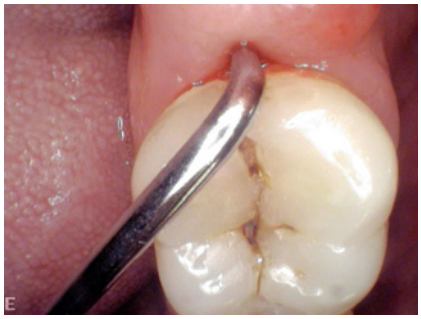


RESULTS

- ✓ Twenty-nine (97%) teeth were followed up for up to 4 years. The pulp survival rate was 72% after banding and 91% after final crown cementation. No tooth was extracted (100% tooth survival rate)
- ✓ **The only significant predictive factor for pulp survival was pain on percussion.**
- ✓ Teeth with pain on percussion at the first visit had a pulp survival rate of 46% during the follow-up period. In comparison, their counterparts without pain had a 94% pulp survival rate.







PLACEMENT OF ORIFICE BARRIERS

Matthew C. Davis, DDS,* and Suhaila S. Shariff, DMD, MPH†

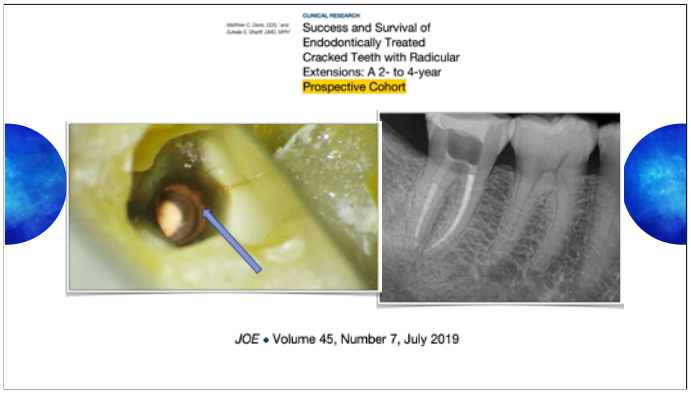
CLINICAL RESEARCH

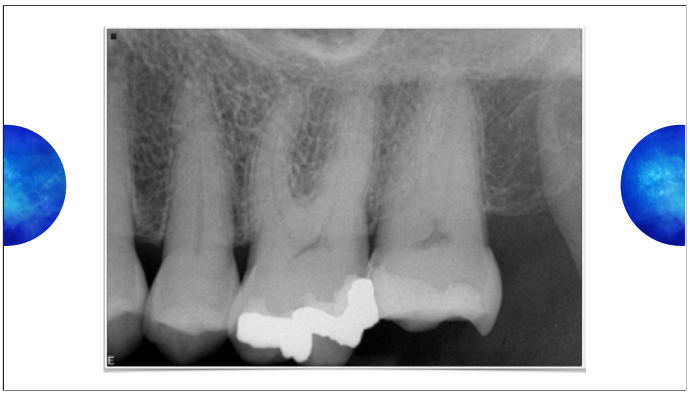
Success and Survival of Endodontically Treated Cracked Teeth with Radicular Extensions: A 2- to 4-year Prospective Cohort

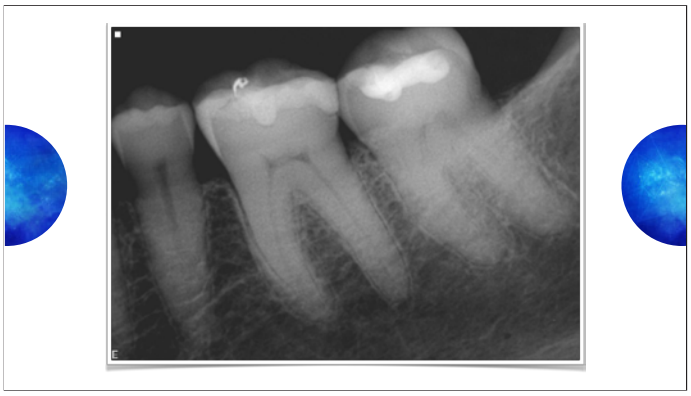
JOE • Volume 45, Number 7, July 2019

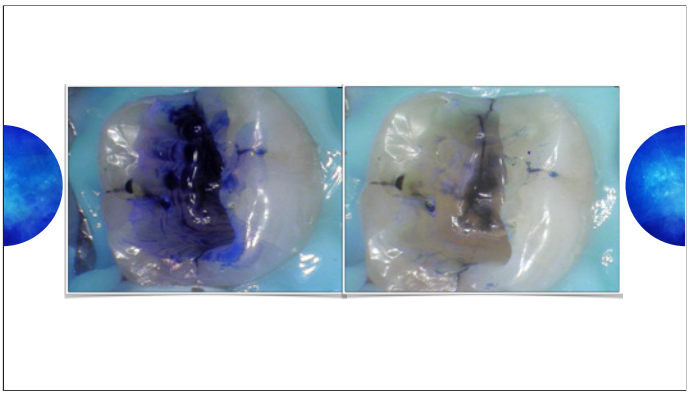
RESULTS

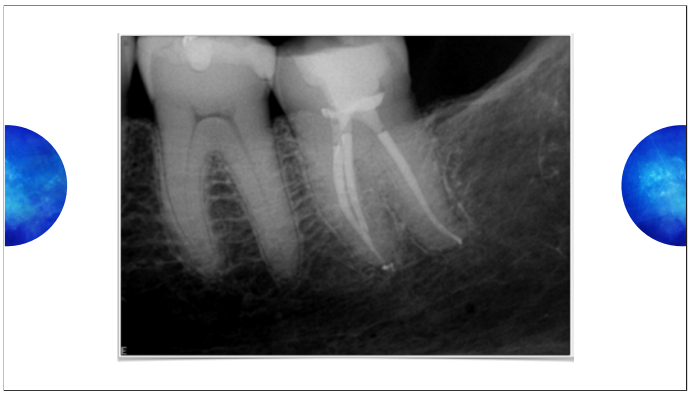
- ✓ Data on 2- to 4-year prospective cohorts indicates a 90.6% success and 96.6% survival rate for cracked teeth with radicular extensions.
- ✓ Microscope-assisted intraorifice barriers placed apical to the level of the crack
- ✓ Complete occlusal reduction of the tooth post endodontically and
- ✓ Expeditious placement of a full-coverage restoration with proper occlusal equilibration

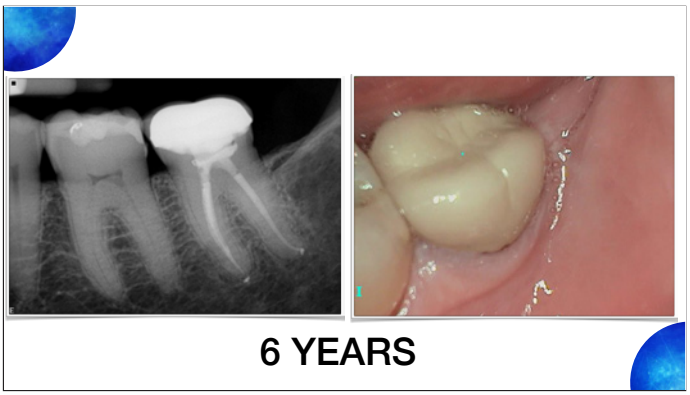




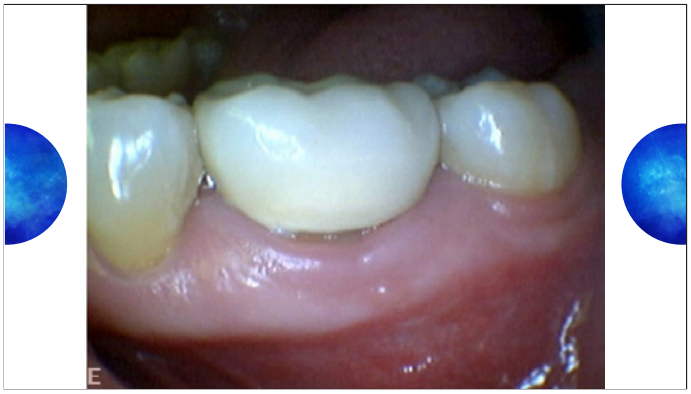


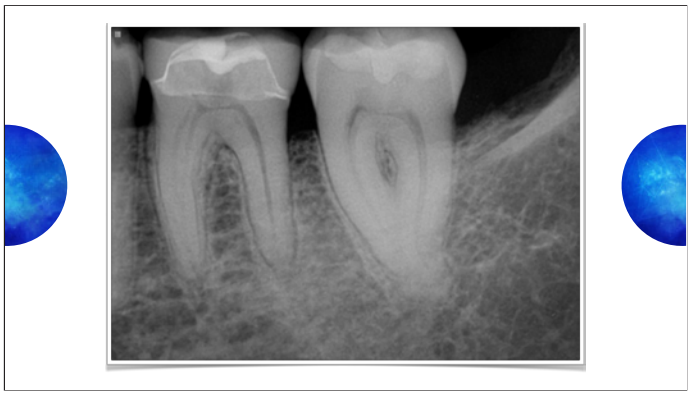


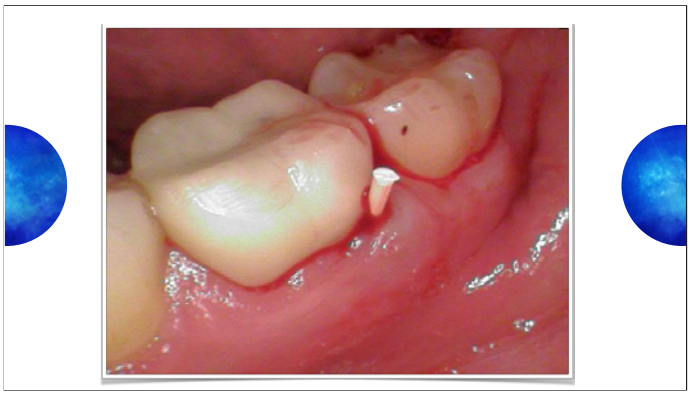


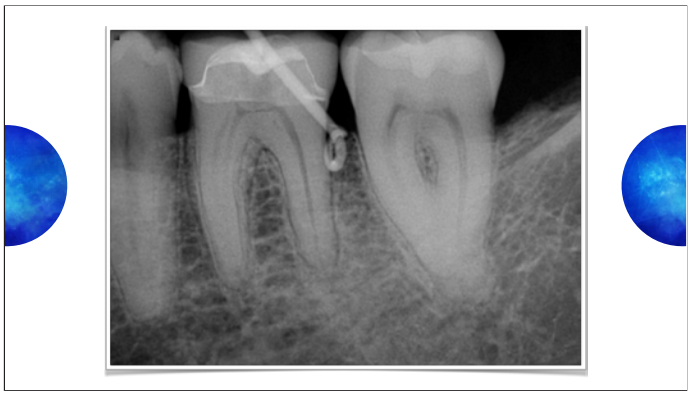


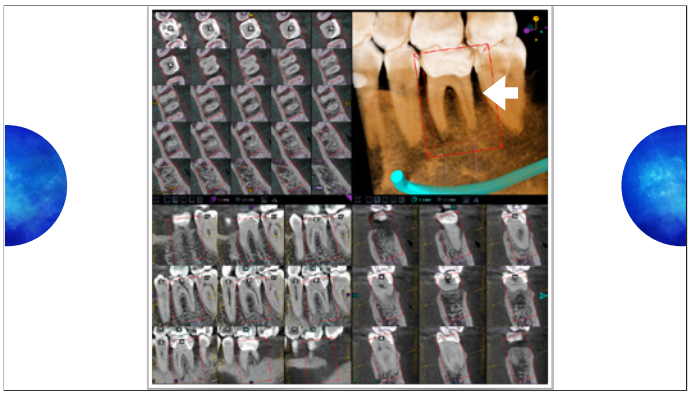

J-SHAPE LESION: FRACTURE OR DRAINING INFECTION?

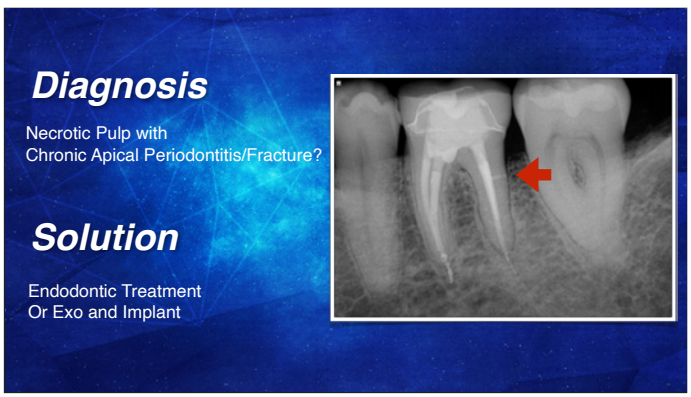


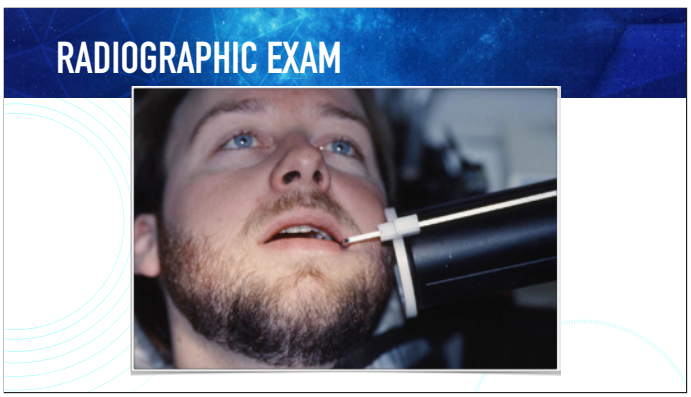






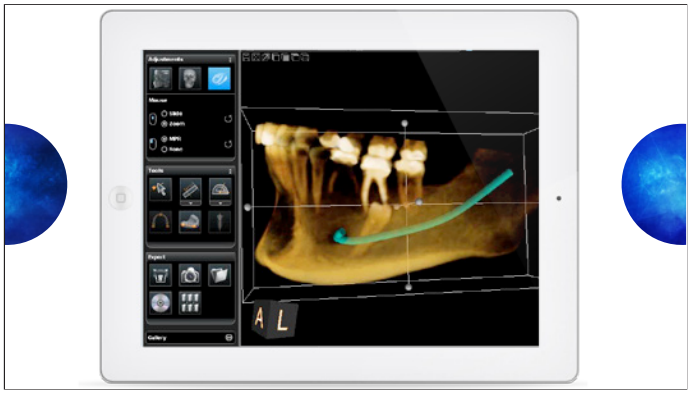



Diagnosis
Necrotic Pulp with
Chronic Apical Periodontitis/Fracture?
Solution
Endodontic Treatment
Or Exo and Implant

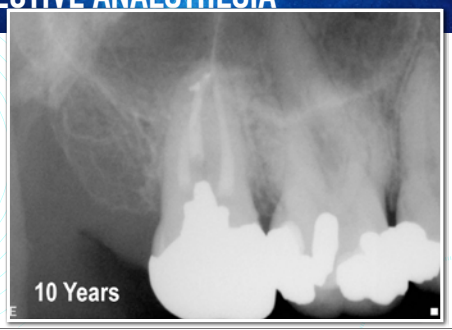

RADIOGRAPHIC EXAM

EXTRAORAL IMAGING

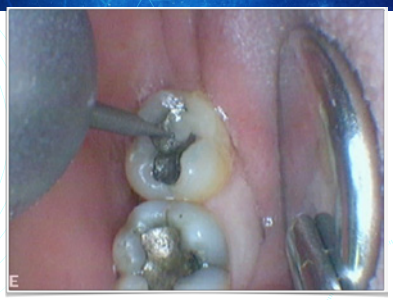
RADIOGRAPHIC EXAM/CBCT



SELECTIVE ANAESTHESIA



TEST CAVITY



PULPAL DIAGNOSIS

- ✓ Normal Pulp
- ✓ Reversible Pulpitis
- ✓ Symptomatic Irreversible Pulpitis
- ✓ Asymptomatic Irreversible Pulpitis
- ✓ Pulp Necrosis
- ✓ Previously Treated
- ✓ Previously Initiated Therapy

APICAL DIAGNOSIS

- ✓ Normal Apical Tissues
- ✓ Symptomatic Apical Periodontitis
- ✓ Asymptomatic Apical Periodontitis
- ✓ Chronic Apical Abcess
- ✓ Acute Apical Abcess
- ✓ Condensing Osteitis

www.oralhealthgroup.com

LACK OF OBVIOUS REASON FOR PAIN

- ✓ No Local Dental Cause Consistent With Symptoms
- ✓ Burning Pain, Nonpulsatile Pain
- ✓ Constant Pain, Nonvariable Pain
- ✓ Persistent Signs And/Or Symptoms-Months To Years
- ✓ Multiple Lesions, Spontaneous, No Apparent Cause
- ✓ Failure To Relieve Pain With Anesthetic Block Of Suspected Tooth
- ✓ Failure To Respond To Reasonable Therapy

NON-ODONTOGENIC ORIGIN

- ✓ Toothache Of Maxillary Sinus Origin
- ✓ Toothache Of Cardiac Origin
- ✓ Psychogenic Origin
- ✓ Episodic Neuropathic Origin (V Neuralgia)
- ✓ Infectious: Herpes Zoster (Shingles), Otitis
- ✓ Toothache Of Myofascial Origin (Musculoskeletal)

COMPLETE MUSCULOSKELETAL SCREENING (MSK)

MOST COMMON TEMPEROMANDIBULAR DIAGNOSIS

- ✓ Anterior Disc Displacement With Or Without Reduction
- ✓ Myogenic Pain From Muscles Of Mastication Spasm
- ✓ Musculoskeletal Pain With Cerviogenic Origin (Ie. Referred Pain)
- ✓ Temporomandibular Degeneration

SYMPTOMS TO SCREEN FOR

- ✓ Grinding/Bruxism
- ✓ Locking (Open Or Closed)
- ✓ Clicking
- ✓ Difficulty With Chewing/Talking/Yawning
- ✓ Muscular Fatigue
- ✓ Head Pain

PLAN OF TREATMENT

"No Treatment when there is no definitive diagnosis"

SELF EVALUATION

Success and Failure in Endodontics: Implant Alternatives, Regenerative Techniques, and Diagnostic Challenges

True/False

1. The long-term success rate of endodontic treatment is comparable to that of implant-supported restorations, especially when the tooth is properly restored.

2. Extraction and implant placement should always be considered the first-line treatment over endodontic therapy for compromised teeth.

3. Accurate endodontic diagnosis relies on a combination of clinical testing, radiographic interpretation, and patient history.

4. Pulp vitality tests can definitively determine whether a tooth is infected.

5. Regenerative endodontic procedures aim to restore vitality and continued root development in immature permanent teeth with necrotic pulps.

6. The most common cause of endodontic failure is persistent or secondary infection due to inadequate cleaning, shaping, or sealing of the canal system.

7. A tooth with a radiolucency at the apex and no symptoms must always be extracted, as it indicates irreversible damage.

Answer Key: 1. T, 2. F, 3. T, 4. F, 5. T, 6. T, 7. F

Tongue-Tie and Lip-Tie in Infants: Diagnosis, Implications, and Intervention for Breastfeeding Success

Robert Convissar, DDS

Tongue Ties, Lip Ties, and Infant Surgery

This Is A *VERY SHORT* Introduction to The Subject.
The Subject DEMANDS a
MINIMUM 14 Hour LIVE CE WORKSHOP
In Order to Be Familiar With the Subject.

Dx-Tx-Aftercare –Building a Complete Team – Mgmt. of Complications- Marketing – Billing - Etc

This UNIQUE Presentation is Protected By USA AND INTERNATIONAL COPYRIGHT LAWS

Is TT release a fad?
Something new for HC providers- Especially Laser Dentists - to make money or justify the purchase of a laser?

This is something that's been going on since the beginning of time!
Midwives....Doulas.....Nurses....
Physicians....have been doing this forever!!

ALL OF THE LITERATURE THAT JUSTIFIES THIS PROCEDURE COMES FROM *THE MEDICAL LITERATURE*

NOT DENTAL JOURNALS!!

NEONATOLOGY 2010;97(2):83-9

Tongue-tie, or ankyloglossia.....involves a short, thick, fibrosed, or fixed lingual frenulum. Operative interventions were proposed already ***in Greek medicine***. In the Middle Ages, competition arose between midwives, who used their nails to detach the frenulum, and surgeons, who were allowed to use instruments.

Take A Trip To The MET and See For Yourselves!

Why Was Moses NOT The High Priest of the Israelites?
(His Brother Aaron Was)

Exodus 4:10

But Moses said to the LORD, "Oh, my Lord, I am not eloquent, but I am slow of speech and of tongue."

Mark 7:31

"And they bring unto him one that had an impediment in his speech; and they beseech him to put his hand upon him.
"And he took him aside from the multitude, and put his fingers into his ears, and he spit, and touched his tongue; "And straightway his ears were opened, and ***the string of his tongue was loosed, and he spake plain.***

BF Has Been Associated With The Following Health Benefits:
1) Reduction In Otitis Media
2) Reduction in Respiratory Illness
3) Reduction in Gastroenteritis
4) Reduction in Hospitalizations From ANY Cause

And Please Remember That Preemies Have MORE BF Problems Than Full-Term Babies

(Less Time Practicing The Suck-Swallow-Breathe Reflex)

SSBR Uses:
60 Muscles
22 Cranial Bones
6 Of The 12 Cranial Nerves
This All Has To Work In Harmony Immediately Upon Birth!!

First:
The *MEDICAL* Literature To Justify Surgical Intervention

Otolaryngology- Head and Neck Surgery –The Official Journal Of The A.A.Otolarygology –Head And Neck Sx Published 7 Sep 2021.

Objective Improvement After Frenotomy for Posterior Tongue-Tie: A Prospective Randomized Trial
Bobak A. Ghaheri MD,
Douglas Lincoln, MD, MPH,
Tuyet Nhi T. Mai,
Jess C. Mace, MPH,CCRP

47 infants 3-16 weeks

Forty-seven infants with PTT were enrolled into an observational/control arm (n = 23)
or
interventional/surgical treatment arm (n = 24).
The total cohort consisted of 29 (61.7%) male infants with a median age of 39 days. ***At the day 10 time point, the interventional arm demonstrated statistically significant improvement in 11 objectively obtained feeding metrics, indicating faster tongue speed, more rhythmic and coordinated sucking motions, and a tongue more capable of adapting to varying feeding demands***

Significant improvement in breastfeeding self-efficacy was reported in the interventional group
while
poor self-confidence persisted in the observational group.
Infant reflux symptoms improved in the interventional group while not in the control group.
Nipple pain also persisted in the control group but ***improved in the surgical cohort.***

(will talk about reflux soon)

Conclusions: When measured 10 days after frenotomy for PTT, infants improved feeding parameters using an objective bottle-feeding system. Similar improvements are seen with patient-reported outcomes when PTT is released. ***Posterior tongue-tie is a valid clinical concern, and surgical release can improve infant and maternal symptoms***

Int J Pediatr Otorhinolaryngol

2013 May;77(5):827-32.

The effects of office-based frenotomy for anterior and posterior ankyloglossia on breastfeeding

Cliff O'Callahan, MD, PHD
Susan Macary, MPH
Stephanie Clemente, FNP

311 infants evaluated for ankyloglossia and 299 (95%) underwent a frenotomy. Most infants were classified as having ***Type III (36%) or IV (49%)*** ankyloglossia (PTT) compared to only 16% with anterior (Type I and Type II combined)***. Infant latching significantly improved (P<.001) from pre- to post-intervention for infants with posterior ankyloglossia***. Both ***the presence and severity of nipple pain decreased from pre- to post-intervention among all classifications*** (P<.001). ***Additionally, 92% of respondents breastfed exclusively post-intervention. The mean breastfeeding duration of 14 months did not differ significantly by classification.***

Conclusions: Breastfeeding difficulties associated with ankyloglossia in infants, ***particularly posterior, can be improved with a simple office-based procedure in most cases. The diagnosis and treatment of ankyloglossia should be a basic competency for all primary care providers and pediatric otorhinolaryngologists.***

Some Statistics From The Paper:
64% of Moms Reporting Nipple Pain

Reported Improvement Within 1 Week
0% Of Moms Reported Worsening Pain

CRITICAL POINT: 85% of Babies Had A PTT
Only 15% Had An ATT
The PTT Is The One Most Often Missed . If Only ATTs Were Treated, 5 Out Of 6 Babies Would Not Have Been Diagnosed!

Whats The Difference? TBD Shortly

Int J Pediatr Otorhinolaryngol 2012 Sep;76(9):1236-40.

A retrospective review of frenotomy in neonates and infants with feeding difficulties

Mark W Steehler , DO
Matthew K Steehler, MD
Earl H Harley, MD

Objectives: To measure maternal breastfeeding benefit after infant frenotomy.

Results: Neonatal and infant consultations (N=367) were performed for feeding difficulties due to suspected ankyloglossia. 302 of these infants underwent frenotomy for ankyloglossia. A total of 91 mothers agreed to participate in a follow-up telephone survey regarding the intervention. Results showed that 80.4% of mothers strongly believed the procedure benefited their child's ability to breastfeed, and 82.9% of mothers were able to initiate/resume breastfeeding after the procedure was performed. The belief that frenotomy significantly benefitted an infant's ability to feed significantly differed in patients that had the procedure performed in the first week of life (86%) as compared to infants that had the procedure performed ***after*** the first week of life (74%) (p<0.003).

Conclusions: Based on maternal observations, when frenotomy is performed on neonates with ankyloglossia and feeding difficulties in the first week of life, there is more benefit than when it is performed ***after*** the first week of life.

Frenotomy for ankyloglossia demonstrates a high degree of maternal satisfaction, is well tolerated and has been shown to ***improve breastfeeding and decrease pain*** and difficulty associated with breastfeeding

Take-Away?
We Need To Dx Within The First Week of Life For Maximum Benefit!!
But There Is Still Significant Benefit After 1 Week

Pediatrics 2011 Aug;128(2):280-8.
Efficacy of neonatal release of ankyloglossia: a randomized trial
Melissa Buryk MD MPH
David Bloom MD
Timothy Shope MD MPH
Naval Medical Center, Portsmouth, VA

Methods: Over a 12-month period, neonates who had difficulty breastfeeding and significant ankyloglossia were enrolled in this randomized, single-blinded, controlled trial and assigned to either a frenotomy (30 infants) or a sham procedure (28 infants). Breastfeeding was assessed by a preintervention and postintervention nipple-pain scale and the Infant Breastfeeding Assessment Tool. The same tools were used at the 2-week follow-up and regularly scheduled follow-ups over a 1-year period. The infants in the sham group were given a frenotomy before or at the 2-week follow-up if it was desired

Results:The frenotomy group improved significantly more than the sham group ($P < .001$). Breastfeeding scores significantly improved in the frenotomy group ($P = .029$) without a significant change in the control group. All but 1 parent in the sham group elected to have the procedure performed when their infant reached 2 weeks of age, which prevented additional comparisons between the 2 groups.

Conclusions: We demonstrated immediate improvement in nipple-pain and breastfeeding scores....This should provide convincing evidence for those seeking a frenotomy for infants with signficant ankyloglossia

CRITICAL POINT: Breastfeeding should NOT be painful. It should be a wonderful experience creating a mother-child bond. Its been shown to release endorphins and positively affect the well-being of mother and child.

If BF was painful, the human race would have gone extinct eons ago.

Aerophagia Induced Reflux in Breastfeeding Infants With Ankyloglossia and Shortened Maxillary Labial Frenula (Tongue and Lip Tie)

Dr. Scott Siegal
Stonybrook University School of Medicine

Int'l J Clin. Pediatrics 2016: 5: (1) 6-8

Retrospective analysis of 1000 infants over 5 years
Results: The Study Shows A Correlation Between Aerophagia In Infants With Short Maxillary Labial Frenula And Ankyloglossia And Reflux

Conclusion: There Appears To Be A Relationship Between Maxillary Lip Tie And Aerophagia Induced Reflux. Treatment Of These Infants With A Relatively Simple Frenotomy Procedure May Reduce Or Eliminate Reflux. As A Result, Many Of These Infants May Be Spared From Invasive Testing Or Medications That Have Been Shown To Have Potential Side Effects.

What Are The Symptoms of Aerophagia?
TBD Shortly
Whats The Big Deal About H2 Blockers & PPIs in Infants?
Lets Discuss Now!!

Pediatrics 2019 Jul;144(1):e20182625.
Early Acid Suppression Therapy Exposure and Fracture in Young Children
Laura Malchodi MD
Kari Wagner MD
Apryl Susi MS
Gregory Gorman MD MHS
Elizabeth Hisle-Gorman PhD

Department of Pediatrics, Walter Reed National Military Medical Center, Bethesda, Maryland.
Pediatrics, D 35th Medical Group, Misawa Air Force Base, Misawa, Japan; and.
Department of Pediatrics, Uniformed Services University of the Health Sciences, Bethesda, Maryland.

Methods: A retrospective cohort of children born 2001 to 2013 who were followed for ≥2 years was formed. Those with osteogenesis imperfecta, cholestasis, or child maltreatment were excluded. Prescription data were used to identify AST(Acid Supression Therapy) prescription before age 1 year. *International Classification of Diseases, Ninth Revision, Clinical Modification* codes identified fractures after age 1 year. A Cox proportional hazard analysis assessed fracture hazard and was adjusted for sex, prematurity, low birth weight, previous fracture, anti-epileptics, and overweight or obesity

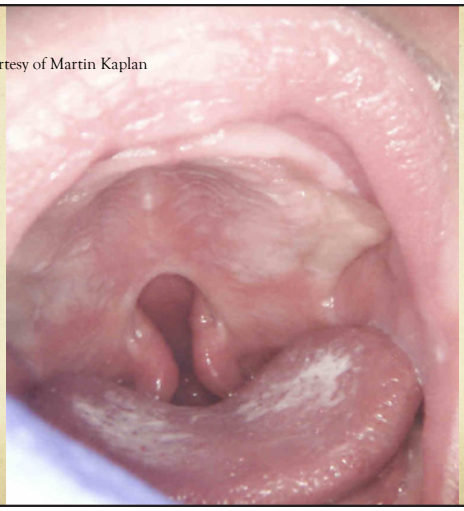
Results: Of 851,631 included children, 97,286 (11%) were prescribed AST in the first year of life; 7998 (0.9%) children were prescribed PPI, 71 578 (8%) were prescribed H_2RA, and 17,710 (2%) were prescribed both a PPI and H_2RA. Infants prescribed AST had an earlier median first fracture age (3.9 vs 4.5 years). After adjustment, increased fracture hazard was associated with PPI use (21%) and PPI and H_2RA use (30%)... Longer duration of AST treatment and earlier age of first AST use was associated with increased fracture hazard.

Conclusions: Infant PPI use alone and together with H_2RAs is associated with ***an increased childhood fracture hazard***, which appears ***amplified by days of use and earlier initiation of ASTs***.
Use of AST in infants should be weighed carefully against possible fracture

This Is What Happens When Pediatricians Are Not Trained In TT
Dx and Treatment
OR
Just Don't Look In The Mouth

This 6-day-old male baby was referred to my colleague by a midwife. He was born at home, was full term, and weighed 7 lbs. 9 oz. (3,430.29 gm).
Feedings were frequent and difficult from the beginning. The mother was instructed to pump for exclusive expressed breastmilk feedings. The baby was irritable, fatigued, and sleepy; he leaked milk both orally ***and nasally***.
On day three, the baby's weight was the same. The parents took the baby to the emergency room, concerned he was dehydrated. During the hospital intake, the parents expressed their concern about a possible lip-tie and tongue-tie as the cause for the failure to intake adequate milk and sustain appropriate growth.

The attending physician told the parents that there was ***no such problem*** and that they were misinformed. An IV was inserted for fluid replacement, and the infant was discharged the same day.
By day six, the baby had gained only 1 oz. (28.35 gm). The parents continued to notice the oral and nasal leakage and decided to follow up on the recommendation from the midwife to have both frena evaluated.



The
PEEL ™
Technique

P*eristalsis*
E*levation*
E*xtension*
L*ateralization*

P*eristalsis –*
The Involuntary Constriction and Relaxation of the Muscles of the G.I Tract, Creating Wave-Like Movements That Push The Bolus of Food Forward.
E*levation*
E*xtension*
L*ateralization*

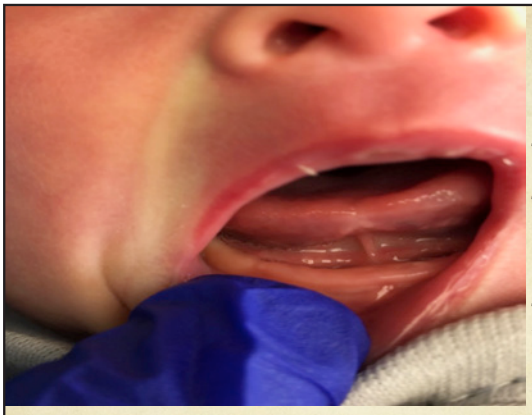
P*eristalsis*
E*levation:* **Moving the tongue up towards the roof of the mouth to *compress the nipple against the soft/hard palate***
E*xtension*
L*ateralization*

***P**eristalsis*
***E**levation*
***E**xtension: Sticking The Tongue PAST The Vermillion Border*
***L**ateralization*

***P**eristalsis*
***E**levation*
***E**xtension*
***L**ateralization: Moving The Tongue From Side To Side – Following Your Finger As You Place It On The Vermillion Border And Move It From Commissure to Commissure*

The Most Important Information You Can Take Away From This Presentation Is
WHAT TO LOOK FOR
You Need To Look For Things You Were Never Taught To Look For
My Intake Form Is
TWO PAGES Long....
SO
I Am Pretty Certain of the Dx
Before I Even Look Intraorally

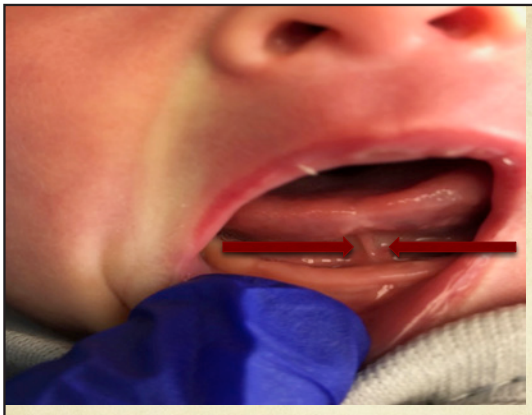
Does The Baby Have An Anterior Tongue Tie?
A Posterior Tongue Tie?
A Buccinator Tie – Unilateral? Bilateral??
Maxillary? Mandibular?
Maxillary LT? Mandibular LT?
Some of These?
All of These?
How Do You Diagnose?
HOW SIGNIFICANT ARE THEY TO BF?
LOOK CAREFULLY



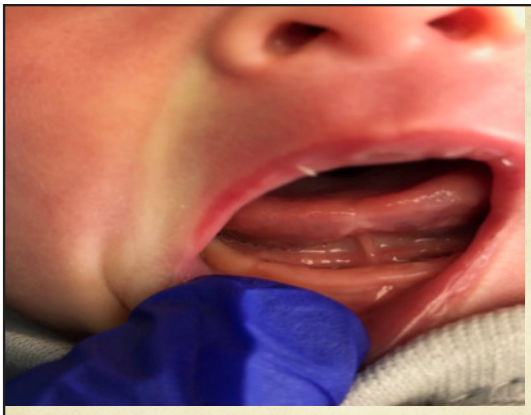
REMEMBER
PEEL

THERE IS NO ***EXTENSION***
TONGUE CANNOT EXTEND OUT OF THE MOUTH

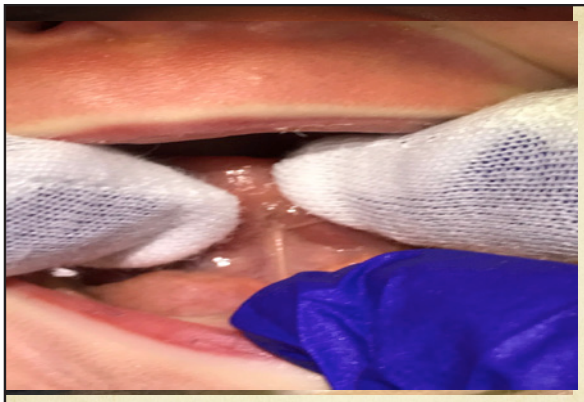
Typical Anterior Tongue Tie – from Tip of Tongue to the Mandibular Ridge...Simple To Diagnose



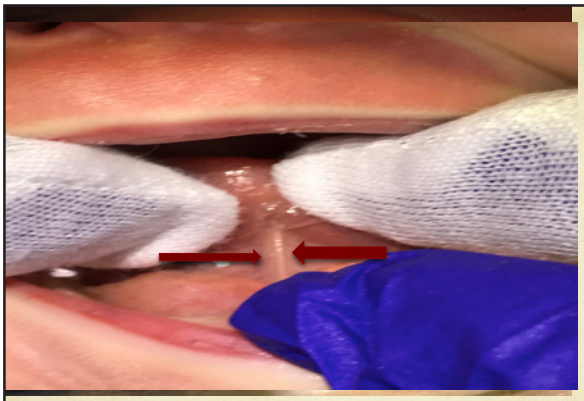
Typical Anterior Tongue Tie – from Tip of Tongue to the Mandibular Ridge



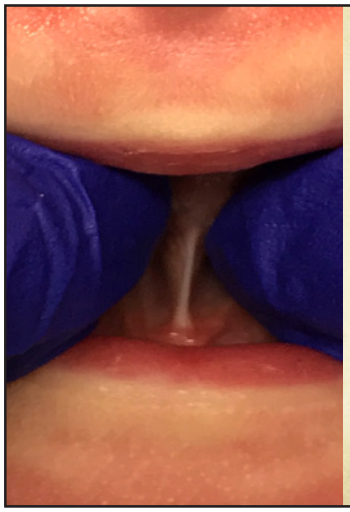
Typical Anterior Tongue Tie – from Tip of Tongue to the Mandibular Ridge



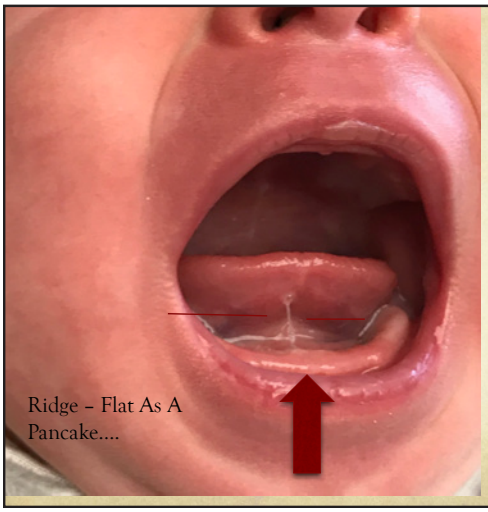
Typical Posterior Tongue Tie – from the ventral surface of the tongue to the floor of the mouth – can sometimes attach to the genioglossus muscle – in severe cases can impact position of the hyoid bone.



Typical Posterior Tongue Tie – from the ventral surface of the tongue to the floor of the mouth – can sometimes attach to the genioglossus muscle – in severe cases can impact position of the hyoid bone.

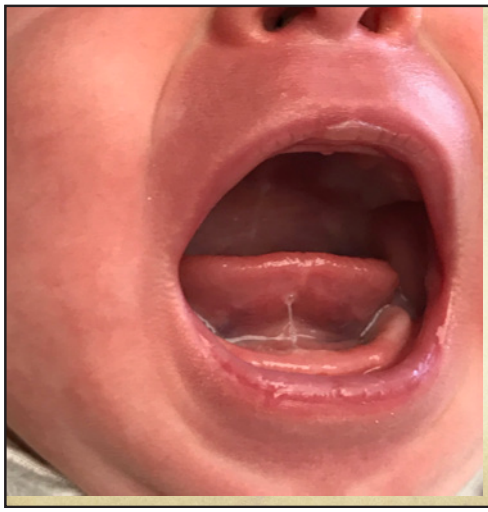


Sometimes tongue ties are
quite obvious- a nice, thick band of tissue



Ridge – Flat As A Pancake....

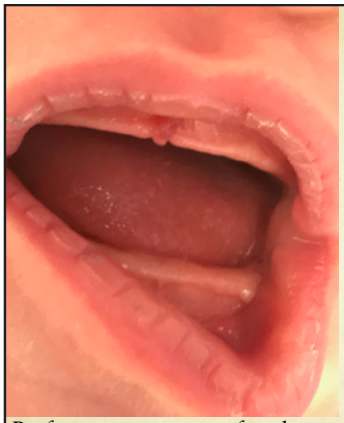
Notice how delicate and gossamer-like this tie is – but enough to prevent a good latch. Note complete lack of elevation of tongue.



REMEMBER
PEEL

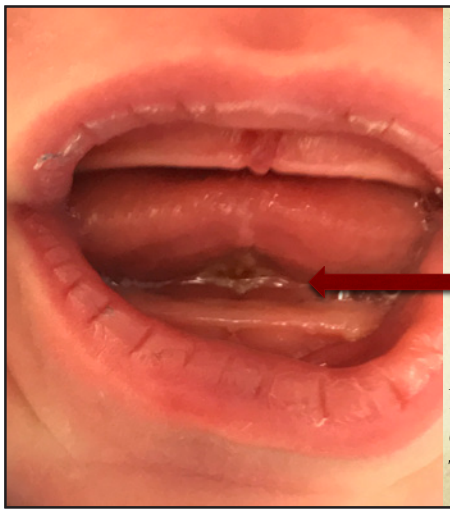
ELEVATION
-
THE TONGUE IS NOT ELEVATING TOWARDS THE PALATE

Why are we looking at cobblestones?
IMPORTANT diagnostic criterion
for you to know



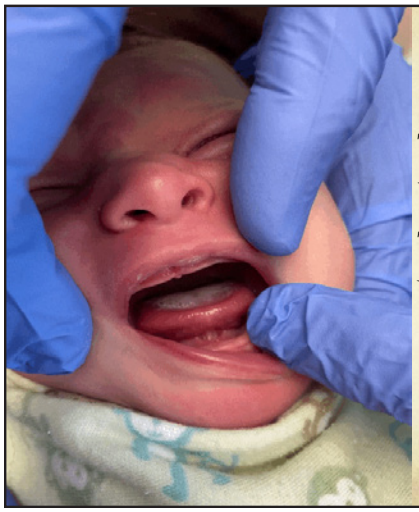
Note appearance of the mandibular ridge – flat as a pancake with redundant tissue towards the buccal. Why? The infant is CHOMPING on mother's nipple with his maxillary and mandibular ridges, flattening the ridges and creating redundant tissue. WHAT DOES THIS MEAN FOR MOM?

Perfect presentation of tied tongue at rest. Resting on the mandibular ridge or behind the ridge – NOT anterior to ridge



Perfect elevation post-op.
Note tongue position at roof of mouth

Note very conservative TT release



ELEVEN CRITICAL THINGS TO NOTICE ON THIS VIDEO!!!

How Many Can You List?

The Most Important Information You Can Take Away From This Presentation Is
WHAT TO LOOK FOR !

We All Have The Skills To Perform The Procedure.
The Question is WHEN Should It Be Performed?

You Need To Look For Things You Were Never Taught To Look For

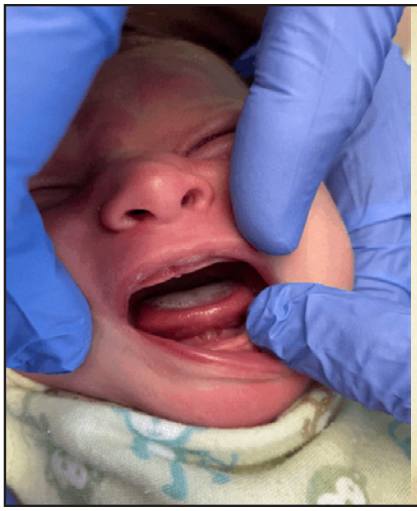
OPEN YOUR EYES AND LOOK!!

Does Baby Have ***Any*** Restriction?
If so, Anterior or Mid-Tongue or Posterior?

Any Buccinator Ties ?? Unilateral? Bilateral?
Maxillary? Mandibular?
Some of These? All of These???

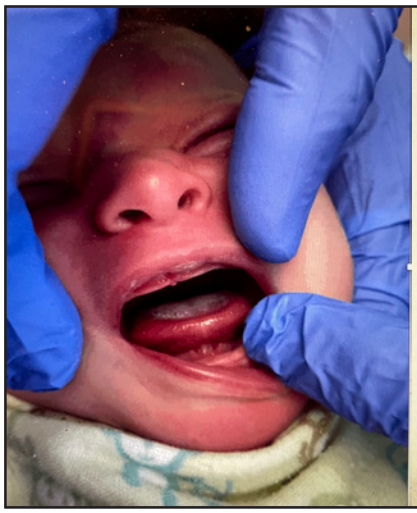
How Do You Diagnose?
Where Is This Tongue At Rest?

What ***FUNCTIONALITY*** is impacted?
YOU MUST LOOK CAREFULLY



NO PEEL

That's 4....What Else?

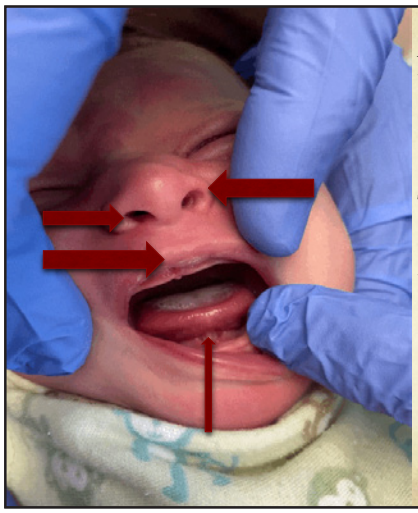


Milk On Dorsum

Bowl Shaped Tongue

Posterior Tongue Tie
Upper Lip Blister

That's 8....What Else?



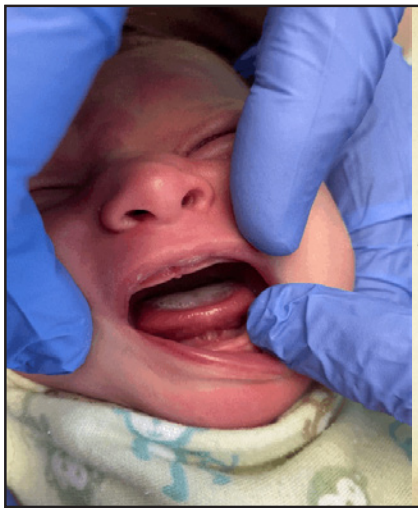
Asymmetric Nares...***FLARING!***

That's 9....

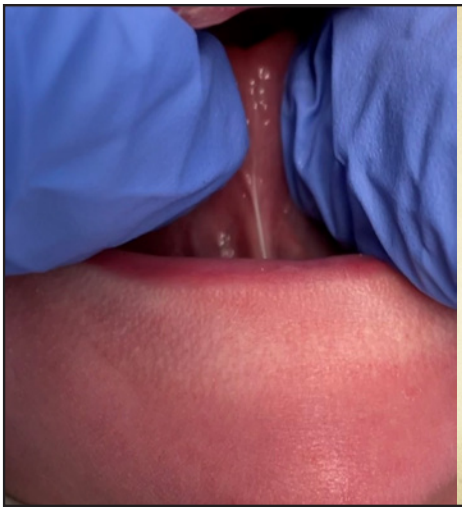
Need 2 More

Let's Take A Closer Look At The Tie

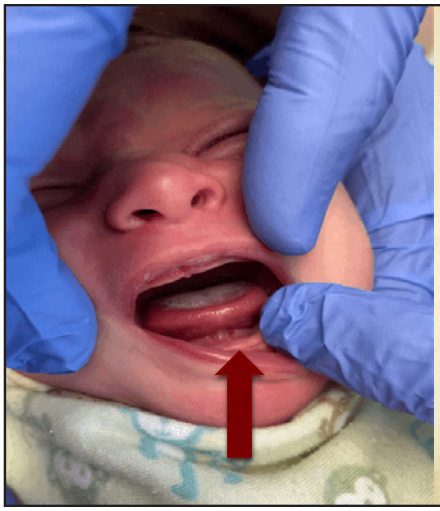
Examine The Ventrum Of The Tongue



Not Much To Look At In This View....

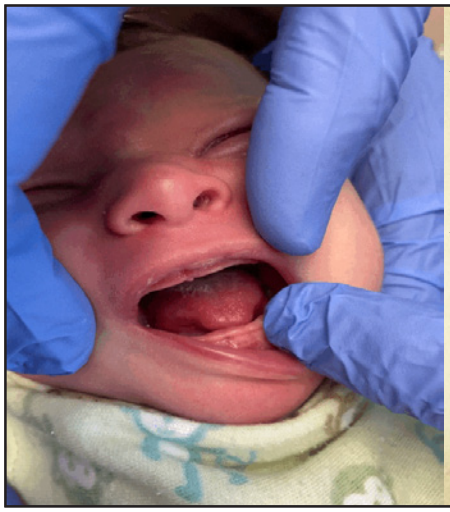


But When Skillfully Lifted Reveals A Significant Restriction!



Redundant Tissue On Ridge

That's #10



And # 11... Retruded Position Of Tongue At Rest.....

Posterior to Ridge, Rather Than Anterior To Or Sitting On The Ridge

What is the purpose of palatal rugae?

Intake Form Questions:

Nipples:
Bruised?
Cracked?
Everted?
Pancaked?
Lipstick Shaped (Elongated)?
Misshapen?
NONE OF THIS IS NORMAL!!

Swollen Breasts?
Engorged?
Mastitis?

Milk Supply:
Strong Letdown?
Weak Letdown?
Losing Supply?
Unsure?

Do You Use A Nipple Shield?
How Many Times/Day Do You BF?
How Long Per Side?

Any Signs Of Postpartum Depression?

Who Dx TT?
Pediatrician?
Hospital LC?
Private LC?
Has It Been Treated Before?
Any Posture/Head Position Favoritism – Leaning To One Side?
(R/O Torticollis)

Baby bobs on and off breast?
Baby slides off nipple?
Baby falls asleep on breast?
Lip or tongue feels weak?
Can't retain a pacifier?
Arching back?
Balling fingers into fists?

Clicking Noises When BF? (TBD)

Leakage of BM From Mouth?
From Nose?

#1 Complaint From Mom
AND
1 Reason For Terminating BF:
PAIN
When Baby Tries To Latch, Pain Is Terrible
Imagine 2 Pieces Of Bone (M/M)
Covered By A Thin Layer Of Mucosa
Squishing Your Nipple As The Baby Tries To Grasp It!!

You SHOULD know
the AAP recommends
AND
the WHO

recommends
TWO YEARS
of BF

HOW CAN MOMS BF IF ITS SO PAINFUL?

Malpractice Prevention # 1

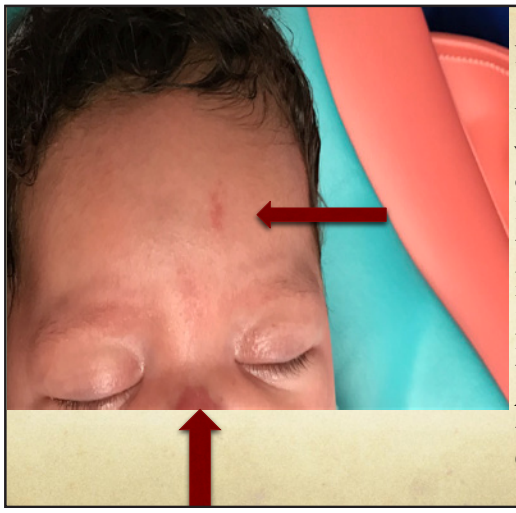
CRITICAL:
Vitamin K Shot?
How Do You Word This Question?

I Don't Need VKDB In My Office!!!

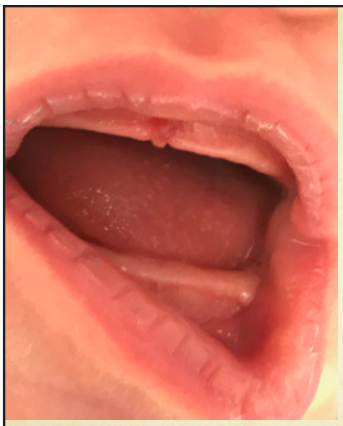
DO NOT ASK:
Did You Receive A Vitamin K Shot?

ASK:
Did You ***REFUSE*** A Vitamin K Shot?

Malpractice Prevention # 2

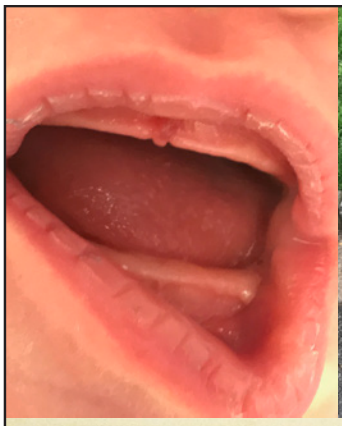


Note bruise on forehead and burst blood vessels on nose. Point this out to the parents BEFORE you perform any treatment. AND of course take photos! CALL CPS???



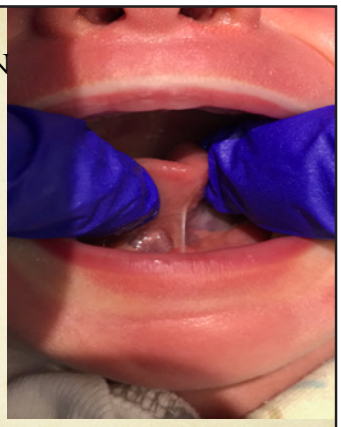
LOOK AT THE LIPS

COBBLESTONE-LIKE APPEARANCE
CAN BE DIAGNOSTIC OF A DEHYDRATED BABY-
NOT GETTING ENOUGH NUTRITION



NOTE TYPICAL HEART SHAPED PRESENTATION

TIED DOWN IN THE CENTER, BUT ABLE TO LIFT AT THE SIDES

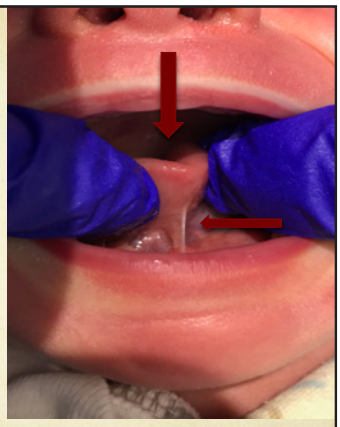


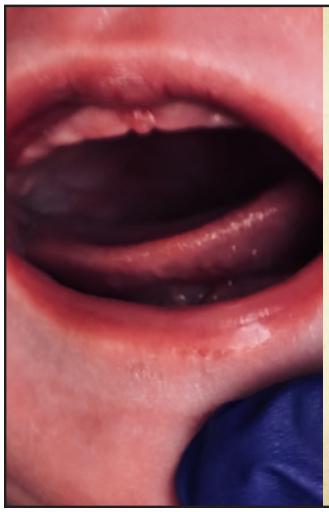
HEART SHAPED TONGUE
LIFTING AT THE EDGES
TIED DOWN IN THE CENTER

THIS IS A CRITICAL DIAGNOSTIC QUESTION TO ASK THE MOTHER: DOES SHE HEAR A CLICKING SOUND DURING HER ATTEMPT TO BREASTFEED?

THE CLICKING IS THE TONGUE ATTEMPTING TO ELEVATE, BUT THE FRENUM IS SNAPPING THE TONGUE BACK DOWN INTO PLACE

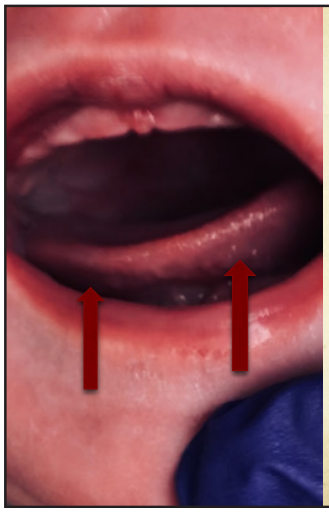
AN IMPORTANT QUESTION TO ASK AS PART OF YOUR ASSESSMENT ***BEFORE*** THE PROCEDURE





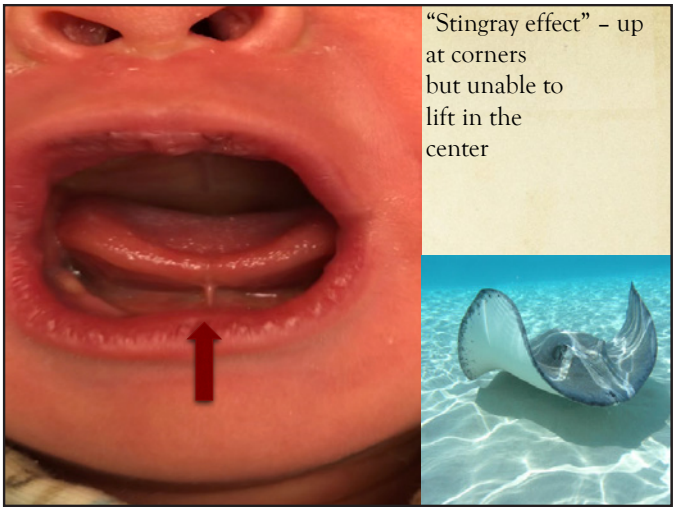
Uneven lift of tongue – left side raises significantly more than right side.
Significantly different milk transfer rate between left and right breasts. Submucosal tongue tie fibers were thicker on the right side of the midline

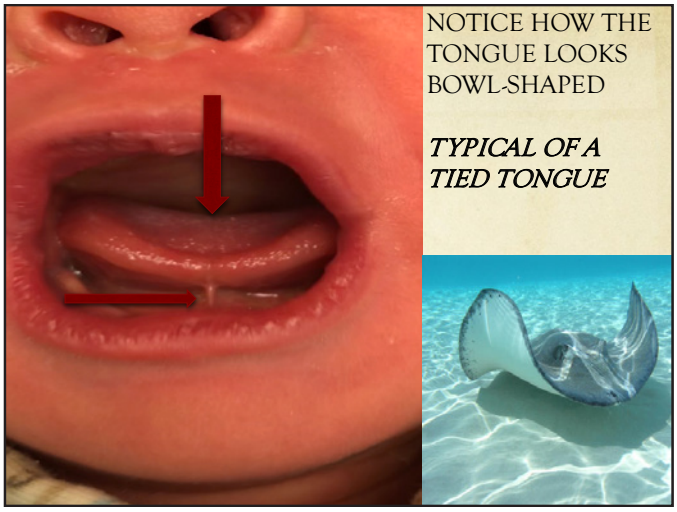
IMPORTANT QUESTION To Ask As Part Of Your Intake – Does The Baby Latch Better On One Side?



NOTE LEFT SIDE OF TONGUE RISES MORE THAN RIGHT SIDE OF TONGUE

YOU WILL NEED TO CUT MORE FIBERS TOWARDS THE RIGHT SIDE OF THE MIDLINE RATHER THAN THE LEFT SIDE OF MIDLINE

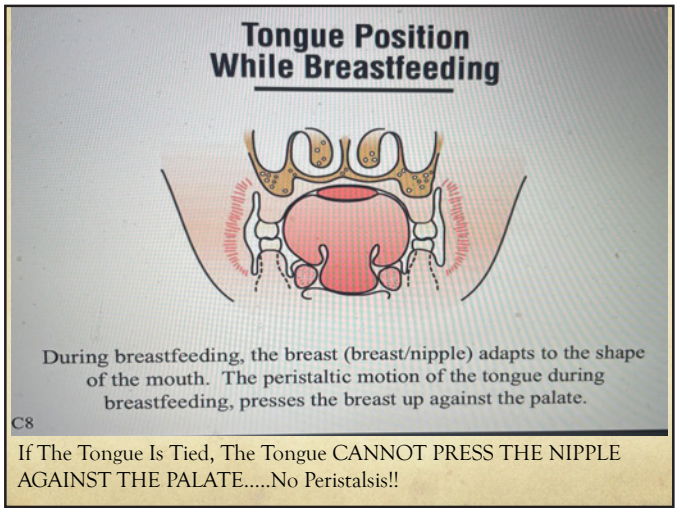




Another Diagnostic Clue:
Move Finger on Vermillion Border of Lip:
Tongue Should Follow Your Finger

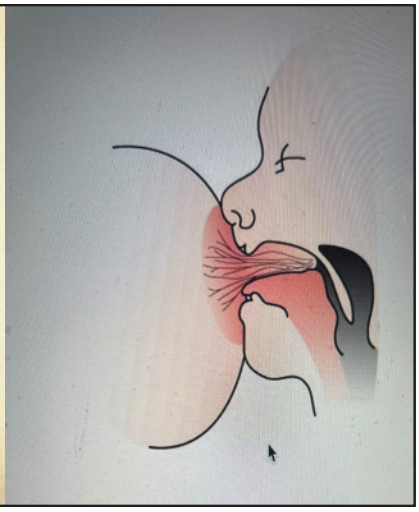
Another Diagnostic Clue:
Move Finger on Floor Of Mouth From Side To Side –
If There Is A "Speed Bump" – Something That Prevents You From Moving Your Finger From Side To Side, Thats A Tight Frenum

AEROPHAGIA SYMPTOMS
Bloated Belly
Abdominal Distension
Belching
Flatulence
AND A LOT OF SPIT UP
The Air Goes In And Has To Come Out Either End – Either As Flatulence Or As Spit Up
ALL QUESTIONS YOU NEED TO ASK DURING YOUR INTAKE ASSESSMENT!



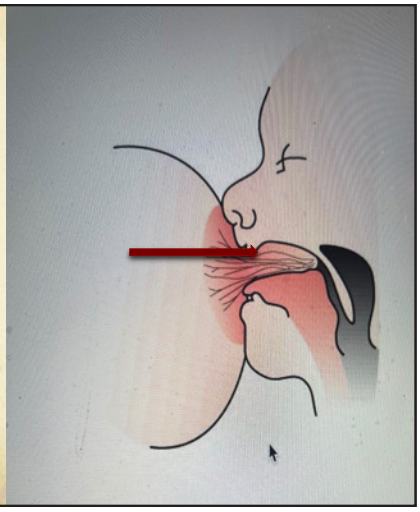
If The Tongue Is Tied, The Tongue CANNOT PRESS THE NIPPLE AGAINST THE PALATE.....No Peristalsis!!

The Tongue Has To Compress The Nipple Against The Palate. If Tongue Is Tied And Cannot Elevate, There Is NO SEAL – There Is A Gap That Allows AIR INTO THE MOUTH Along With Breastmilk.



Gap Allowing Air In Because Tongue Cannot Elevate

Air Goes In – Has To Come Out!! One Way Or Another



Bloated Belly
Abdominal Distension

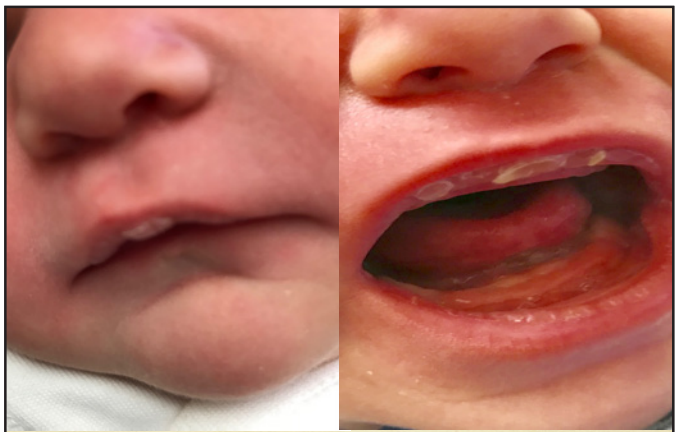
LOOK AT THE BABY'S BELLY!!
FEEL THE BELLY!
IS IT HARD?
IS IT SOFT?
DO NOT LOOK ONLY AT THE MOUTH!!
LOOK AT THE ENTIRE BABY-HEAD TO TOES!!

LOOK AT LEGS....ARE THEY CURLING UP? ARE THEY BICYCLING DOING THAT RELIEVES GAS ....IS BABY FLATULENT? GASSY?

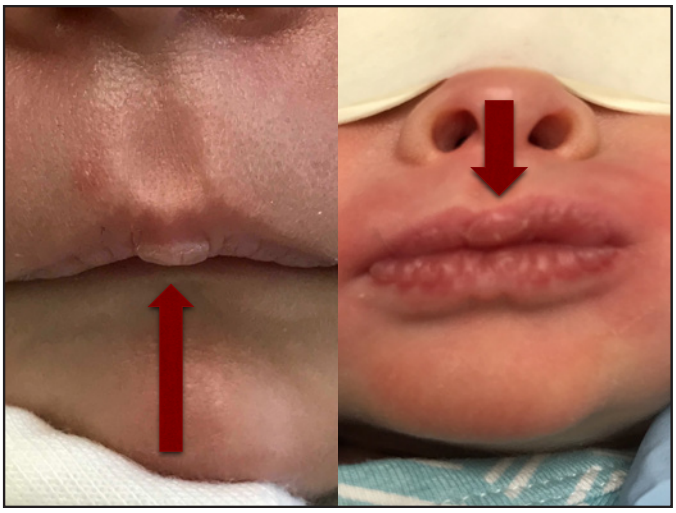
Why Do Lip Blisters Form?

As The Baby Tries To Grasp The Nipple, It CANNOT HOLD The Nipple in Its Mouth, So It Constantly Slides On And Off The Nipple

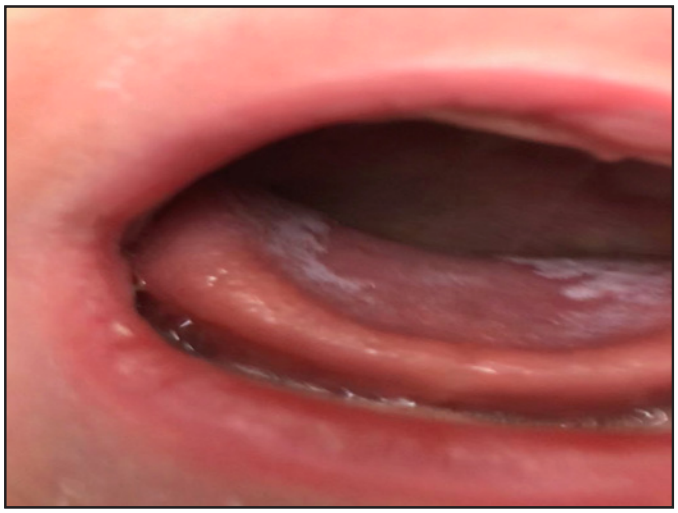
Result?
A Friction Burn
A Lip Blister

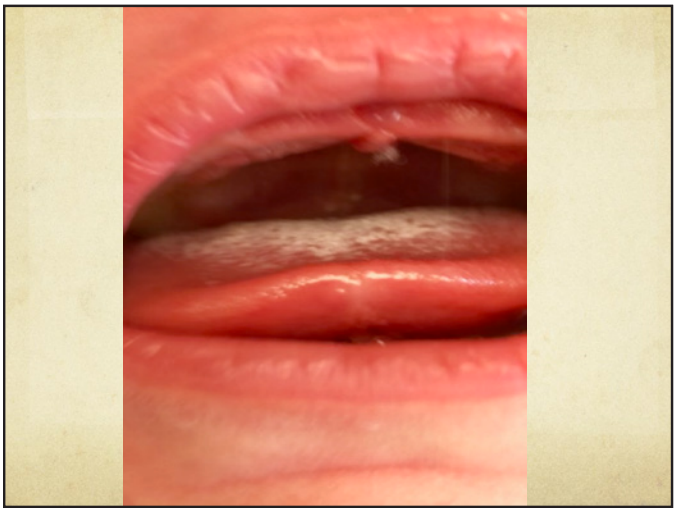


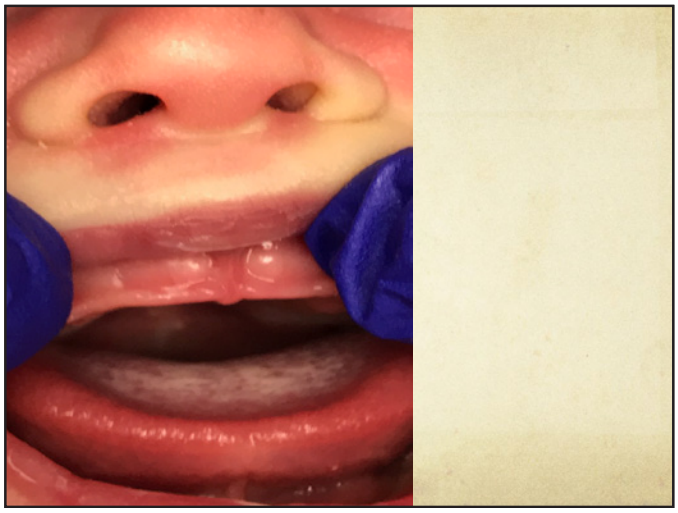
Typical presentations of lip blisters – a diagnostic criterion for a tight maxillary frenum. A tight maxillary frenum will prevent the upper lip from flanging over mommy's nipple, resulting in a less than ideal seal around the nipple – causing ***aerophagia*** and a gassy, flatulent baby

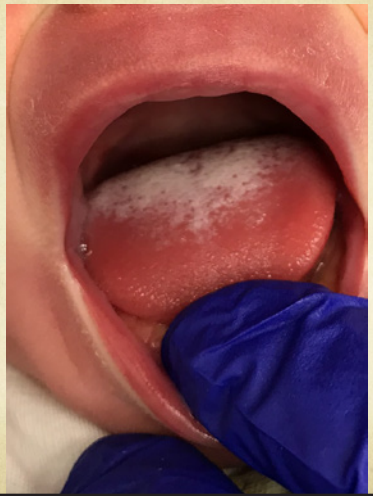


TEST:
Which of the following slides is Thrush and which is undigested milk?





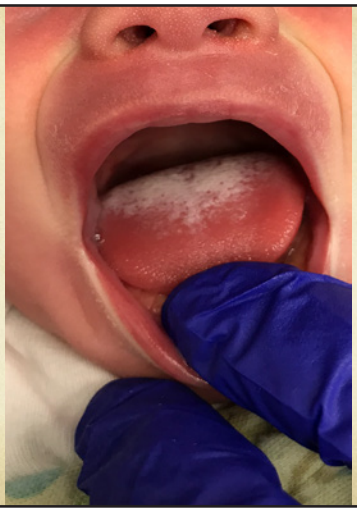




"Incidence of candida in newborns whose mothers did not have
candida vulvo-vaginitis is less than 1 percent"

Archives of Disease in Childhood
1977 (52) 747-749

If mommy is ***not*** on antibiotics....
AND
Did NOT Have Vaginal Candida...
how could the baby develop thrush?????



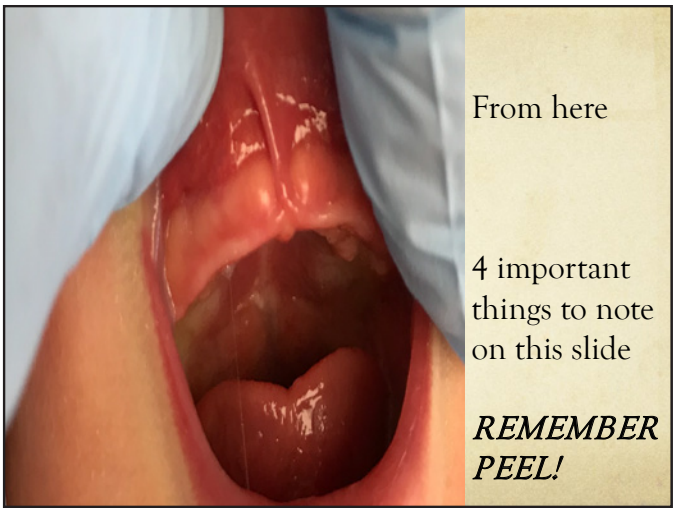
This is **NOT Thrush** – this **is undigested milk** on the dorsum of the tongue due to poor tongue ***peristalsis*** – as a result of a submucosal tongue tie.
MILK WIPES OFF EASILY
THRUSH DOES NOT

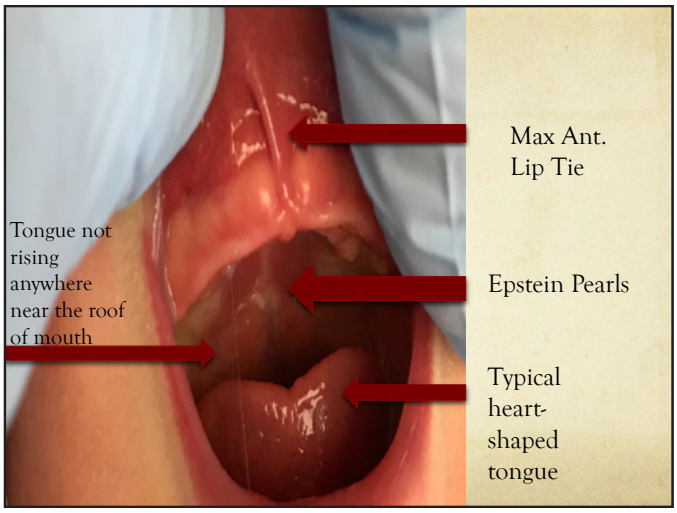
REMEMBER PEEL NO PERISTALSIS!

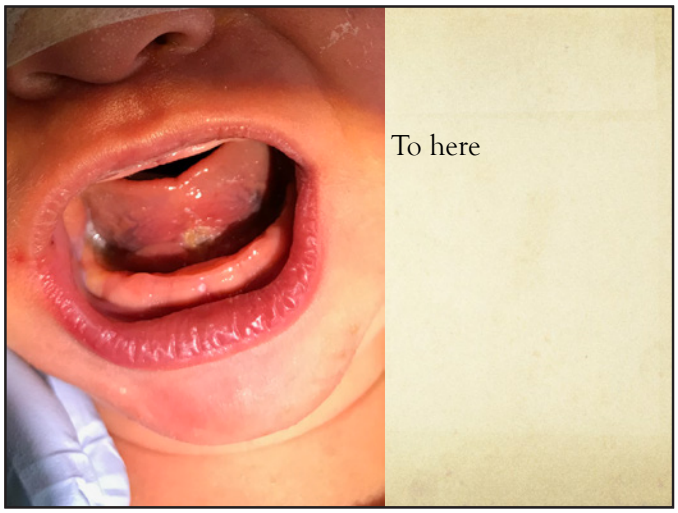
Wipe Off White Patch:
If It Comes Off Easily And Tongue Is Pink Underneath, Its MILK

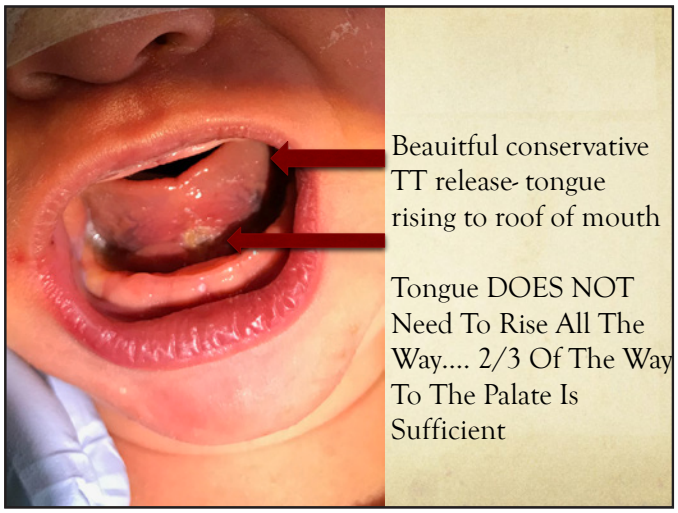
If It Comes Off With Difficulty And Tongue Is RED Underneath, Its Thrush

How do we get:

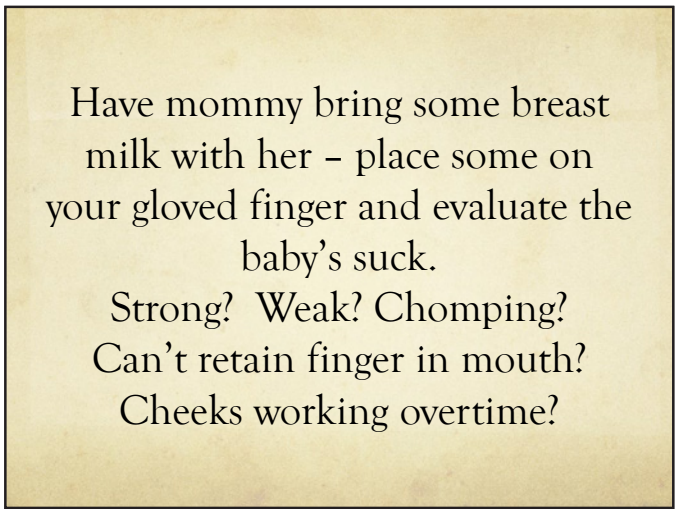

From here
4 important things to note on this slide
REMEMBER PEEL!


Max Ant. Lip Tie
Tongue not rising anywhere near the roof of mouth
Epstein Pearls
Typical heart-shaped tongue

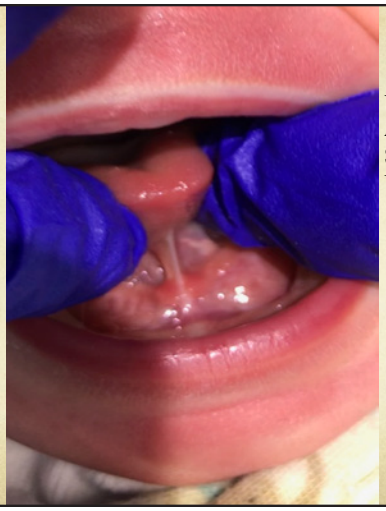

To here


Beauitful conservative TT release- tongue rising to roof of mouth
Tongue DOES NOT Need To Rise All The Way.... 2/3 Of The Way To The Palate Is Sufficient

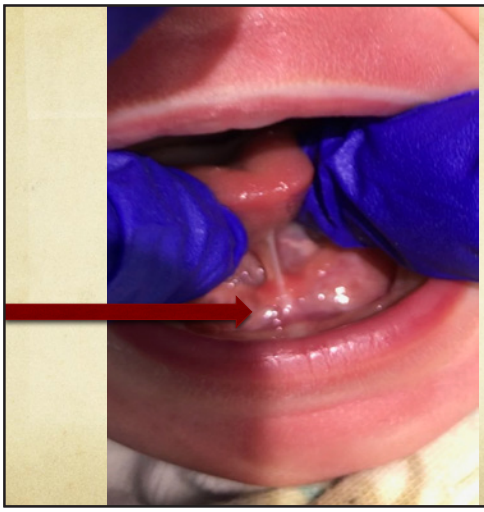

From here


Have mommy bring some breast milk with her – place some on your gloved finger and evaluate the baby's suck.
Strong? Weak? Chomping?
Can't retain finger in mouth?
Cheeks working overtime?

To here?



WHAT ANATOMICAL STRUCTURE DO YOU SEE?



STAY AWAY FROM THE SUBLINGUAL GLANDS!!!!!

LIP TIES

Classifications of Lip Ties

- Class 1 insertion of frenum into the mucosa above the attached gingiva
- Class 2 Insertion at the margin of the mucosa and attached gingiva
- Class 3 insertion into the attached gingiva
- Class 4 insertion into and through to the incisive papilla and palate

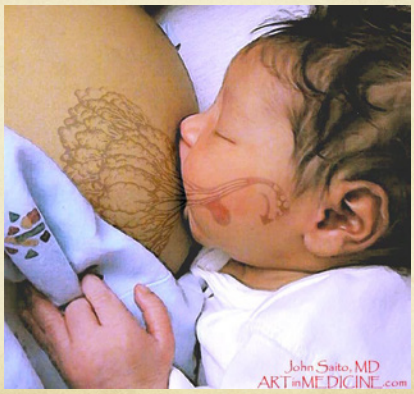
Clinical significance?????

NONE

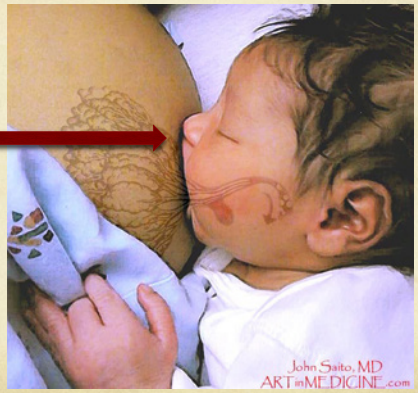
Just a label...that's all

Can you lift the lip to occlude the nares without blanching the frenum?

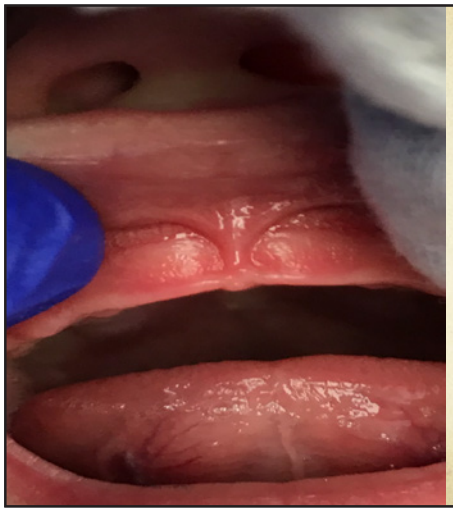
Can the lip flange over the nipple and capture the nipple...some areola....and some breast tissue?
REMEMBER...ITS CALLED BREASTFEEDING
NOT NIPPLE FEEDING!!!



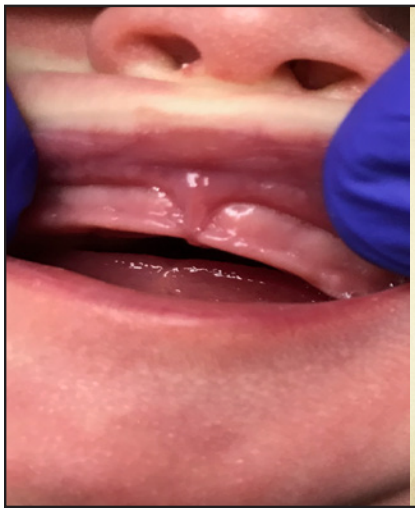
NOTICE WIDE GAPE



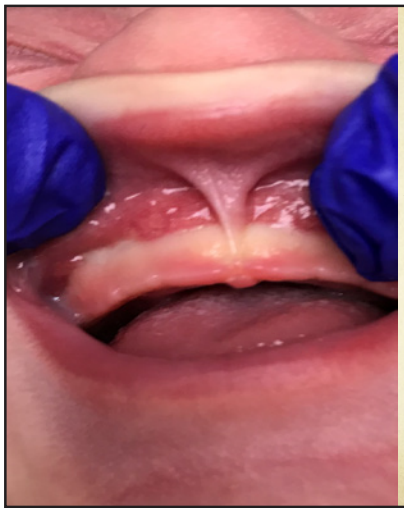
UPPER LIP FLANGES OVER NIPPLE



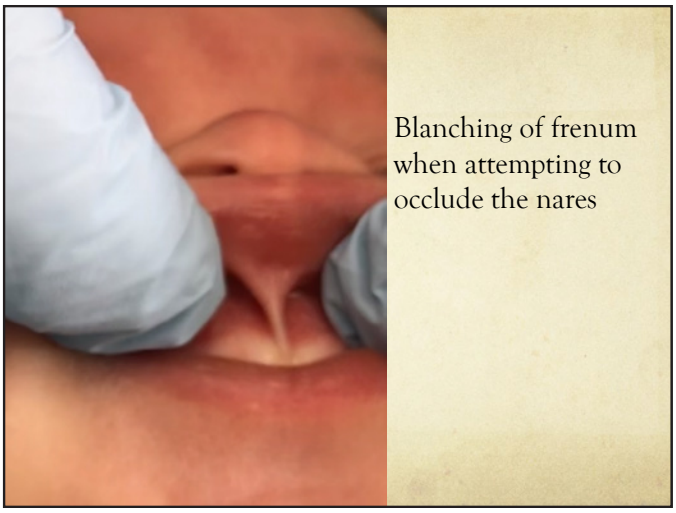
NOT ONTO RIDGE



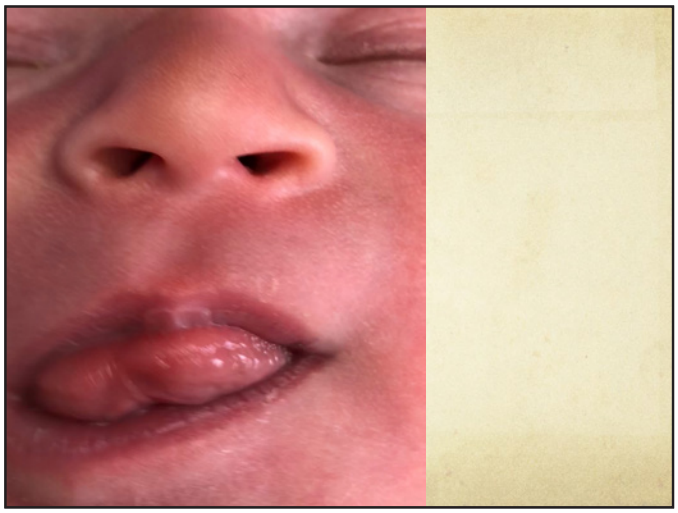
ONTO RIDGE AND OVER ONTO PALATE
Future ortho Problem....
BUT: will it affect Bf???

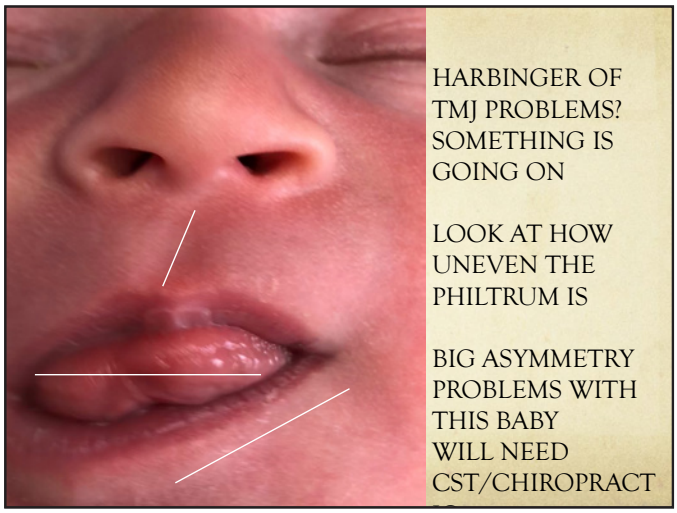


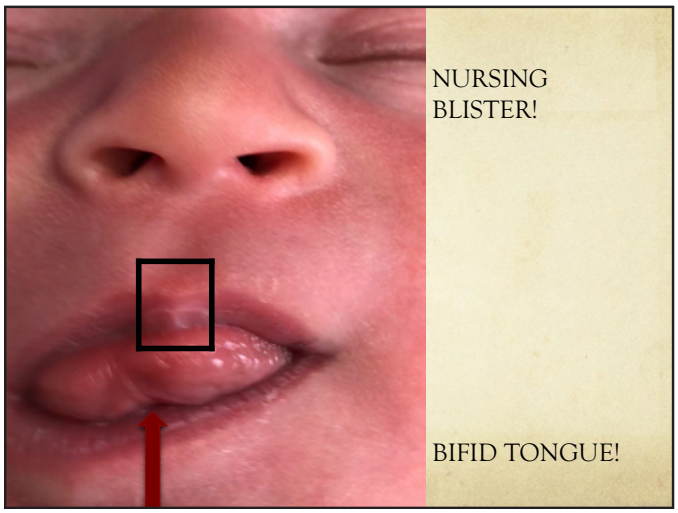
Occluding nares.
But look at how blanced
the frenum tissue is

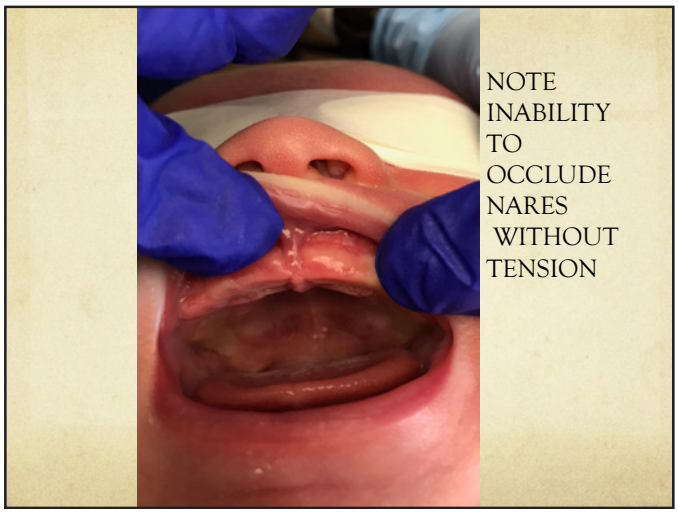


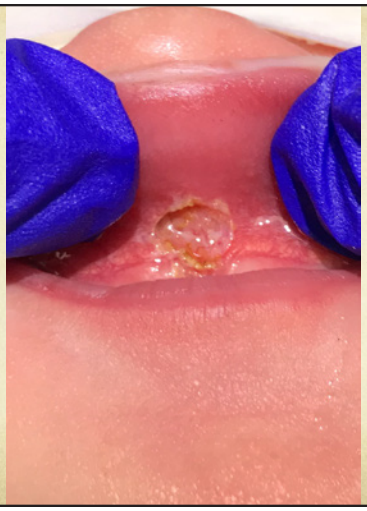
TEST:
4 things to look at on this next slide







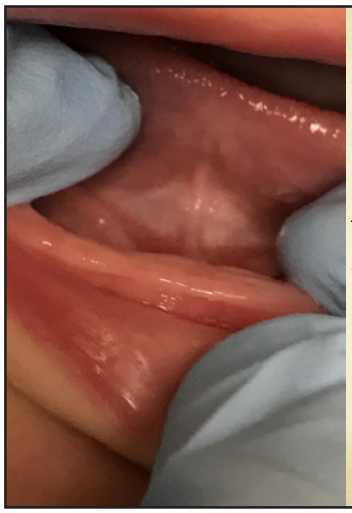




BEAUTIFUL
CLEAN
MARGINS

NO CHAR!!!

Any previous TT surgery?

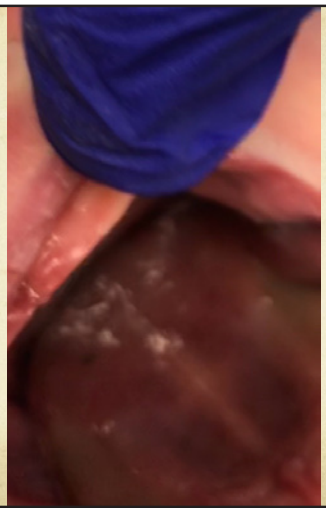


SCISSORS
RELEASE
THAT WENT BAD

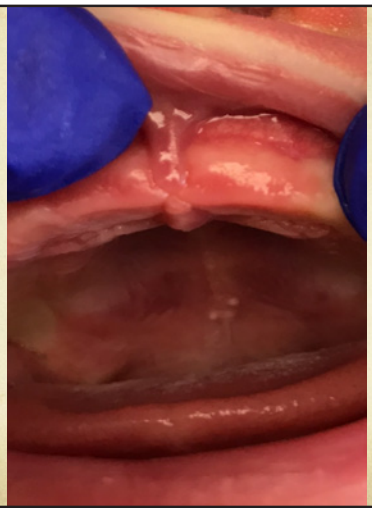
HAVE TO
RELEASE TT
AND
REDUCE SCAR
TISSUE

MUCH MORE
COMPLEX CASE –
POSSIBLY MORE
POST-OP
SEQUELAE

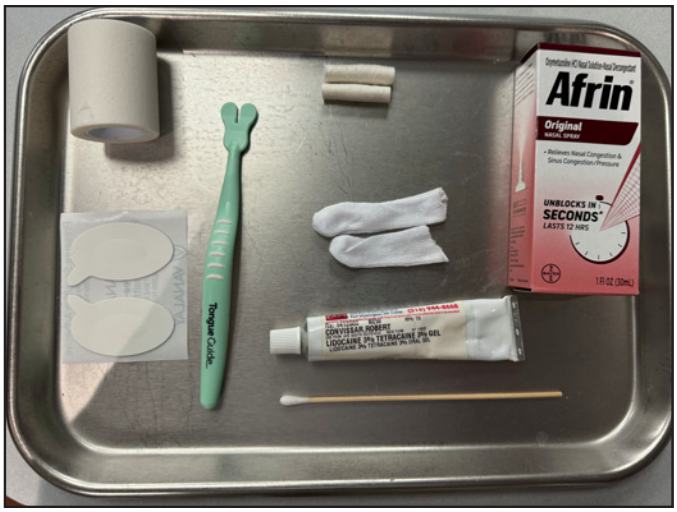
How is the palate?
Vaulted?
Normal?
Anything unusual?

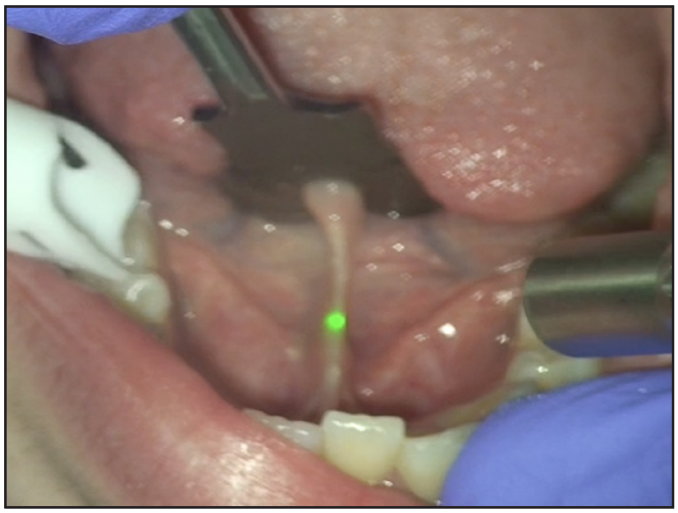


WHAT DO
YOU SEE?



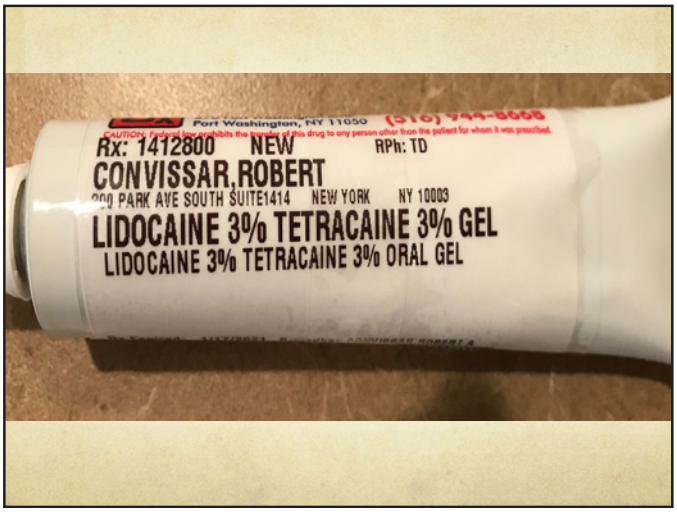
SET-UP





NOTE:
NO TOPICAL

Methemoglobinemia is commonly caused by exposure to medical substances, such as benzocaine

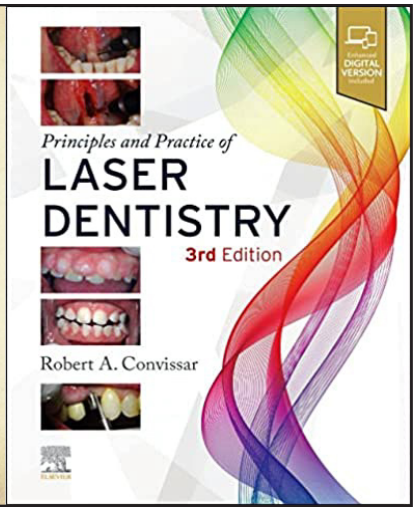


Want More Information On
TONGUE TIES AND LASERS?

AVAILABLE
ON
AMAZON

Barnes and
Noble

Elsevier



For 2 Day Live Workshops
Go To:
www.fullspectrumseminars.com
click on ***Upcoming Seminars***

Robert A. Convissar, D.D.S.,
F.A.G.D.
Diplomate, American Board
of Laser Surgery

SELF EVALUATION

Tongue-Tie and Lip-Tie in Infants: Diagnosis, Implications, and Intervention for Breastfeeding Success

1. Tongue Tie release has been mentioned in the literature as far back as:

a. The Korean War era (1950s)
b. Pre- World War I
c. The Vietnam War Era (1960s)
d. The Old and New Testaments

2. The most common Tongue Tie is a(n):

a. Anterior TT
b. Posterior Tongue Tie
c. Lower Lip Tie
d. All are equally common

3. Treating gastric reflux in newborns with proton pump inhibitors and H2 Receptor agonists

a. Should be considered standard of care
b. Has few, if any side effects
c. Results in earlier first fractures in children
d. Should be undertaken before tongue tie release is considered

4. Which of the following are signs of poor latch?

a. Clicking noise during breastfeeding
b. Baby bobs on and off breast
c. Breastfeeding is painful
d. All of the above

5. The American Academy of Pediatrics and World Health Organization recommends breastfeeding for:

a. One year
b. 6 Months
c. Two years
d. As long as the baby shows a desire to continue breastfeeding

6. Signs of aerophagia include:

a. Excessive flatulence
b. Excessive spit-up
c. Abdominal distension
d. All of the above

7. Thrush:

a. Wipes off easily
b. Is very common in newborns
c. Is related to poor peristaltic activity
d. None of the above

8. For analgesia on newborns, which of the following is acceptable:

a. Regular topical benzocaine is ok to use
b. A few drops of lidocaine without epinephrine is injected into the frenum
c. Either of the above is acceptable
d. None of the above is acceptable

9. A baby who has not had a Vitamin K shot:

a. Is of little to no concern when using a laser
b. Has few, if any adverse sequela
c. Could have postoperative bleeding
d. Can easily be managed in the office

10. Which of the following has been associated with breastfeeding?

a. Reduction in Otitis Media
b. Reduction in Respiratory Illnesses
c. Reduction in Gastroenteritis
d. All of the above

11. Tongue tie release results in all of the below EXCEPT:

a. Less reflux
b. No change in maternal nipple pain
c. More rhythmic sucking
d. Superior latching to nipple

12. Epstein Pearls:

a. Can affect nipple pain
b. Can affect latching
c. Both of the above
d. None of the above

Answer Key: 1. D, 2. B, 3. C, 4. D, 5. C, 6. D, 7. D, 8. D, 9. C, 10. D, 11. B, 12. D

Emergency Endodontics and Trauma Management: Clinical Case Review
Gary Glassman, DDS

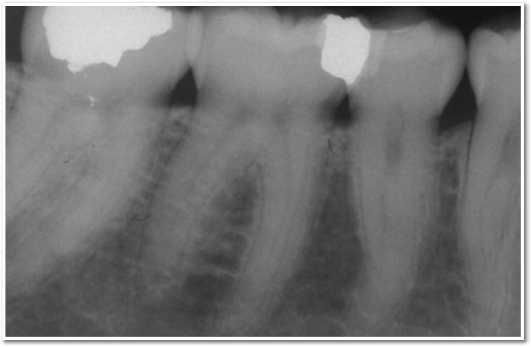
Case Presentations

The Problem

- 62 year old female patient was referred for endodontic treatment of mandibular right second premolar.

Chief Complaint

- Had shallow filling done 2 months before
- Sensitivity to cold since, tolerable but annoying



Medical History:

- Asthma.

Clinical Examination:

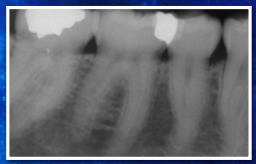
- Normal to percussion , palpation. Sensitive to cold and hot compared to adjacent teeth but resolves once stimulus is removed.

Radiographic Examination:

- Recent restoration.

Diagnosis

Reversible Pulpitis



Solution

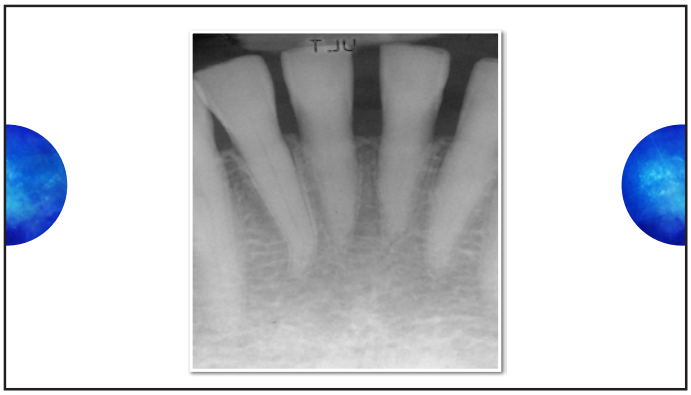
Crest Gum and Sensitivity

The Problem

- 67 year old female patient presents with discomfort in the mandibular anterior region.

Chief Complaint:

- Teeth hurt when I bite. Pain is worse in the morning when I get up.



Medical History:

- Non contributory.

Clinical Examination:

- Mandibular anterior teeth all respond within normal limits to all testing criteria. Incisal wear pattern in heavy.

Radiographic Examination:

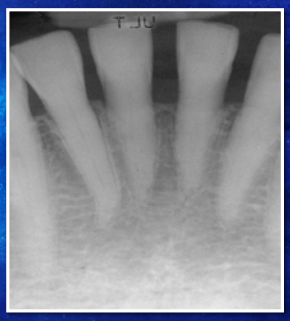
- Calcification of the canals.

Diagnosis

Bruxism And Grinding

Solution

Night Guard



The Problem

- 43 year old female patient was referred for surgical treatment of failing root canal on maxillary left second premolar.

Chief Complaint:

- Tooth never felt right since treatment was done 1 year ago.
- Had crown placed on the tooth but symptoms still persisted.
- Hot bothers the tooth.
- Dentist said tooth needs a surgical treatment.

Medical History:

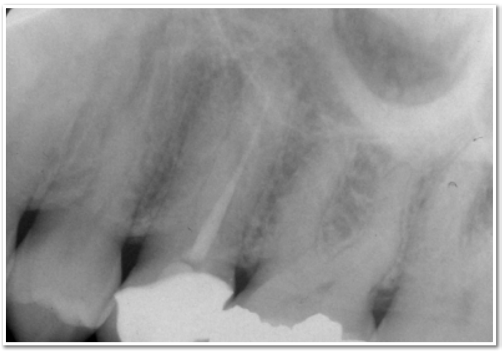
- Non contributory.

Clinical Examination:

- Sensitive to percussion, palpation, hot.
  No pockets or mobility noted.

Radiographic Examination:

- Previous root canal treatment with a periapical radiolucency.
- Untreated canal.

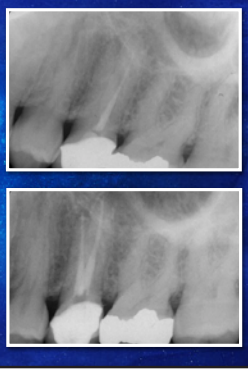


Diagnosis

Previously Treated: Symptomatic Apical Periodontitis
Untreated Buccal Canal

Solution

Retreatment

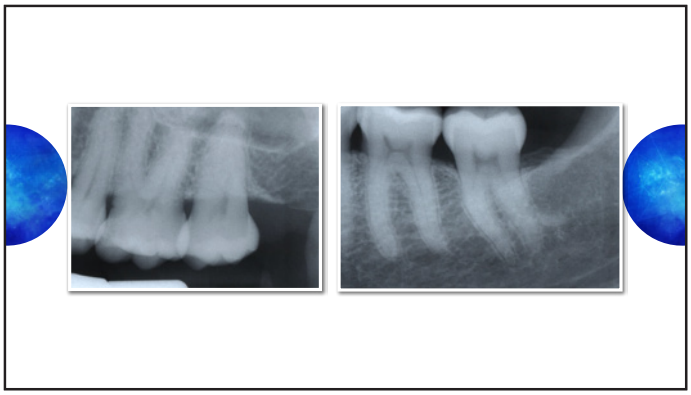


The Problem

- 58 year old male was referred for examination in maxillary and mandibular posterior region. Dentist suspects a vertical root fracture in maxillary left first molar and mandibular left second molar.

Chief Complaint:

- Both teeth have prolonged cold sensitivity and pain with chewing.
- Feels the pain is like an electrical current.
- Pain comes and goes and feels like a burning sensation which comes in waves.
- Pain sometimes when he yawns.



Medical History:

- Non contributory.

Clinical Examination:

- No restorations or small resin restorations in the maxillary and mandibular posterior.
- All teeth respond within normal limits to all testing criteria.
- Gingival tissues appear normal.

Radiographic Examination:

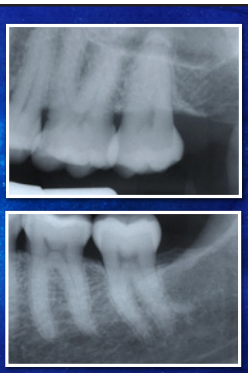
- No pathology noted.

Diagnosis

Trigeminal Neuralgia
Atypical Facial Neuralgia

Solution

Medication (amitryptoline)



Follow up:

- Saw patient 3 months later. No change.
- However, was not taking his medication.

Second follow up:

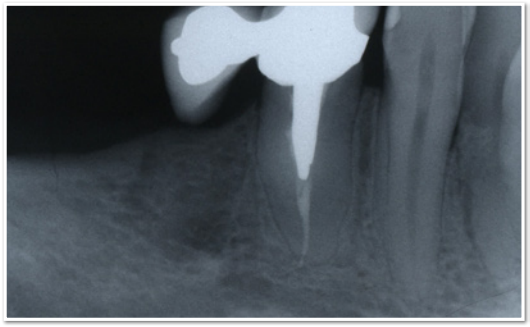
- Saw patient 3 months later. Pain no longer present.
- Patient now taking medication.

The Problem

- 55 year old female patient was referred for a surgical treatment of mandibular right first premolar.

Chief Complaint:

- Pain upon biting in lower right.
- Pain especially when food placed on back tooth.



Medical History:

- Non contributory.

Clinical Examination:

- Mandibular left first premolar responds within normal limits to percussion and palpation.
- Pain to biting when object places on cantilever pontic.

Radiographic Examination:

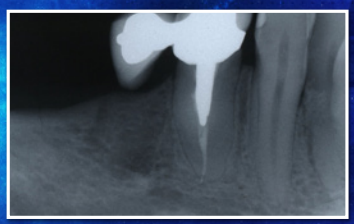
- No pathology.

Diagnosis

Occlusal Trauma From Cantilever Pontic

Solution

Remove Cantilever Pontic and Replace with Implant or RPD



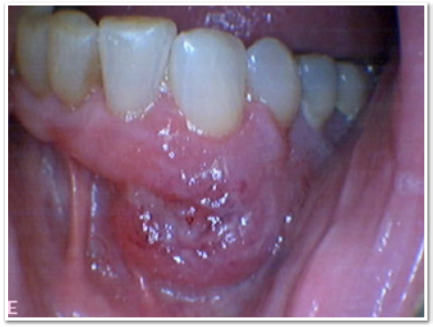
HERE'S A CASE FOR THE BOOKS!

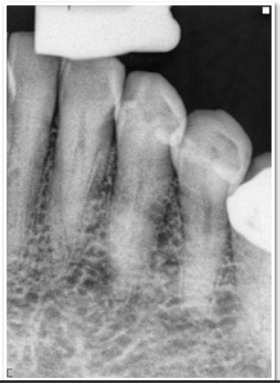
The Problem

- 60 year old female patient was referred for a endodontic treatment of mandibular left canine.

Chief Complaint:

- Swelling over apical area of tooth #33.





Medical History:

- Non contributory.

Clinical Examination:

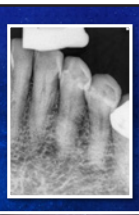
- Mandibular left teeth respond normal to all pulp and periradicular testing.

Radiographic Examination:

- No pathology.

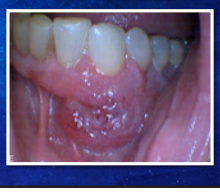
Diagnosis

Non-Hodgkins Lymphoma



Solution

Refer To Oncologist

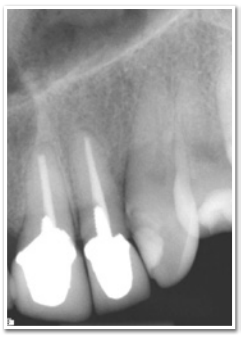


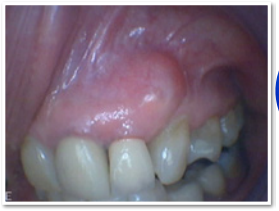
The Problem

- 37 year old female patient was referred for a assessment of swelling of the maxillary gingiva.

Chief Complaint:

- Swelling over apical area of mx lft canine





Medical History:

- Non contributory.

Clinical Examination:

- No periodontal probing. Mx lft canine tests vital to pulp tests.

Radiographic Examination:

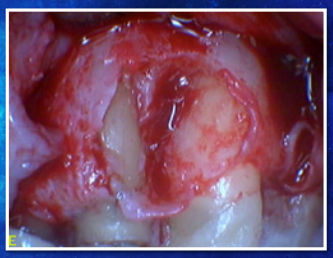
- Previous root canal treatment on mx lft central and lateral incisors. No periradicular pathology.

Diagnosis

Previously Treated:
Vertical Root Fracture

Solution

Extraction with Implant Replacement

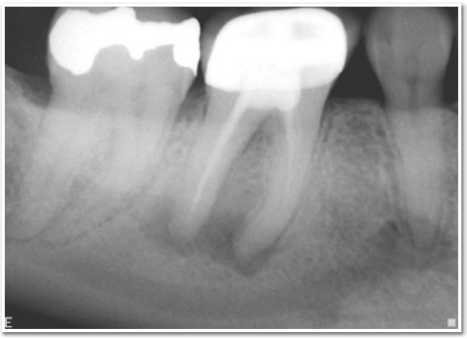


The Problem

- 66 year old male patient was referred for a assessment pain lower right first molar.

Chief Complaint:

- Root canal treatment performed 20 years ago. Pain and swelling of the lower right side.



Medical History:

- Non contributory.

Clinical Examination:

- Md rt. First molar sensitive to percussion and biting. Swelling of mucobuccal fold. Md. Rt. Second premolar and second molar test vital asymptomatic.

Radiographic Examination:

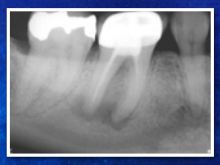
- Previous root canal treatment with apical lesion.

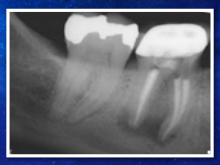
Diagnosis

Previously Treated:
Symptomatic Apical Periodontitis

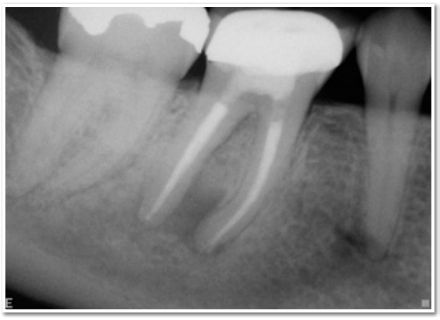
Solution

Endodontic Retreatment

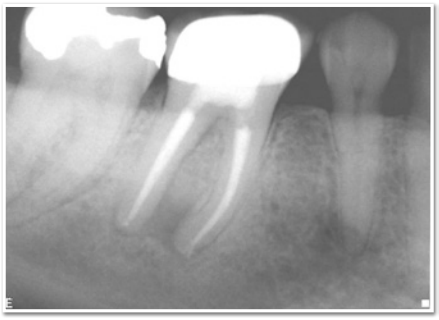




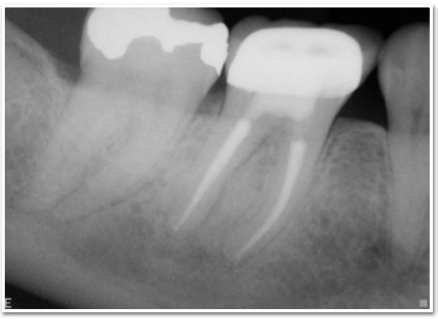
6 MONTHS



1 YEAR



2 YEARS

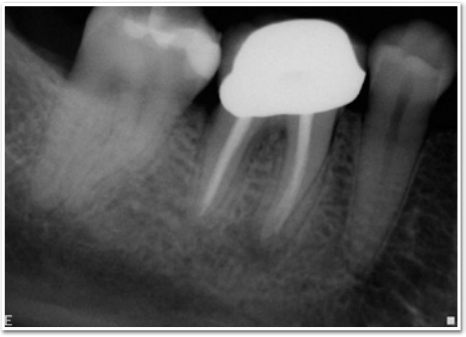


The Problem

- 30 year old female patient was referred for assessment of sinus tract over md rt first molar.

Chief Complaint:

- Pimple on my gum for three months



Medical History:

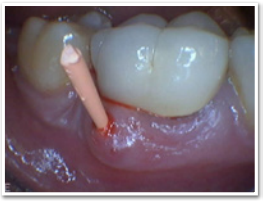
- Non contributory.

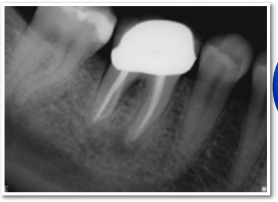
Clinical Examination:

- Normal periodontal probing.

Radiographic Examination:

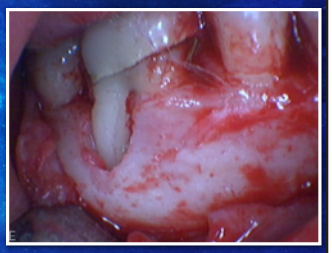
- Previous root canal treatment and crown.





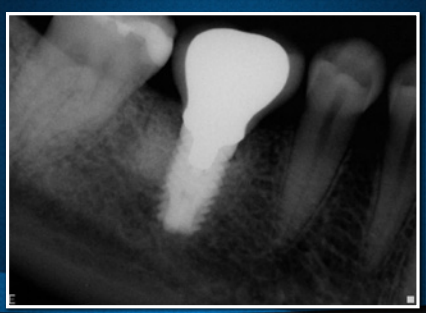
Diagnosis

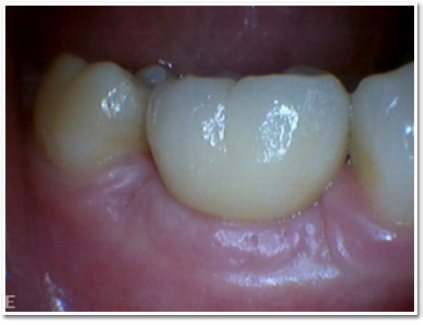
Previously Treated: Chronic Apical Abcess
Vertical Root Fracture



Solution

Extraction: Implant Replacement



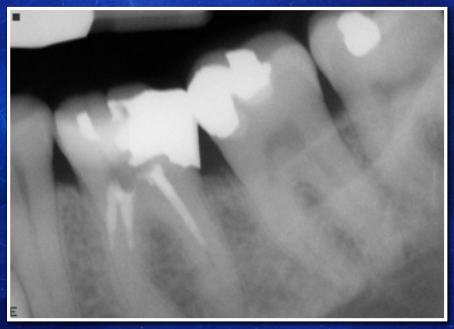


The Problem

- 46 year old male patient was referred for a assessment pain lower left first molar.

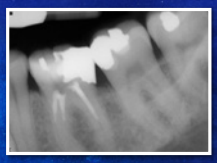
Chief Complaint:

- Root canal treatment started in home town three days prior and pain has intensified. Same symptoms as before but worse now!!



Medical History:

- Non contributory.

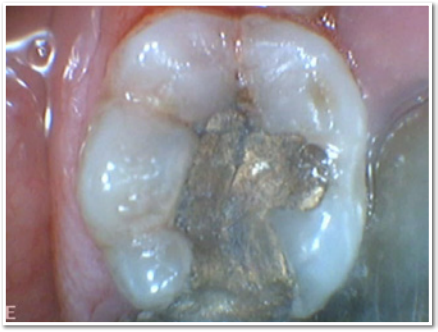


Clinical Examination:

- Md lft first molar tests normal to percussion and biting. Md lft second molar cold positive, bite, positive, 10mm distal pocket.

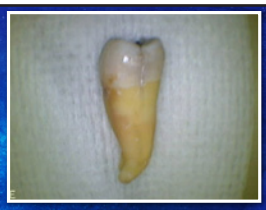
Radiographic Examination:

- Previous pulpectomy and radiopaque calcium hydroxide md lft first molar.



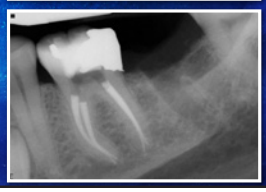
Diagnosis

Symptomatic Irreversible Pulpitis: Vertical Root Fracture



Solution

Extraction with Implant Replacement and Complete Root Canal Treatment on Tooth #36

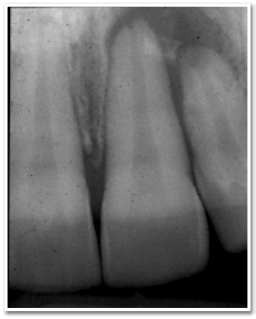


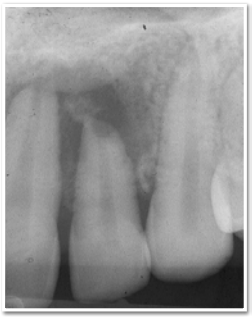
The Problem

- 27 year old male patient was referred for root canal treatment on maxillary left central and lateral incisors.

Chief Complaint:

- My Dentist found something on the X-ray.





Medical History:

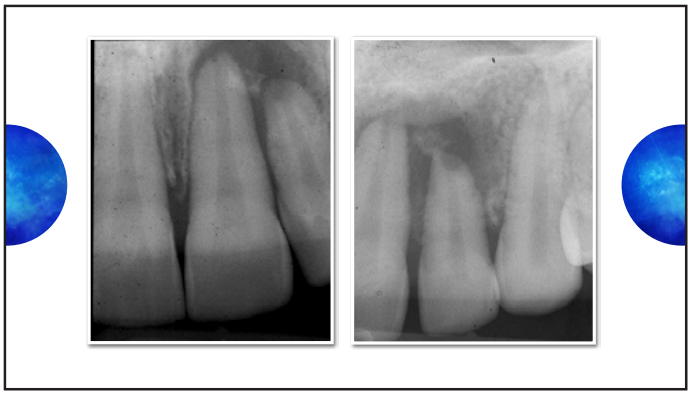
- Non contributory.

Clinical Examination:

- Normal periodontal probing.
- Palatal swelling.
- Teeth test normal to pulp tests.

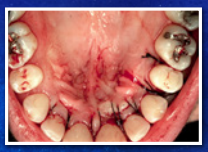
Radiographic Examination:

- Periapical radiolucency around mx left central and lateral incisor.



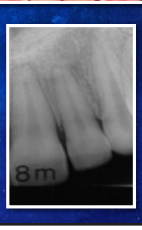
Diagnosis

Normal Pulp: Normal Apical Tissues:
Bone Fragment Lodged in Palate



Solution

Surgical Removal of Bone Fragment

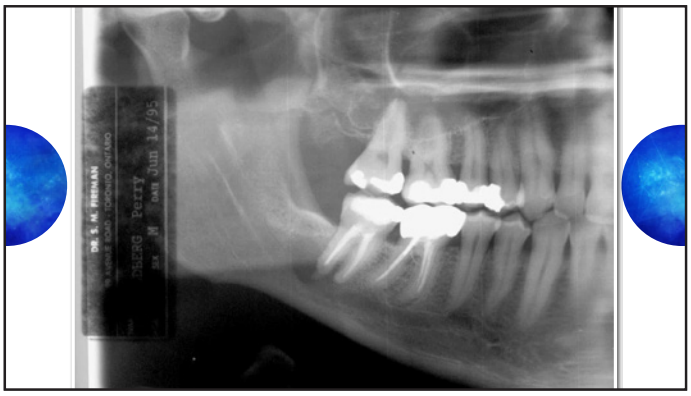


The Problem

- 42 year old male patient was referred for assessment of large infection on md rt first and second molar.

Chief Complaint:

- My Dentist found something on the X-ray.



Medical History:

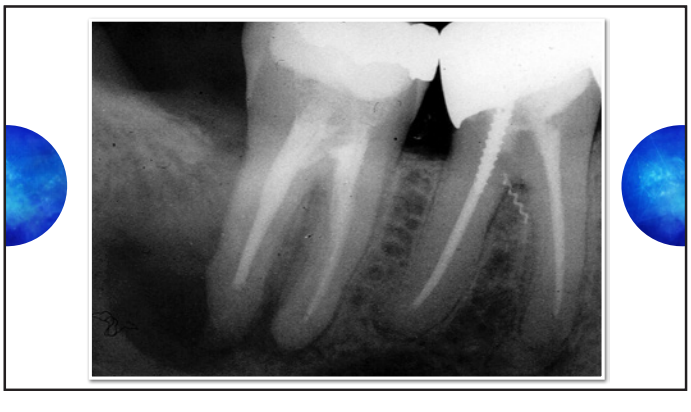
- Non contributory.

Clinical Examination:

- Normal periodontal probing.
- Biting and percussion sensitivity on md rt first and second molars.

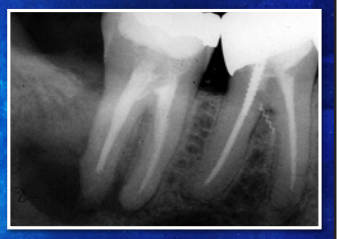
Radiographic Examination:

- Previous root canal treatment on md rt first and second molars. Separated instrument in furcation md rt first molar.



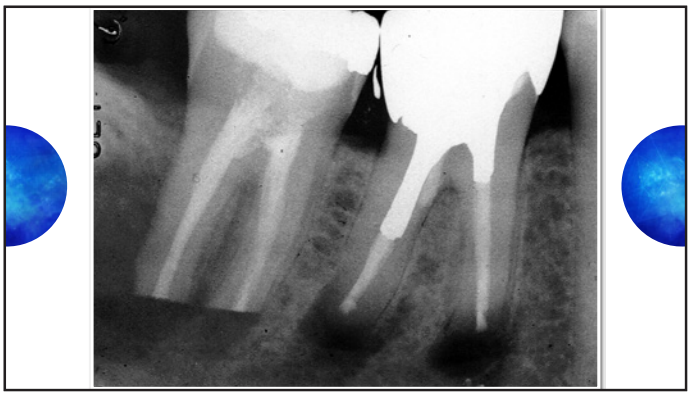
Diagnosis

Previously Treated: Symptomatic Apical Periodontitis

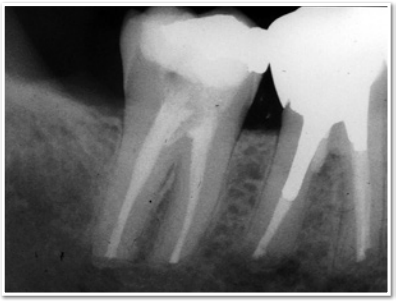


Solution

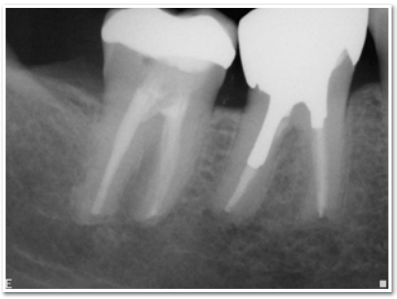
Retreatment, Perforation Repair, Instrument Removal, Intentional Replantion



1 YEAR



20 YEARS

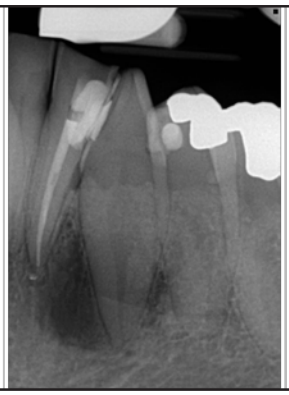


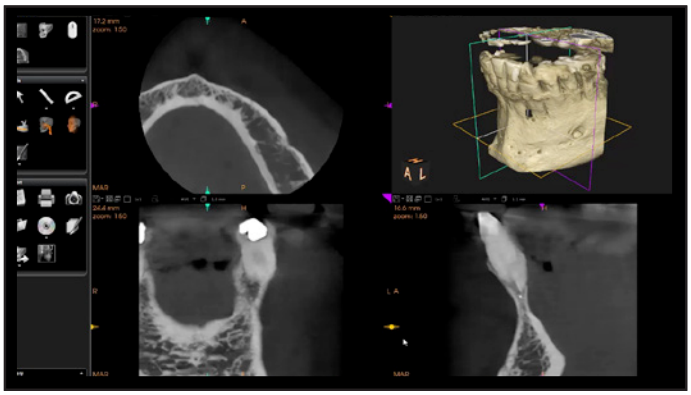
The Problem

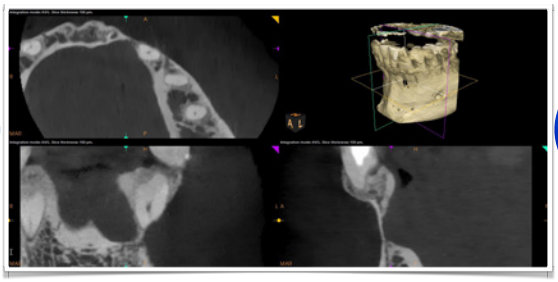
- 78 year old male referred for endodontic treatment on mandibular left canine

Chief Complaint:

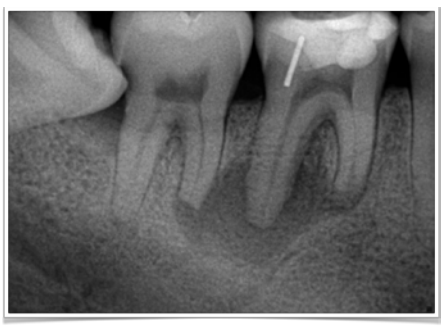
- Dentist found infection on the Xray.

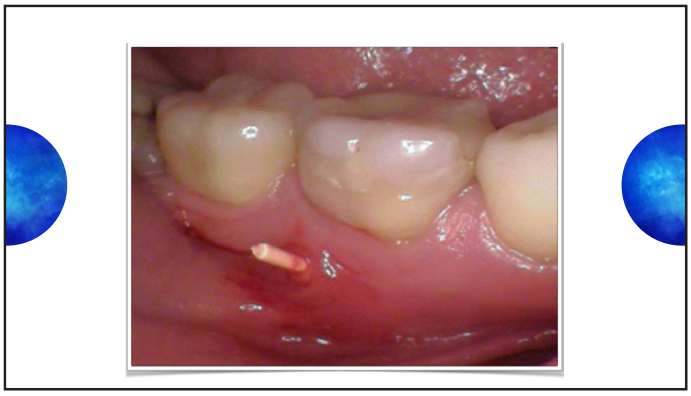


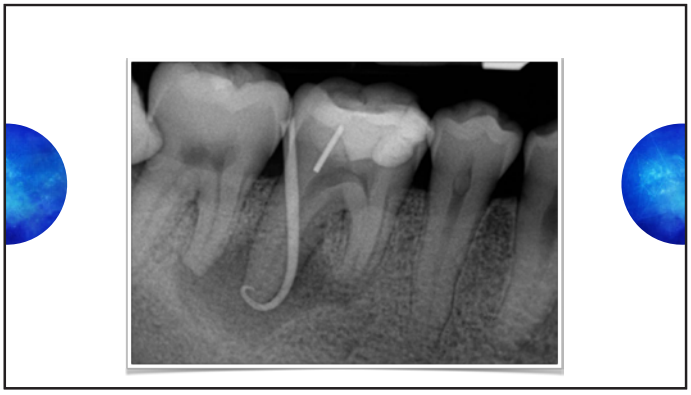


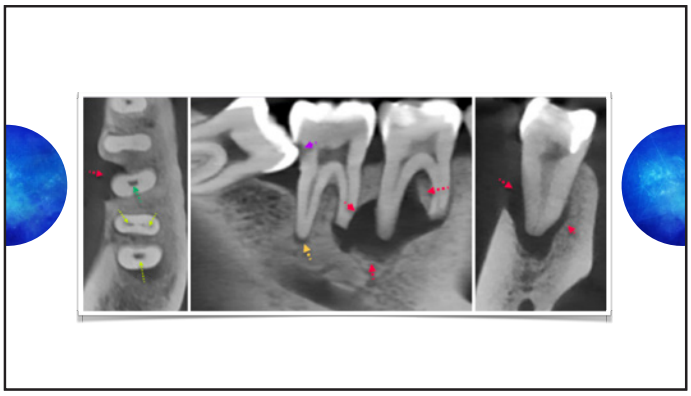


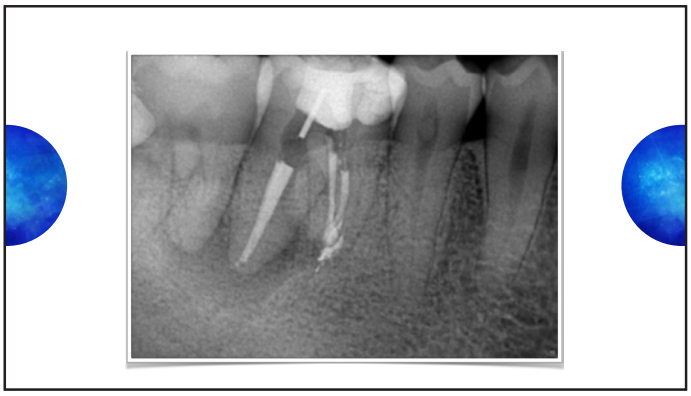
THE IMPORTANCE OF PULP TESTING

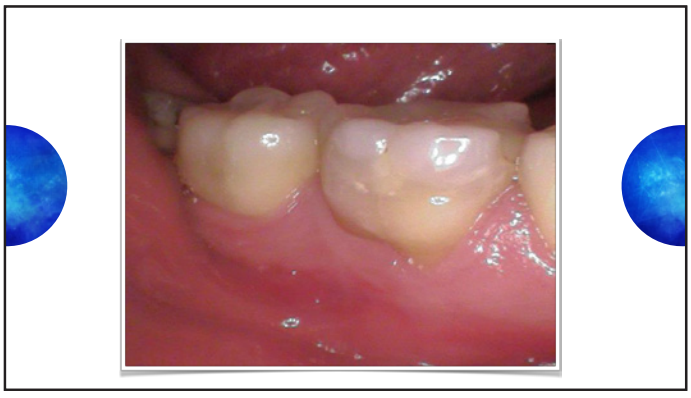


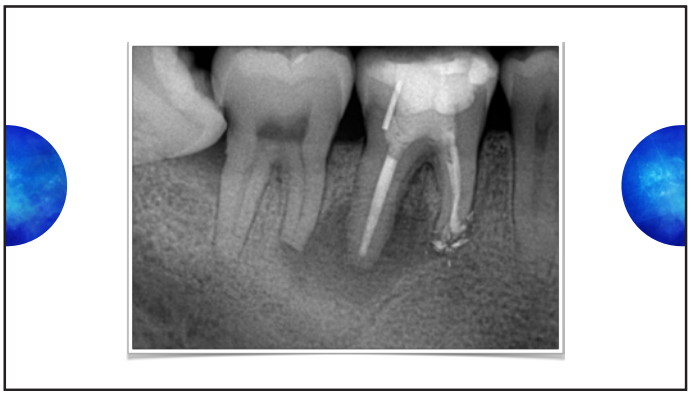


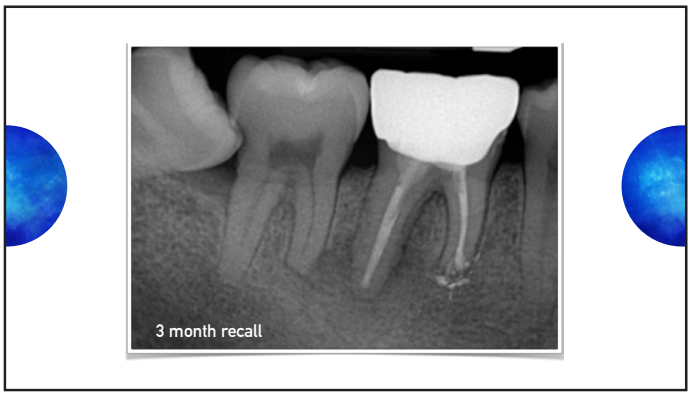








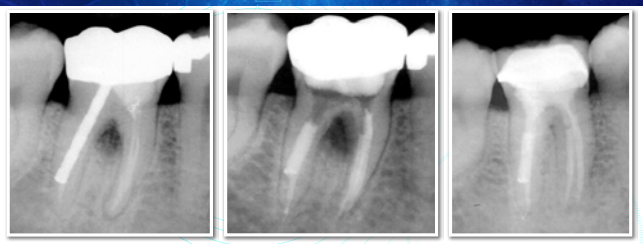



3 month recall

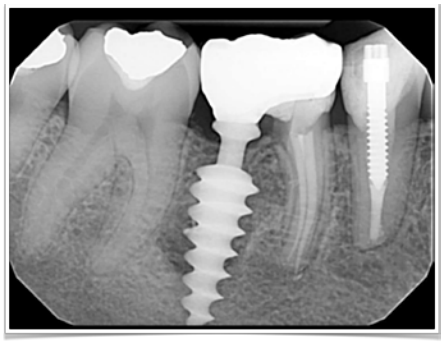

A QUICK CASE JUST FOR FUN!

ROOT FRACTURE??

ENDODONTIC REENGINEERING-GTR?

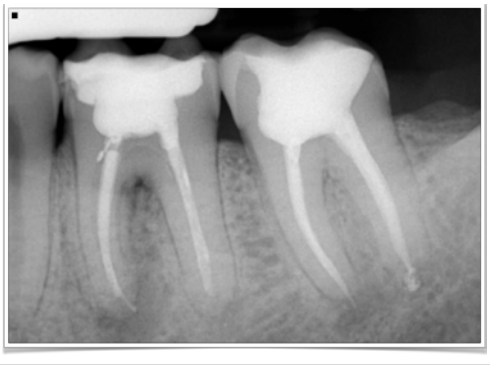


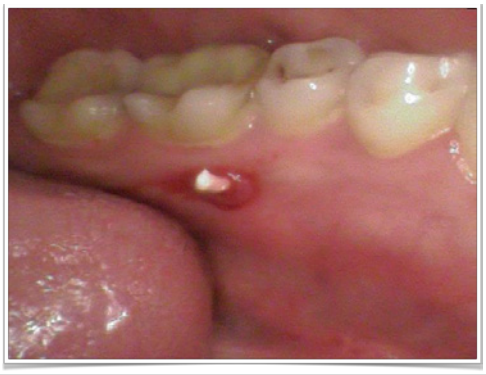
CAN'T MAKE UP YOUR MIND?

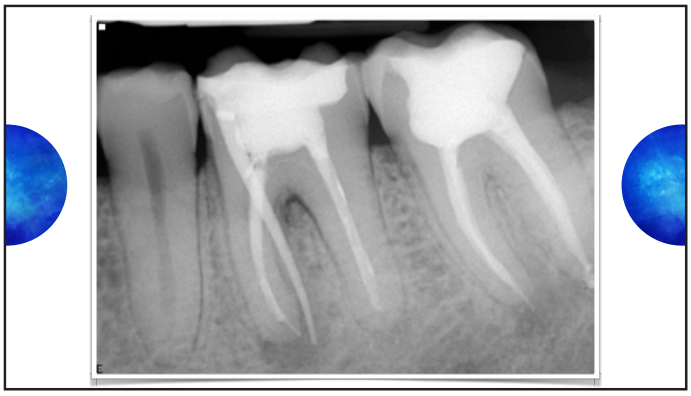


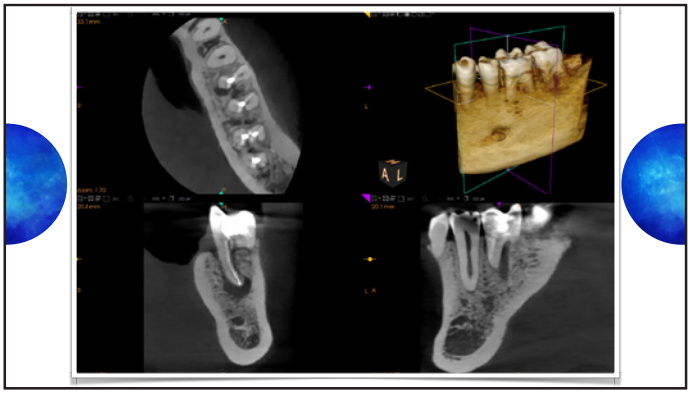
ONE LAST CASE

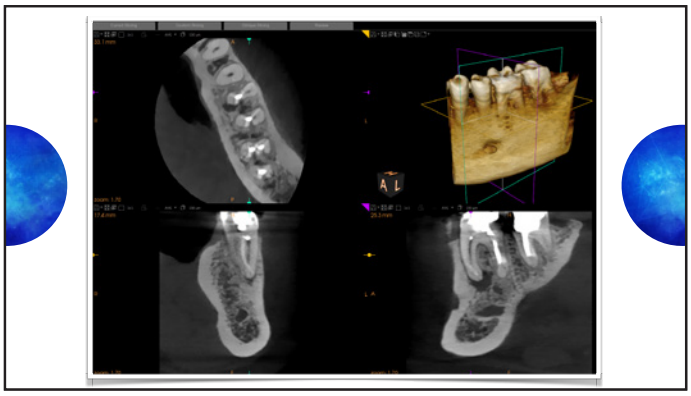
ROOT FRACTURE??

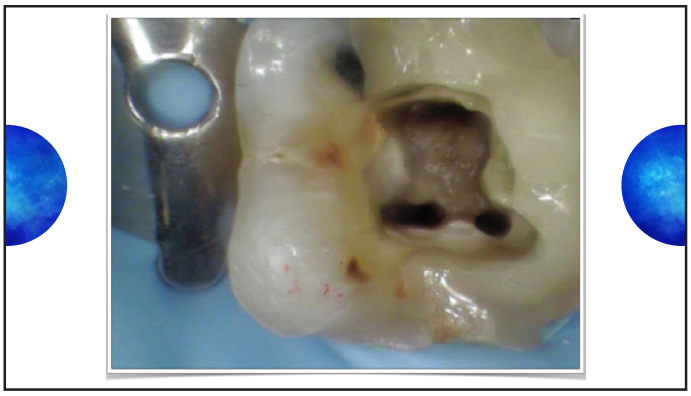


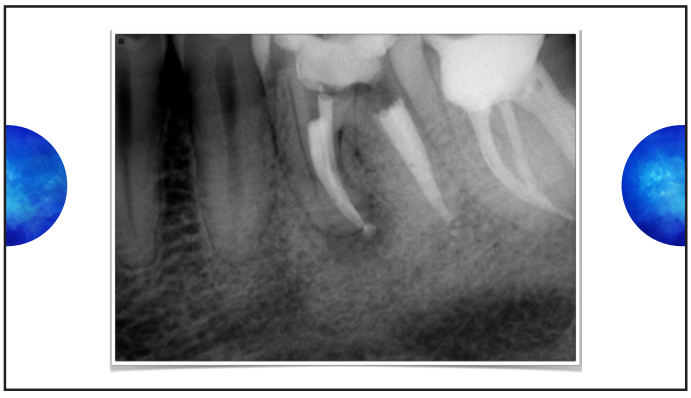


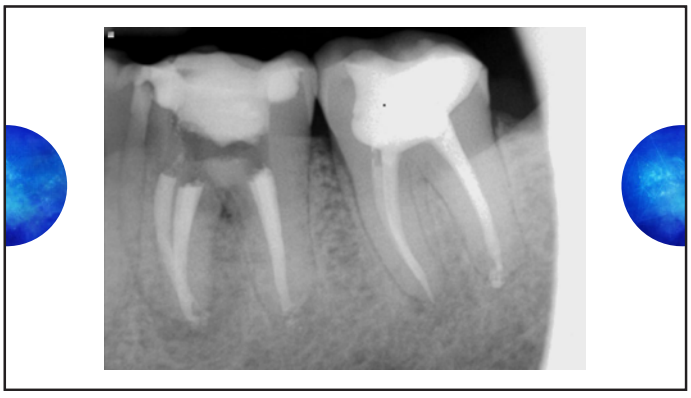


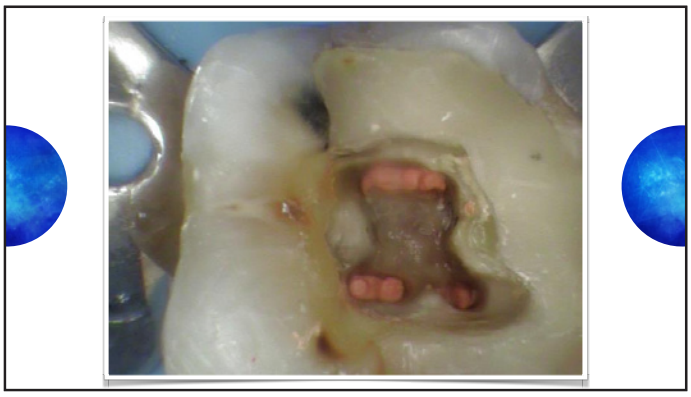


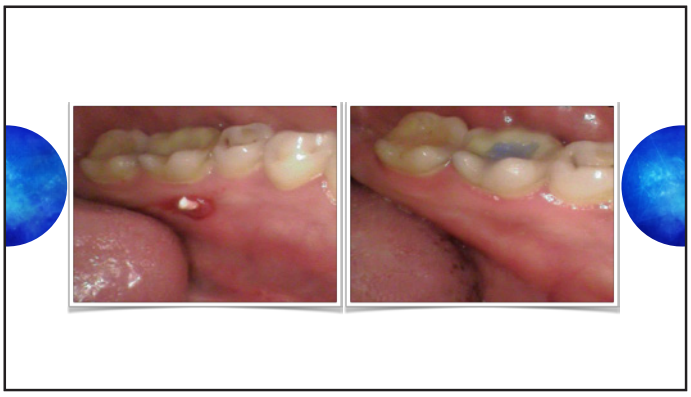


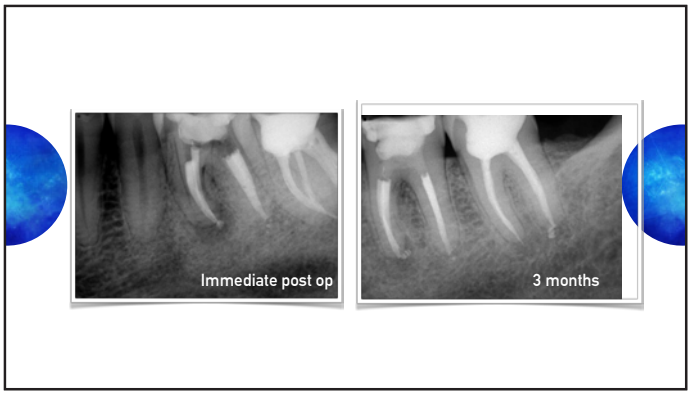


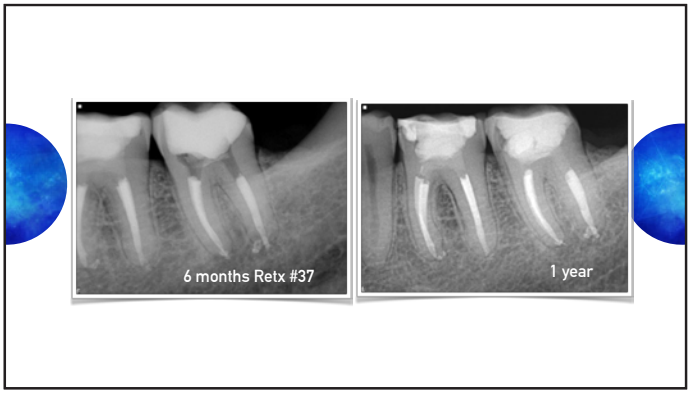


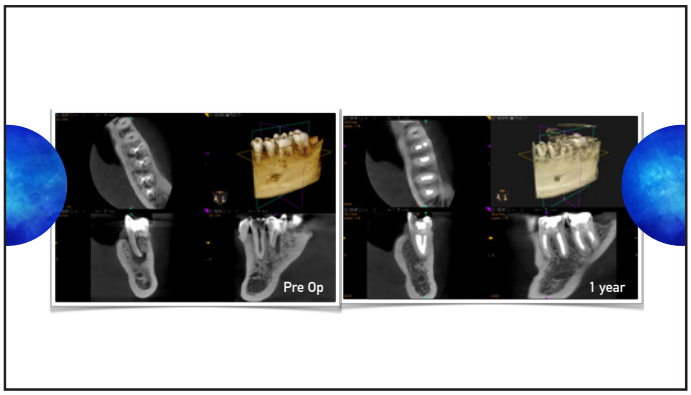


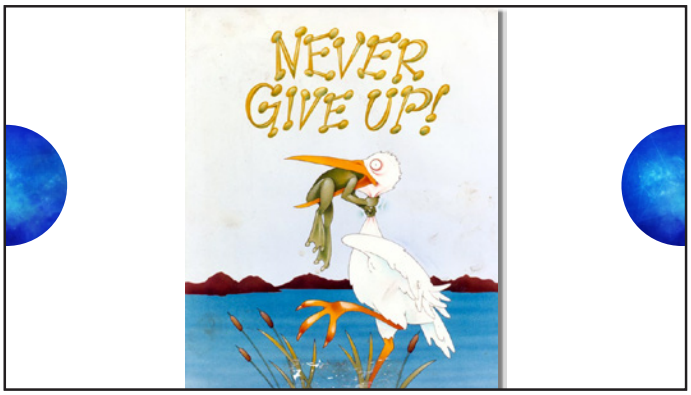












ROOTED IN EXCELLENCE:
MASTERING THE ART OF ENDODONTICS

Gary Glassman, DDS, FRCD(C)
gary@rootcanals.ca
www.rootcanals.ca

EMERGENCY TREATMENT

TWO MOST COMMON EMERGENCIES

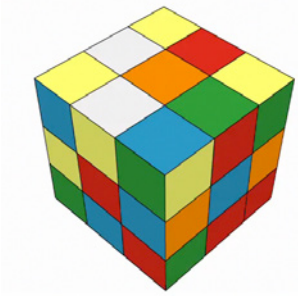
1. When the pulp is vital and they have irreversible pulpitis
2. When they come in with a necrotic pulp with an acute apical abscess with or without swelling

These situations are handled in completely different ways.

DIAGNOSIS

SOAP

PROBLEM



IRREVERSIBLE PULPITIS

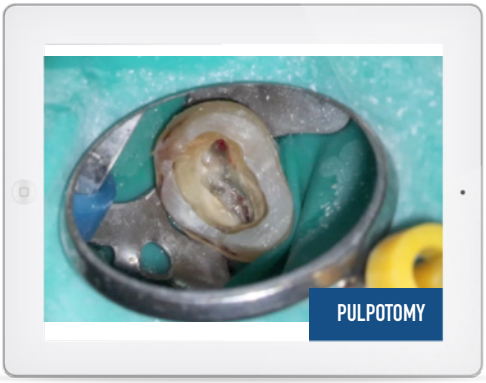
OBJECTIVE

Remove the irritating pulp tissue and provide the patient with relief

PULPOTOMY (1977)

PULPOTOMY AND PULPECTOMY (1990)

SHAPING CLEANING (2009)



SUCCESSFUL PULPOTOMY

- ✓ Correct diagnosis of pure pulpitis without a component of periodontitis (lack of pain to percussion or palpation)
- ✓ The presence of vital tissue within the root canal (positive response to vitality tests).

"If pretreatment pain to percussion is present occlusal reduction has been reported to reduce post treatment pain

Compend Contin Educ Dent. 1981 Mar-Apr;2(2):63-8.
Single-visit endodontics: a concept and a clinical study.
Rudner WL, Oliet S.

Treatment of the endodontic emergency: a decade later.
Gatewood RS, Himel VT, Dorn SO.
J Endod. 1990 Jun;16(6):284-91.

J Endod. 1998 Jul;24(7):487-91.
Anesthetic efficacy of the supplemental intraosseous injection of 2% lidocaine with 1:100,000 epinephrine in irreversible pulpitis.
Nusstein J1, Reader A, Nist R, Beck M, Meyers WJ.
Author information

ANTIBIOTICS?

THEY ARE NOT RECOMMENDED FOR THE EMERGENCY MANAGEMENT OF IRR. PULP.

Oral Surg Oral Med Oral Pathol Oral Radiol Endod. 2000 Nov;90(5):636-40.
Effect of systemic penicillin on pain in untreated irreversible pulpitis.
Nagle D1, Reader A, Beck M, Weaver J.

Antibiotic use for irreversible pulpitis.
Keenan JV, Farman AG, Fedorowicz Z, Newton JT.
Cochrane Database Syst Rev. 2005 Apr 18;(2):CD004969. Review. Update in:
Cochrane Database Syst Rev.

ON THE BASIS OF SEVERAL SURVEYS OF BOARD CERTIFIED ENDODONTISTS AS WELL AS OTHER RECOMMENDATIONS IN THE LITERATURE IRREVERSIBLE PULPITIS SHOULD BE MANAGED WITH COMPLETE SHAPING AND CLEANING OF THE RCS.

The role of intracanal medication in root canal treatment. Chong BS1, Pitt Ford TR. Int Endod J. 1992 Mar;25(2):97-106.

Treatment of the endodontic emergency: a decade later. Gatewood RS, Himel VT, Dorn SO.J Endod. 1990 Jun;16(6):284-91.

Pains of dental origin. Hasselgren g Dental Clinics of North America: 2000 12 -263

Endodontics: Principles and Practice Ed 4 St.Louis : Saunders 2009 Torabinejad, M. Walton, R.

Current trends in endodontic practice: emergency treatments and technological armamentarium. Lee M1, Winkler J, Hartwell G, Stewart J, Caine R. J Endod. 2009 Jan; 35(1):35-9.

PROTOCOL

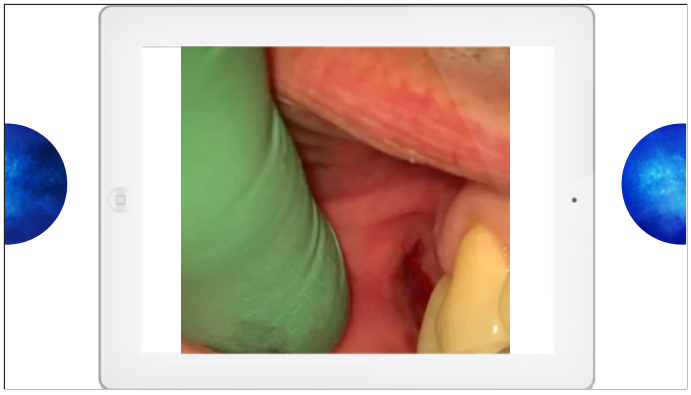
1. Profound anesthesia
2. Access and canal location
3. Cursory shaping
4. Irrigation
5. Calcium Hydroxide
6. Temporary restoration

NECROTIC PULP WITH ACUTE APICAL ABSCESS

WITH PAIN AND SWELLING

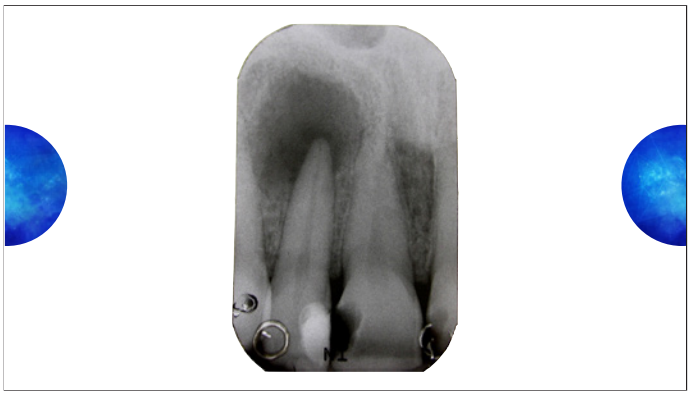
OBJECTIVE EFFECT DRAINAGE

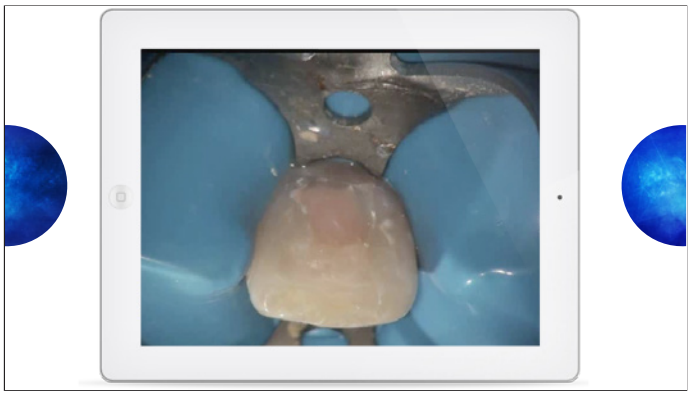
THROUGH THE TOOTH OR SOFT TISSUE

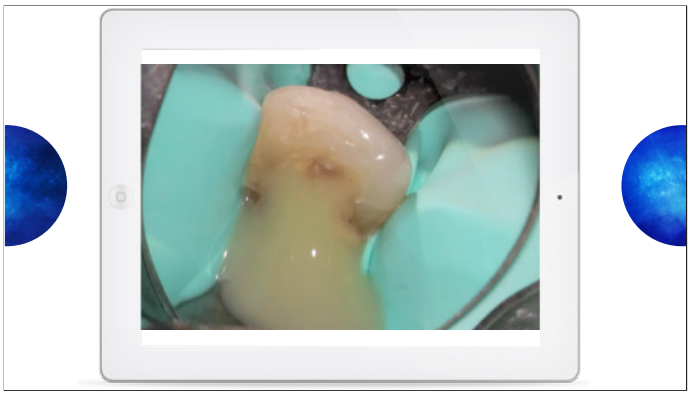


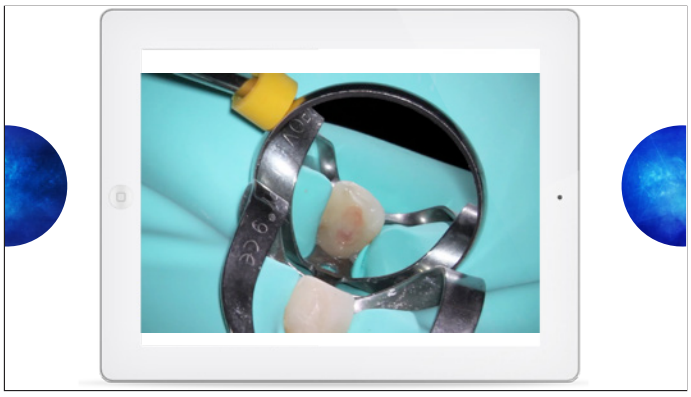

NECROTIC PULP WITH ACUTE APICAL ABSCESS
WITH PAIN BUT WITHOUT SWELLING TISSUE


OBJECTIVE
EFFECT DRAINAGE
THROUGH THE TOOTH










LEAVE OPEN OR CLOSED?

ANTIBIOTICS?

- ✓ FEVER
- ✓ MALAISE
- ✓ LYMPHADENOPATHY
- ✓ IMMUNOLOGICALLY COMPROMISED

1. RESISTANCE
2. ALLERGIC REACTION
3. UPSETTING GUT BIOME/SUPERINFECTION
4. NAUSEA AND VOMITTING
5. INDIGESTION AND BLOATING
6. DIARRHEA
7. DRUG INTERACTIONS

VALACYCLOVIR

Mohammad Sabeti, DDS, MA,* John Zhong, DDS, BS,† Kevin Hildebrandt, BS,‡ and Jørgen Slots, DDS, DMD, PhD, MS, MBA§

CLINICAL RESEARCH

Valacyclovir in Pain Management of Acute Apical Abscesses: A Randomized Placebo-Controlled Double-Blind Pilot Study

JOE • Volume 47, Number 11, November 2021

RESULTS

- ✓ Studies have shown that herpesviruses (cytomegalovirus and Epstein– Barr virus), are strongly associated with symptomatic periapical pathosis
- ✓ All 20 patients received a 7-day course of amoxicillin; those in the experimental group also received an immediate dose of 2 g of valacyclovir followed by 500 mg twice daily for 3 days, while the control group received a placebo in addition to the amoxicillin

RESULTS

- ✓ At the baseline examination, 9 (90%) patients in both the valacyclovir group and the placebo group were taking some form of analgesics.
- ✓ In the valacyclovir group, only 1 (10%) patient needed pain medication on the day after baseline treatment, and no patient required pain medication on days 5 and 6.
- ✓ In the placebo group, 9 (90%) patients needed pain medication on day 1, 6 (60%) patients on day 3, and 5 (50%) patients for the entire 6-day study period.
- ✓ The difference in analgesic usage between the valacyclovir and the placebo group was statistically significant.
- ✓ The rapid pain relief by valacyclovir treatment points to herpes viruses as main causes of pain from acute abscesses.

DENTAL TRAUMA:

PERMANENT DENTITION

Gary Glassman, DDS, FRCD(C)
gary@rootcanals.ca
www.rootcanals.ca

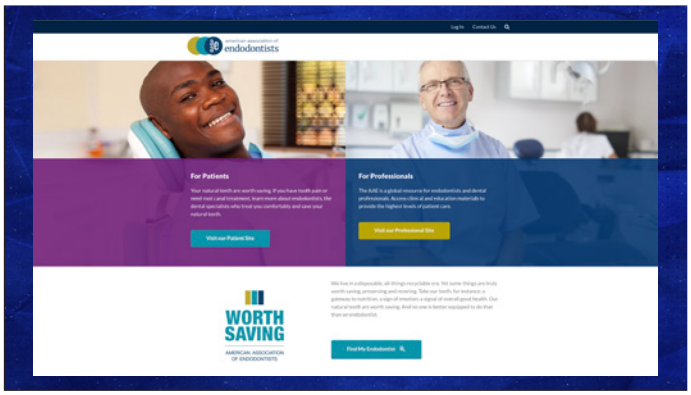
5%

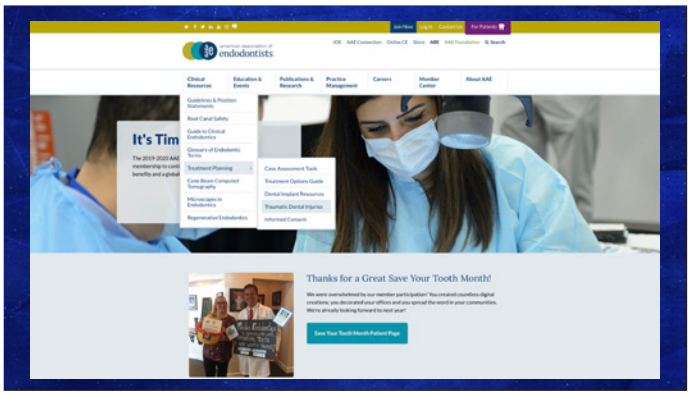
25%

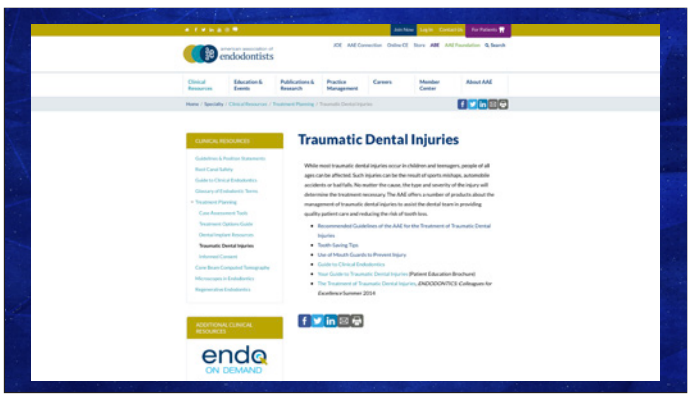
33%

19 years


american association of endodontists
AAE.ORG

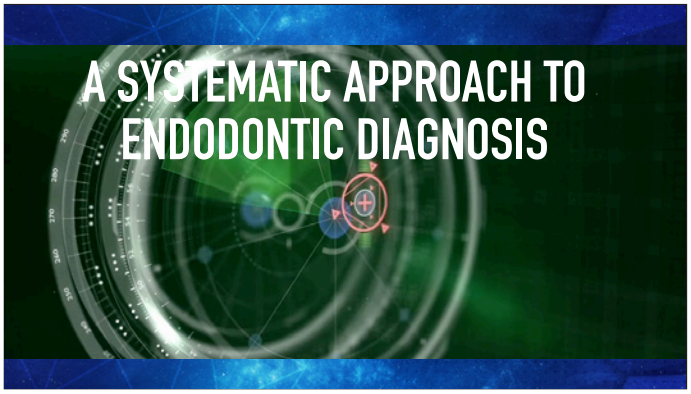

endodontists
For Patients
For Professionals
WORTH SAVING

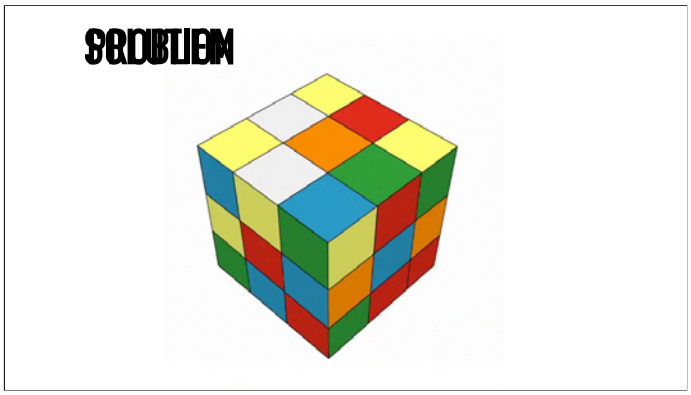

endodontists
Thanks for a Great Save Your Tooth Month!


endodontists
Traumatic Dental Injuries
endo ON DEMAND


The Recommended Guidelines of the American Association of Endodontists for
The Treatment of Traumatic Dental Injuries
ENDODONTICS
Colleagues for Excellence
The Treatment of Traumatic Dental Injuries
Published for the Dental Professional Community by the American Association of Endodontists


DENTALTRAUMAGUIDE.ORG
DENTAL TRAUMA GUIDE
You now have access to Dental Trauma Guide member sections
Patient examination
Trauma pathfinder
Evidence based dental trauma treatment
Newsletter signup


A SYSTEMATIC APPROACH TO ENDODONTIC DIAGNOSIS


SOLUTION


Data Collection & Analysis


LISTEN
LISTEN
LISTEN


Patient Medical History


SOAP

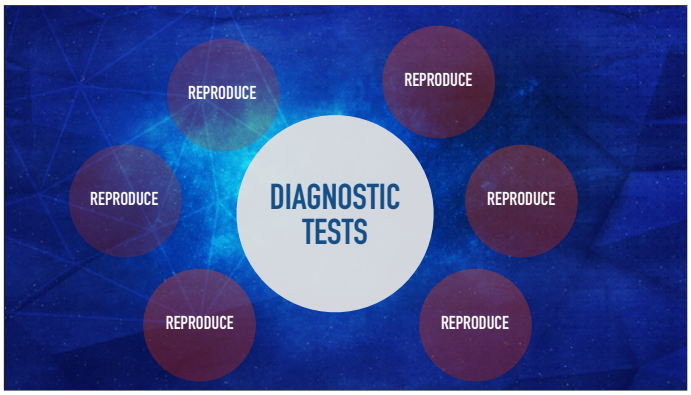

SUBJECTIVE INFORMATION
OBJECTIVE INFORMATION
ASSESSMENT OF INFORMATION
PLAN OF TREATMENT

SUBJECTIVE INFORMATION

- ✓ Patient's name, age, sex, address and contact numbers (include weight for young patients)
- ✓ Central nervous system symptoms exhibited after the injury
- ✓ Patient's general health
- ✓ When, where and how the injury occurred
- ✓ Treatment the patient received elsewhere
- ✓ History of previous dental injuries
- ✓ Disturbances in the bite
- ✓ Tooth reactions to thermal changes or sensitivity to sweet/sour
- ✓ If the teeth are sore to touch or during eating
- ✓ If the patient is experiencing spontaneous pain in the teeth

OBJECTIVE INFORMATION

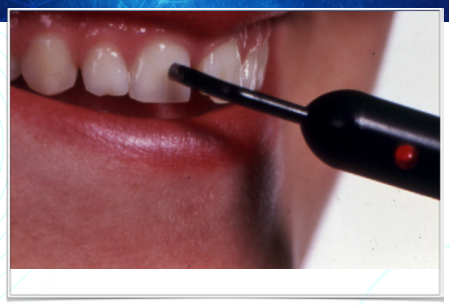
- ✓ CLINICAL/VISUAL EXAMINATION
- ✓ CLINICAL TESTING
- ✓ RADIOGRAPHIC EVALUATION



PULP SENSITIVITY

(SENSIBILITY) TESTS

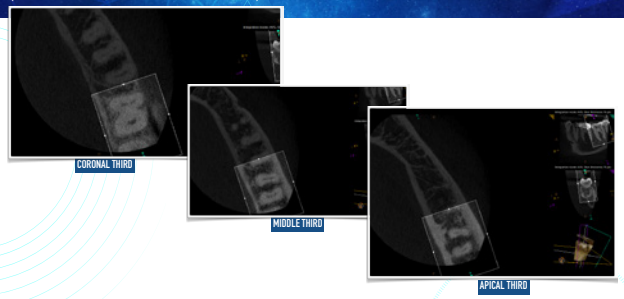
ELECTRIC PULP TEST-EPT



ANALYSIS OF PERIODONTAL LIGAMENT (PDL) AND ATTACHMENT APPARATUS STATUS

3D IMAGING: CBCT

(CONE BEAM COMPUTED TOMOGRAPHY)



RADIOGRAPHIC EXAM

- ✓ One occlusal and two periapical radiographs from mesial and distal are recommended in order to rule out displacement or the possible presence of a
- ✓ root fracture.
- ✓ Radiograph of lip or cheek lacerations to search for tooth fragments or foreign material.
- ✓ CBCT when possible

DUAL DIAGNOSIS PULPAL AND APICAL

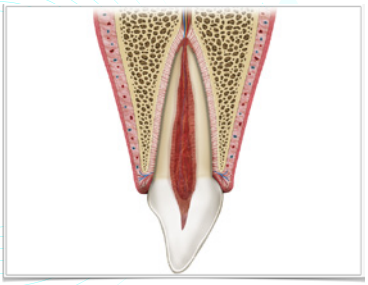
PULPAL DIAGNOSIS

- ✓ Normal Pulp
- ✓ Reversible Pulpitis
- ✓ Symptomatic Irreversible Pulpitis
- ✓ Asymptomatic Irreversible Pulpitis
- ✓ Pulp Necrosis
- ✓ Previously Treated
- ✓ Previously Initiated Therapy

APICAL DIAGNOSIS

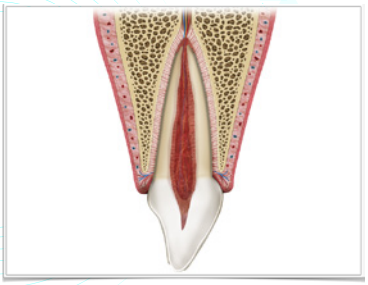
- ✓ Normal Apical Tissues
- ✓ Symptomatic Apical Periodontitis
- ✓ Asymptomatic Apical Periodontitis
- ✓ Chronic Apical Abcess
- ✓ Acute Apical Abcess
- ✓ Condensing Osteitis

PERMANENT TEETH - INFRACTION



- Often no treatment is necessary but frequent follow up in important
- Follow up 6-8 weeks then 1 year

PERMANENT TEETH - ENAMEL FRACTURE

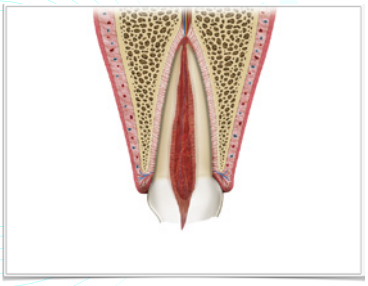


- Bond piece back on or repair with composite
- Follow up 6-8 weeks then 1 year

PERMANENT TEETH - ENAMEL DENTIN FRACTURE

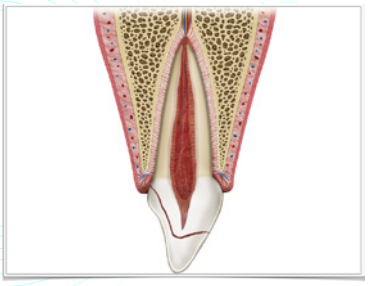
- Bond piece back on or repair with composite
- Follow up 6-8 weeks then 1 year

PERMANENT TEETH - ENAMEL DENTIN FRACTURE WITH PULP EXPOSURE



- Pulp cap with CaOH or Calcium Silicate like MTA
- Bond piece back on or repair with composite
- Follow up 6-8 weeks then 1 year

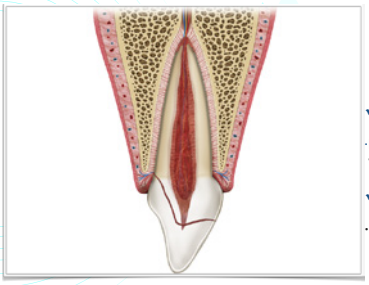
PERMANENT TEETH - CROWN ROOT FRACTURE W/O PULP EXPOSURE



✓ **Without pulp exposure:**

·fragment removal with or without gingivectomy and restore.

PERMANENT TEETH - CROWN ROOT FRACTURE W/ PULP EXPOSURE



Fragment removal with or without gingivectomy and restore.

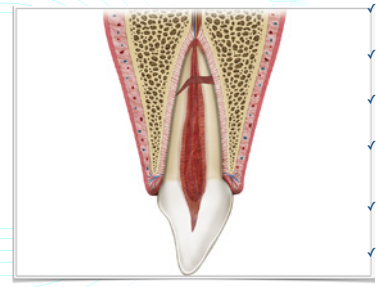
✓ **Pulpal exposure and immature roots:**

- Perform a partial pulpotomy to preserve pulp vitality.

✓ **Pulp exposure with mature roots:**

- Perform endodontic treatment then restore with a post-retained crown.

PERMANENT TEETH - ROOT FRACTURE



✓ If displaced, reposition the coronal segment of the tooth as soon as possible.

✓ Check that correct position has been reached radiographically.

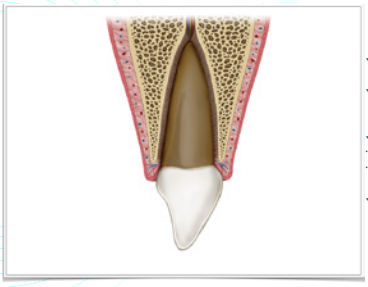
✓ Stabilize the tooth with a flexible splint for 4 weeks.

✓ If the root fracture is near the cervical area of the tooth, stabilization is beneficial for a longer period of time (up to 4 months).

✓ Monitor healing for at least 1 year to determine pulpal status.

✓ If pulp necrosis develops, then root canal treatment of the coronal tooth segment to the fracture line is indicated.

PERMANENT TEETH - CONCUSSION



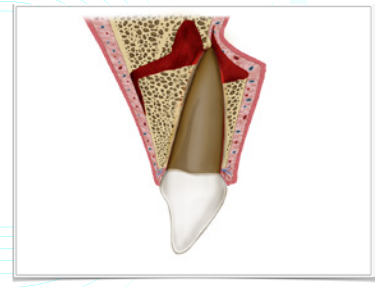
✓ No treatment

✓ Monitor pulpal response until a definitive pulpal diagnosis can be made.

✓ Soft food for 1 week.
- Maintain good oral hygiene.
- 0.12% chlorhexidine rinses bid for 2 weeks.

✓ Monitor on a regular basis for up to 5 years

PERMANENT TEETH - ALVEOLAR FRACTURE



✓ Reposition any displaced segment and then splint the involved teeth with a flexible splint for 4 weeks.

✓ Suture gingival laceration if present.

PERMANENT TEETH - SUBLUXATION

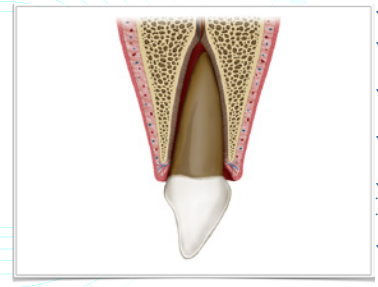
✓ If needed stabilize the tooth using a flexible splint for two weeks

✓ Monitor pulpal response until a definitive pulpa diagnosis can be made.

✓ Soft food for 1 week.
- Maintain good oral hygiene.
- 0.12% chlorhexidine rinses bid for 2 weeks.

✓ Monitor on a regular basis for up to 5 years

PERMANENT TEETH - EXTRUSIVE LUXATION



✓ Rinse the affected area with saline

✓ Reposition the tooth the tooth gently into the socket

✓ Suture lacerations especially in the cervical areas

✓ Stabilize the tooth using a flexible splint for two weeks

✓ Soft food for 1 week.
- Maintain good oral hygiene.
- 0.12% chlorhexidine rinses bid for 2 weeks.

✓ Monitor on a regular basis for up to 5 years

PERMANENT TEETH - LATERAL LUXATION

✓ Rinse the affected area with saline

✓ Reposition the tooth digitally or with forceps to disengage it from its bony lock and gently reposition it into its original location.

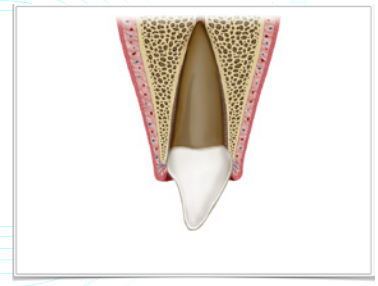
✓ Suture lacerations especially in the cervical areas

✓ Stabilize the tooth using a flexible splint for two weeks

✓ Soft food for 1 week.
- Maintain good oral hygiene.
- 0.12% chlorhexidine rinses bid for 2 weeks.

✓ Monitor on a regular basis for up to 5 years

PERMANENT TEETH - INTRUSIVE LUXATION



Teeth with incomplete root formation:

✓ Up to 7mm intrusion, allow or re-eruption without intervention. If no movement, initiate orthodontic repositioning within 3 weeks.

✓ - In cases of >7mm, reposition surgically or orthodontically within 3 weeks.

Teeth with complete root formation:

✓ Up to 3mm intrusion and <17 years old, allow for re-eruption without intervention.

✓ If no movement after 2–3 weeks, reposition surgically or orthodontically before ankylosis develops

✓ Between 3-7mm intrusion, reposition surgically or orthodontically within 3 weeks.

✓ In cases of >7mm, reposition surgically. Splint for 2 weeks using a flexible splint. If displacement is extensive, splint for 4 weeks.

✓ Suture gingival laceration, especially in the cervical area.

PERMANENT TEETH - INTRUSIVE LUXATION

Teeth with incomplete root formation:

✓ - Monitor closely for pulp vitality

✓ If the pulp becomes necrotic, pulp revascularization therapy or apexification should be considered.

Teeth with complete root formation:

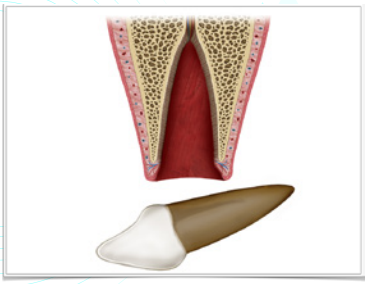
✓ - The pulp will likely become necrotic and root canal therapy should be initiated 2 weeks after the injury.

✓ After cleaning and disinfection, a temporary dressing with calcium hydroxide is recommended or up to 4 weeks.

✓ Soft food for 1 week.
Maintain good oral hygiene.
0.12% chlorhexidine rinses bid for 2 weeks.

✓ Monitor on a regular basis for up to 5 years

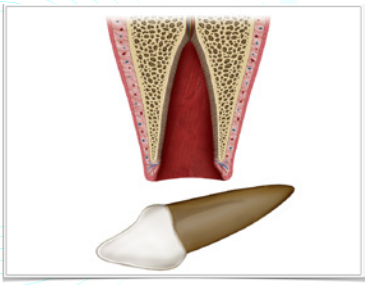
PERMANENT TEETH - AVULSED TEETH WITH CLOSED APICES



2a. The tooth has been replanted before the patient's arrival at the clinic

- Leave the tooth in place.
- Clean the area with water spray, saline or chlorhexidine.
- Suture gingival lacerations, if present.
- Verify normal position of the replanted tooth both clinically and radiographically.
- Apply a flexible splint for up to 2 weeks (see Splinting).
- Administer systemic antibiotics. (see Antibiotics).
- Check tetanus protection (see Tetanus).
- Give patient instructions (see Patient instructions).
- Initiate root canal treatment 7–10 days after replantation and before splint removal (see Endodontic considerations).

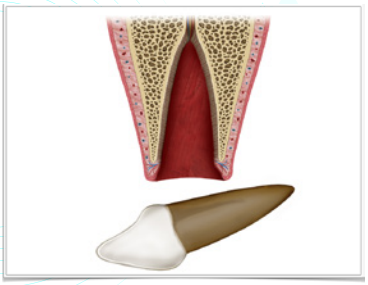
PERMANENT TEETH - AVULSED TEETH WITH CLOSED APICES



2b. The tooth has been kept in a physiologic storage medium or osmolality balanced medium and/or stored dry, the extraoral dry time has been less than 60 minutes

- Physiologic storage media include e.g. tissue culture medium and cell transport media. Examples of osmolality balanced media are HBSS, saline and milk. Saliva can also be used.
- Clean the root surface and apical foramen with a stream of saline and soak the tooth in saline thereby removing contamination and dead cells from the root surface.
- Administer local anesthesia.
- Irrigate the socket with saline.
- Examine the alveolar socket. If there is a fracture of the socket wall, reposition it with a suitable instrument.
- Replant the tooth slowly with slight digital pressure. Do not use force.
- Suture gingival lacerations, if present.
- Verify normal position of the replanted tooth both clinically and radiographically.
- Apply a flexible splint for up to 2 weeks, keep away from the gingiva.
- Administer systemic antibiotics (see: Antibiotics).
- Check tetanus protection (see Tetanus).
- Give patient instructions (see Patient instructions).
- Initiate root canal treatment 7–10 days after replantation and before splint removal (see Endodontic considerations).

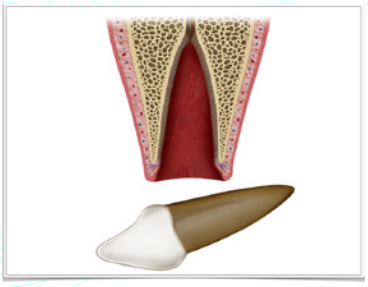
PERMANENT TEETH - AVULSED TEETH WITH CLOSED APICES



2c. Dry time longer than 60 minutes or other reasons suggesting non-viable cells

- Delayed replantation has a poor long-term prognosis.
- The periodontal ligament will be necrotic and not expected to heal.
- The goal in delayed replantation is, in addition to restoring the tooth for aesthetic, functional and psychological reasons, to maintain alveolar bone contour .
- However, the expected eventual outcome is ankylosis and resorption of the root and the tooth will be lost eventually.

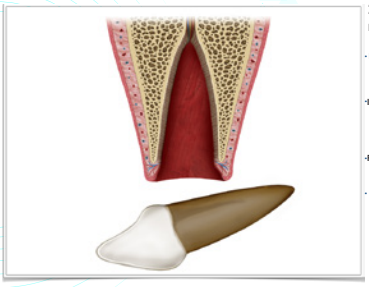
PERMANENT TEETH - AVULSED TEETH WITH CLOSED APICES



2c. Dry time longer than 60 minutes or other reasons suggesting non-viable cells

The technique for delayed replantation is:
- Remove attached non-viable soft tissue carefully e.g. with gauze. The best way to this has not yet been decided (See areas of research).
- Root canal treatment to the tooth can be carried out prior to replantation or later (See Endodontic considerations).
- In cases of delayed replantation, root canal treatment should be done either on the tooth prior to replantation, or it can be done 7–10 days later like in other replantation situations (See Endodontic considerations).
- Administer local anesthesia.
- Irrigate the socket with saline.
- Examine the alveolar socket. If there is a fracture of the socket wall, reposition it with a suitable instrument.
- Replant the tooth.
- Suture gingival lacerations, if present.
- Verify normal position of the replanted tooth clinically and radiographically.
- Stabilize the tooth for 4 weeks using a flexible splint (See Splinting).
- Administration of systemic antibiotics (See Antibiotics).
- Check tetanus protection (See Tetanus).

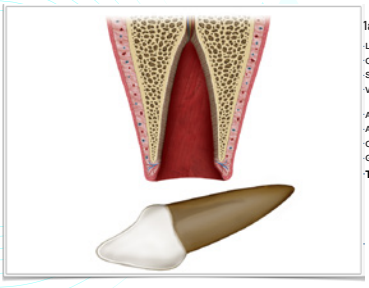
PERMANENT TEETH - AVULSED TEETH WITH CLOSED APICES



2c. Dry time longer than 60 minutes or other reasons suggesting non-viable cells

- In order to slow down osseous replacement of the tooth, treatment of the root surface with fluoride prior to replantation has been suggested (2% sodium fluoride solution for 20 min) but it should not be seen as an absolute recommendation.
- In children and adolescents ankylosis is frequently associated with infraposition. Careful follow up is required and good communication is necessary to ensure the patient and guardian of this likely outcome. Decoronation may be necessary later when infraposition (>1mm) is seen.
- For more detailed information of this procedure the reader is referred to textbooks.

PERMANENT TEETH - AVULSED TEETH WITH AN OPEN APEX



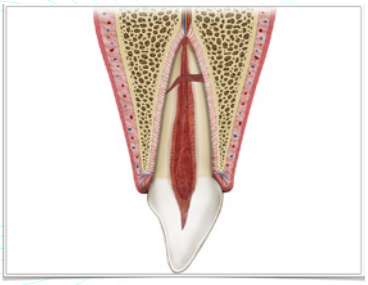
1a.The tooth has been replanted before the patient's arrival at the clinic

- Leave the tooth in place.
- Clean the area with water spray, saline or chlorhexidine.
- Suture gingival lacerations, if present.
- Verify normal position of the replanted tooth both clinically and radiographically.
- Apply a flexible splint for up to 2 weeks (see Splinting).
- Administer systemic antibiotics (see Antibiotics).
- Check tetanus protection (see Tetanus).
- Give patient instructions (see Patient instructions).
- **The goal for replanting still-developing (immature) teeth in children is to allow for possible revascularization of the pulp space. If that does not occur, root canal treatment may be recommended (see Endodontic considerations).**

PERMANENT TEETH - ROOT FRACTURE

CASE #1

PERMANENT TEETH - ROOT FRACTURE



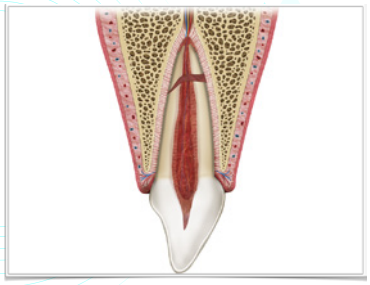
CLINICAL FINDINGS

- The **coronal segment may be mobile and may be displaced.** The tooth may be tender to percussion.
- Bleeding from the gingival sulcus may be noted.
- Sensibility testing may give negative results initially, indicating transient or permanent neural damage.
- **Monitoring the status of the pulp is recommended.**
- Transient crown discoloration (red or grey) may occur.

RADIOGRAPHIC FINDINGS

- The fracture involves the root of the tooth and is in a **horizontal or oblique plane.**
- Fractures that are in the horizontal plane can usually be detected in the regular periapical 90° angle film with the central beam through the tooth. This is usually the case with fractures in the cervical third of the root. If the plane of fracture is more oblique which is common with apical third fractures, an occlusal view or radiographs with varying horizontal angles are more likely to demonstrate the fracture including those located in the middle third.

PERMANENT TEETH - ROOT FRACTURE

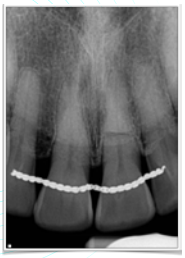


TREATMENT

- **Reposition**, if displaced, the coronal segment of the tooth as soon as possible.
- Check position radiographically.
- Stabilize the tooth with a **flexible splint for 4 weeks.** If the root fracture is near the cervical area of the tooth, stabilization is beneficial for a longer period of time **(up to 4 months).**
- It is advisable to monitor healing for at least one year to determine pulpal status.
- If pulp necrosis develops, **root canal treatment of the coronal tooth segment** to the fracture line is indicated to preserve the tooth.

DENTAL TRAUMA: HORIZONAL ROOT FRACTURE

HORIZONTAL ROOT FRACTURE



50 Year old female with a non-contributory medical history.

Previous history of orthodontics as a teenager with a lingual wire retainer.

NO recollection of a traumatic episode.

All maxillary anterior responded normal to Endo-Ice® . Just to be sure, #21 responded normal to the EPT.

There was no tenderness to percussion or palpation in the region nor any mobility or periodontal pocketing.

Diagnosis: Horizontal root fracture with a Vital Asymptomatic pulp with no Apical Periodontitis

Treatment: Observation, Nightguard, Root canal treatment on the coronal segment IF it becomes non vital.

DENTAL TRAUMA: HORIZONTAL ROOT FRACTURE AND LATERAL LUXATION

CASE #2

DENTAL TRAUMA: HORIZONTAL ROOT FRACTURE AND LATERAL LUXATION

67 Year old male with a non-contributory medical history.

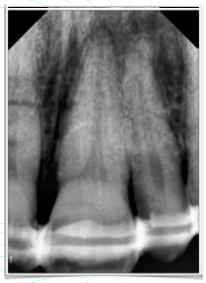
Patient is a logger who had a tree fall onto his face.

20 sutures on face and internally in his cheek

#11 was obliquely fractured and #21 and #22 were laterally luxated

#11 was reduced and #21 and #22 were repositioned within two hours of the accident by his general dentist and a rigid splint was placed. All 3 teeth tested non-vital. 10mm palatal pockets on all three teeth

DENTAL TRAUMA: HORIZONTAL ROOT FRACTURE AND LATERAL LUXATION



67 Year old male with a non-contributory medical history.

Patient is a logger who had a tree fall onto his face.

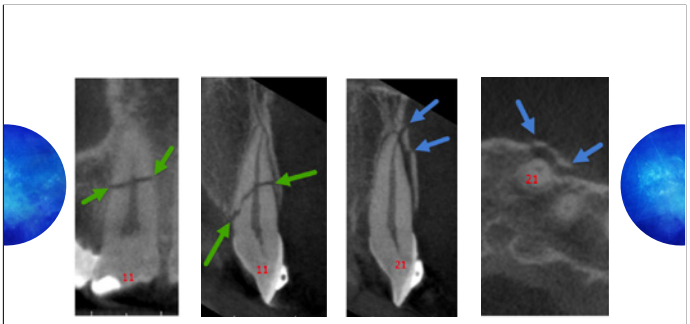
20 sutures on face and internally in his cheek

#11 was obliquely fractured and #21 and #22 were laterally luxated

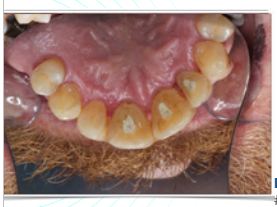
#11 was reduced and #21 and #22 were repositioned within two hours of the accident by his general dentist and a rigid splint was placed. All 3 teeth tested non-vital. 10mm palatal pockets on all three teeth

Diagnosis: Oblique root fracture of #11, lateral luxation of #21 and #22 with alveolar fracture adjacent to apex of #21

Treatment: CaOH Tx followed by RCT and splint for 4 weeks



DENTAL TRAUMA: HORIZONTAL ROOT FRACTURE AND LATERAL LUXATION



67 Year old male with a non-contributory medical history.

Patient is a logger who had a tree fall onto his face.

20 sutures on face and internally in his cheek

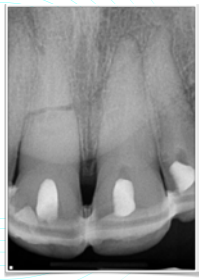
#11 was obliquely fractured and #21 and #22 were laterally luxated

#11 was reduced and #21 and #22 were repositioned within two hours of the accident by his general dentist and a rigid splint was placed. All 3 teeth tested non-vital. 10mm palatal pockets on all three teeth

Diagnosis: Oblique root fracture of #11, lateral lunation of #21 and #22 with alveolar fracture adjacent to apex of #21

Treatment: CaOH Tx followed by RCT and splint for 4 weeks

DENTAL TRAUMA: HORIZONTAL ROOT FRACTURE AND LATERAL LUXATION



67 Year old male with a non-contributory medical history.

Patient is a logger who had a tree fall onto his face.

20 sutures on face and internally in his cheek

#11 was obliquely fractured and #21 and #22 were laterally luxated

#11 was reduced and #21 and #22 were repositioned within two hours of the accident by his general dentist and a rigid splint was placed. All 3 teeth tested non-vital. 10mm palatal pockets on all three teeth

Diagnosis: Oblique root fracture of #11, lateral lunation of #21 and #22 with alveolar fracture adjacent to apex of #21

Treatment: CaOH Tx followed by RCT and splint for 4 weeks

PERMANENT TEETH - LATERAL LUXATION

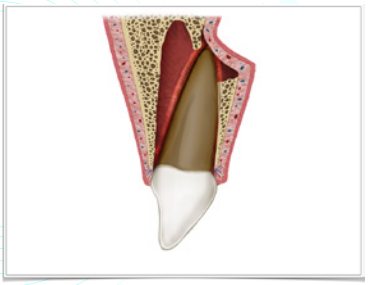
CLINICAL FINDINGS

- **The tooth is displaced, usually in a palatal/ lingual or labial direction.**
- It will be immobile and percussion usually gives a high, metallic (ankylotic) sound.
- Fracture of the alveolar process present.
- Sensibility tests will likely give negative results

RADIOGRAPHIC FINDINGS

- The **widened periodontal ligament space** is best seen on eccentric or occlusal exposures.

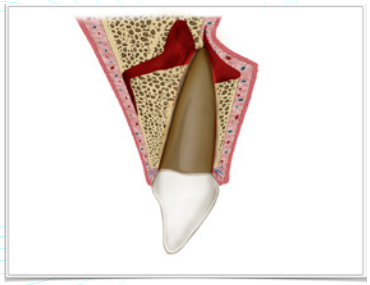
PERMANENT TEETH - LATERAL LUXATION



TREATMENT

- Reposition the tooth digitally or with forceps to disengage it from its bony lock and gently reposition it into its original location.
- Stabilize the tooth for 4-6 weeks using a flexible splint.
- Monitor the pulpal condition.
- If the pulp becomes necrotic, root canal treatment is indicated to prevent root resorption.

PERMANENT TEETH - ALVEOLAR FRACTURE



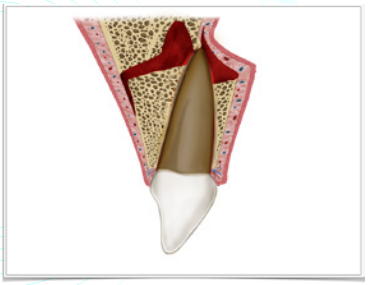
CLINICAL FINDINGS

- **The fracture involves the alveolar bone and may extend to adjacent bone.**
- Segment mobility and dislocation with several teeth moving together are common findings.
- An occlusal change due to misalignment of the fractured alveolar segment is often noted.
- Sensibility testing may or may not be positive.

RADIOGRAPHIC FINDINGS

- **Fracture lines may be located at any level, from the marginal bone to the root apex.**
- In addition to the 3 angulations and occlusal film, additional views such as a panoramic radiograph can be helpful in determining the course and position of the fracture lines.

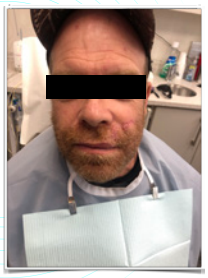
PERMANENT TEETH - ALVEOLAR FRACTURE



TREATMENT

- **Reposition any displaced segment and then splint.**
- Suture gingival laceration if present.
- **Stabilize the segment for 4 weeks.**

DENTAL TRAUMA: HORIZONTAL ROOT FRACTURE AND LATERAL LUXATION



67 Year old male with a non-contributory medical history.

Patient is a logger who had a tree fall onto his face.

20 sutures on face and internally in his cheek

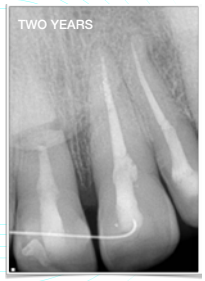
#11 was obliquely fractured and #21 and #22 were laterally luxated

#11 was reduced and #21 and #22 were repositioned within two hours of the accident by his general dentist and a rigid splint was placed. All 3 teeth tested non-vital. 10mm palatal pockets on all three teeth

Diagnosis: Oblique root fracture of #11, lateral luxation of #21 and #22 with alveolar fracture adjacent to apex of #21

Treatment: CaOH Tx followed by RCT and splint for 4 weeks

DENTAL TRAUMA: HORIZONTAL ROOT FRACTURE AND LATERAL LUXATION



67 Year old male with a non-contributory medical history.

Patient is a logger who had a tree fall onto his face.

20 sutures on face and internally in his cheek

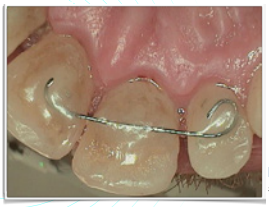
#11 was obliquely fractured and #21 and #22 were laterally luxated

#11 was reduced and #21 and #22 were repositioned within two hours of the accident by his general dentist and a rigid splint was placed. All 3 teeth tested non-vital. 10mm palatal pockets on all three teeth

Diagnosis: Oblique root fracture of #11, lateral luxation of #21 and #22 with alveolar fracture adjacent to apex of #21

Treatment: CaOH Tx followed by RCT and splint for 4 weeks

DENTAL TRAUMA: HORIZONTAL ROOT FRACTURE AND LATERAL LUXATION



67 Year old male with a non-contributory medical history.

Patient is a logger who had a tree fall onto his face.

20 sutures on face and internally in his cheek

#11 was obliquely fractured and #21 and #22 were laterally luxated

#11 was reduced and #21 and #22 were repositioned within two hours of the accident by his general dentist and a rigid splint was placed. All 3 teeth tested non-vital. 10mm palatal pockets on all three teeth

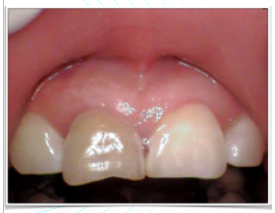
Diagnosis: Oblique root fracture of #11, lateral luxation of #21 and #22 with alveolar fracture adjacent to apex of #21

Treatment: CaOH Tx followed by RCT and splint for 4 weeks

PERMANENT TEETH - CONCUSSION

CASE #3

PERMANENT TEETH - CONCUSSION



65 Year old male with a non-contributory medical history.

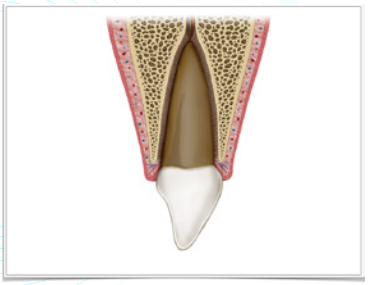
Patient suffered blow to tooth #11 35 years ago at the age of 21 years from an elbow in the face during a basketball game

No pain or discomfort, noticed discolouration 1 year ago.

#11 tested non-vital with asymptomatic apical periodontitis

#11 revealed an enamel fracture and enamel infraction

PERMANENT TEETH - CONCUSSION



CLINICAL FINDINGS

- **The tooth is tender to touch or tapping; it has not been displaced and does not have increased mobility.**
- Sensibility tests are likely to give positive results

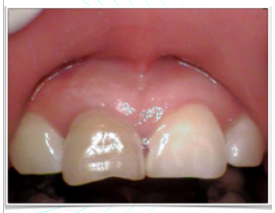
RADIOGRAPHIC FINDINGS

- No radiographic abnormalities

TREATMENT

- **No treatment is needed.**
- **Monitor pulpal condition for at least one year.**

PERMANENT TEETH - CONCUSSION



65 Year old male with a non-contributory medical history.

Patient suffered blow to tooth #11 35 years ago at the age of 21 years from an elbow in the face during a basketball game

No pain or discomfort, noticed discolouration 1 year ago.

#11 tested non-vital with asymptomatic apical periodontitis

#11 revealed an enamel fracture and enamel infraction

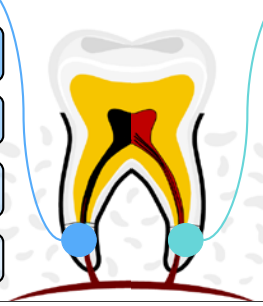
Diagnosis: Non vital pulp with asymptomatic apical periodontitis

Treatment: Root canal treatment followed by Non Vital Walking Bleach with sodium perborate

TOOTH BLEACHING

NON-VITAL TOOTH BLEACHING

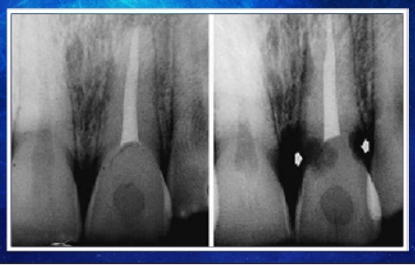
- Non-invasive technique to treat the intrinsic discoloration of teeth.
- Hydrogen peroxide and sodium perborate are commonly used.
- It refers to the color correction of a tooth that has had a root canal.
- Most patients see a difference in a few days



VITAL TOOTH BLEACHING

- It refers to the color correction of teeth with stained enamel.
- Gel whitening solutions are the most common way.
- In-office whitening can yield much more dramatic results.

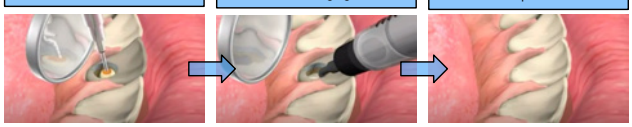
RESORPTION

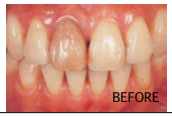


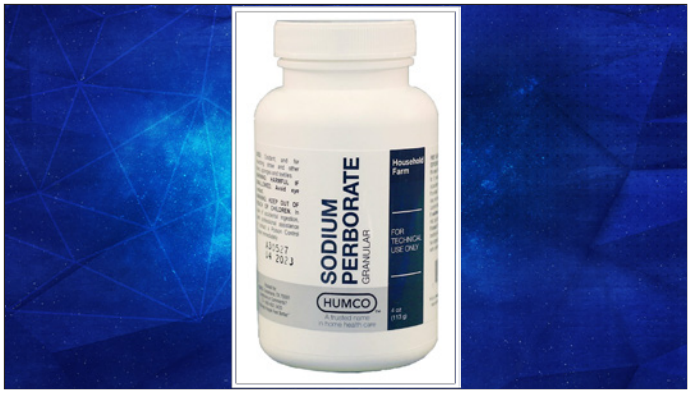
TOOTH BLEACHING

NON-VITAL TOOTH BLEACHING

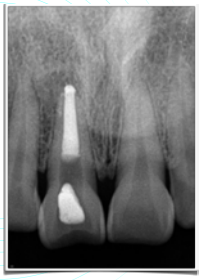
1. Drilling into the tooth.
2. Use the drilled hole to inject the bleaching agent.
3. Remove the whitening agent and sealing off the tooth using composite.







DENTAL TRAUMA: HORIZONTAL ROOT FRACTURE AND LATERAL LUXATION



65 Year old male with a non-contributory medical history.

Patient suffered blow to tooth #11 35 years ago at the age of 21 years from an elbow in the face during a basketball game

No pain or discomfort, noticed discolouration 1 year ago.

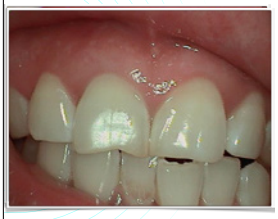
#11 tested non-vital with asymptomatic apical periodontitis

#11 revealed an enamel fracture and enamel infraction

Diagnosis: Non vital pulp with asymptomatic apical periodontitis

Treatment: Root canal treatment followed by Non Vital Walking Bleach with sodium perborate

DENTAL TRAUMA: HORIZONTAL ROOT FRACTURE AND LATERAL LUXATION



65 Year old male with a non-contributory medical history.

Patient suffered blow to tooth #11 35 years ago at the age of 21 years from an elbow in the face during a basketball game

No pain or discomfort, noticed discolouration 1 year ago.

#11 tested non-vital with asymptomatic apical periodontitis

#11 revealed an enamel fracture and enamel infraction

Diagnosis: Non vital pulp with asymptomatic apical periodontitis

Treatment: Root canal treatment followed by Non Vital Walking Bleach with sodium perborate

SELF EVALUATION

Emergency Endodontics and Trauma Management: Clinical Case Review

True/False

1. Irreversible pulpitis is considered an endodontic emergency and typically presents with lingering pain to hot or cold stimuli.

2. A tooth with symptomatic apical periodontitis will always present with swelling.

3. Avulsed permanent teeth should ideally be replanted immediately at the site of injury or stored in a suitable medium like milk if delayed.

4. A fractured tooth that is not causing pain and has no mobility does not require urgent evaluation.

5. In endodontic emergencies, achieving drainage through the canal or soft tissue incision can significantly reduce pain and pressure.

6. Intrusive luxation is when a tooth is displaced laterally from its socket, usually due to trauma.

7. Pulp testing may be unreliable immediately after a traumatic dental injury and should be repeated over time to assess vitality.

Answer Key: 1. T, 2. F, 3. T, 4. F, 5. T, 6. F, 7. T

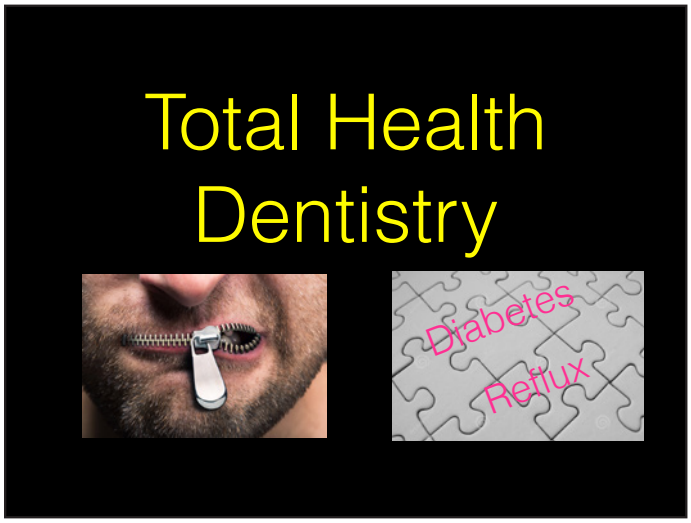
Susan Maples, DDS, MSBA

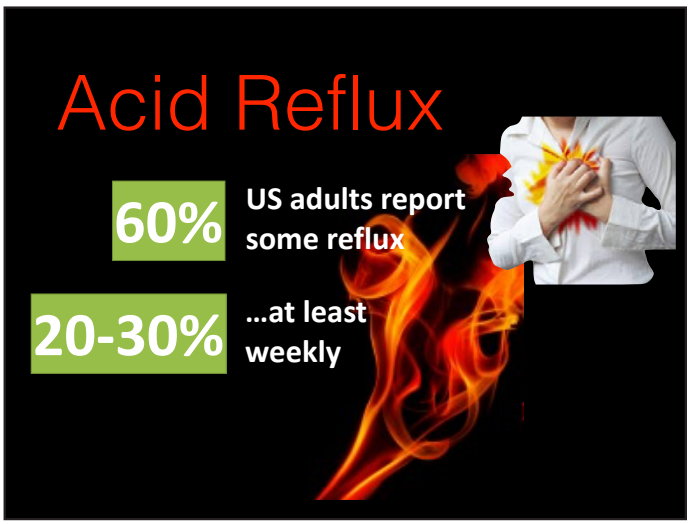
Dr. Maples, of East Lansing, Michigan, is a long time, general and restorative dentistry clinician who, following her receipt of a master's degree in business, developed a passion for organizational behavior, executive leadership, and target marketing. An expert in mouth-body connections, Dr. Maples is a practitioner of Integrative Dental Medicine at Total Health Practice. She is also a sought-after national presenter to both dental and medical audiences, serves on the executive board of the American Academy of Oral Systemic Health, and is a Fellow of the International College of Dentists.

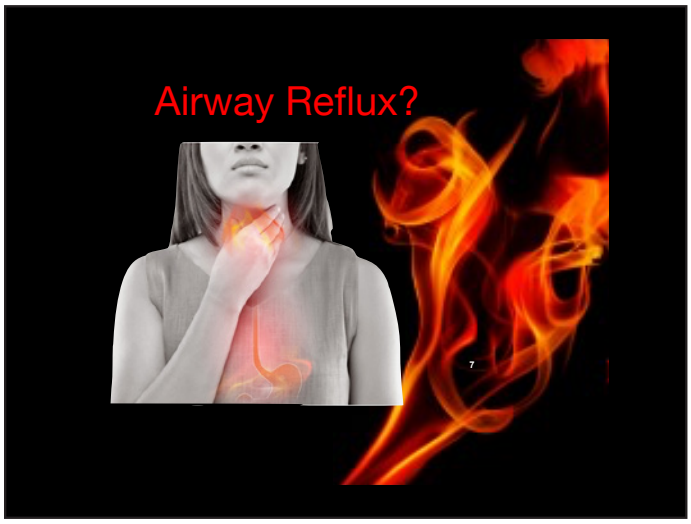
You may contact her with questions or comments at Soooos@Comcast.net. You may also visit her website at DrSusanMaples.com, TotalHealthPractice.net and DrSusanMaplesSpeaker.com.

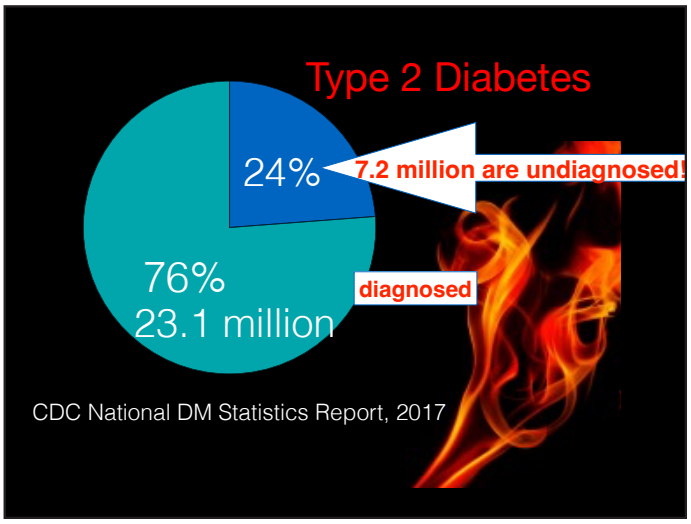
Susan Maples, DDS, MSBA
Total Health Dentistry
2101 N. Aurelius Road, Suite 1
Holt, Michigan, 48842
Total-Health-Dentistry.com | Susan@DrSusanMaples.com

Reflux and Diabetes Detection in the Dental Office

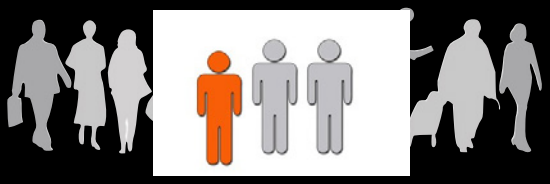








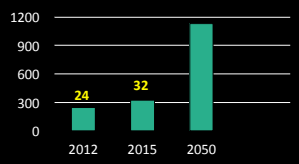
Type 2 DM Affects 37.3 Million



Crippling Cost of Treating T2 Diabetes

86mil ➡ 37.3 ➡ 116

150 Insulin resistant



CDC National DM Statistics Report, 2017

It is estimated that
75% of our U.S. health care costs are from chronic *preventable* disease!

12

EAT Your kid vs. today's food craziness: It's a lot to swallow!

DRINK Bubble, Fizz, Guzzle Gulp: What is this stuff anyway?

DIGEST Support the bugs in your kid's gut…or their gut will bug them!

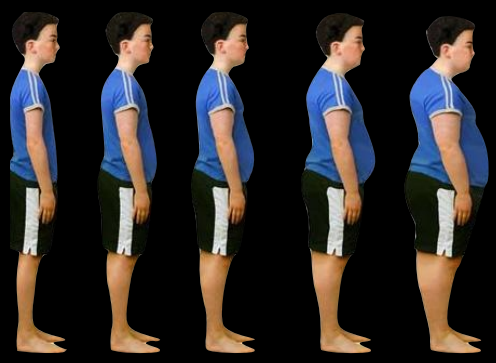
BREATHE Growing the tongue box: It's the shape of things to come!

SLEEP The greatest underrated frontier!

FEEL & THINK Brainiac-Yak Yak!

CHEW & SMILE Oral health *wise*

MOVE Foster a daily dose of get-up an



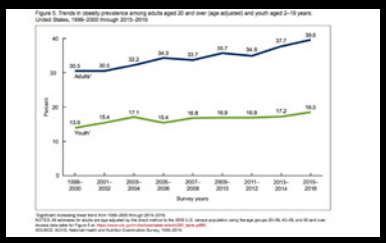


Facilitating Health Change Behavior

Facilitation is dialogue through whic you support t patient's self discovery

Directing Style (Education)

Following Style
Guiding Style

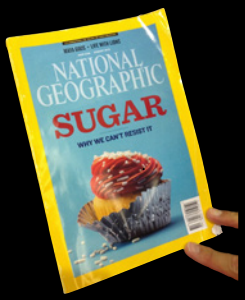


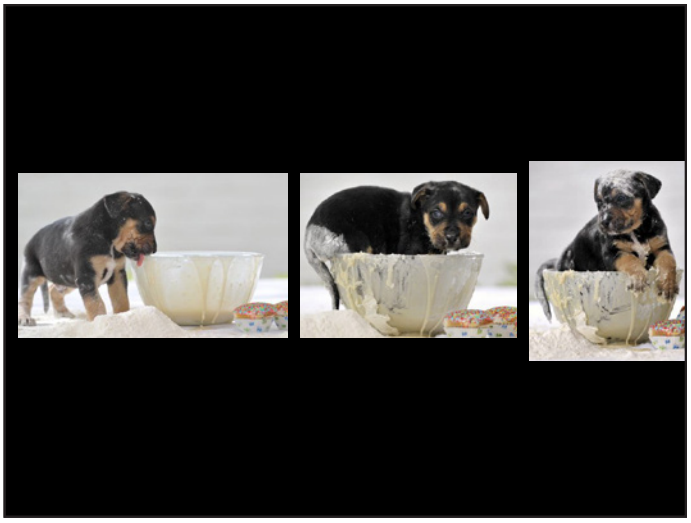
Addressing Obesity

Reasons

- Lack of knowledge/education
- Lack of trained personnel
- Fear of appearing judgmental
- Fear of looking like a hypocrite
- Lack of good referral options
- Lack of interest in the subject

What is the primary cause of the obesity epidemic?






NEW YORK TIMES BESTSELLER
FAT Chance
Beating the Odds Against SUGAR, PROCESSED FOOD, OBESITY, and DISEASE
Robert H. Lustig, M.D.
ROBERT H. LUSTIG, MD, MSL
Metabolical
The Lure and the Lies of Processed Food, Nutrition, and Modern Medicine

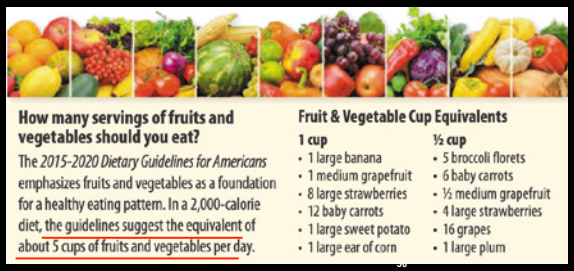

W.H.O. 2014 Recommendation


W.H.O. 2014 Recommendation
Cut our sugar consumption by 75%
100 calories = 26 g = 6.2 teaspoons*
5% of daily caloric intake


1 can = 38 grams of sugar!

5 Top Nutritional Deficiencies:

1. Fiber
2. Vitamin D
3. Long Chain *Omega-3* fats
4. Vitamin B (folic acid and B 12)
5. Calcium



How many servings of fruits and vegetables should you eat?

The *2015-2020 Dietary Guidelines for Americans* emphasizes fruits and vegetables as a foundation for a healthy eating pattern. In a 2,000-calorie diet, the guidelines suggest the equivalent of about 5 cups of fruits and vegetables per day.

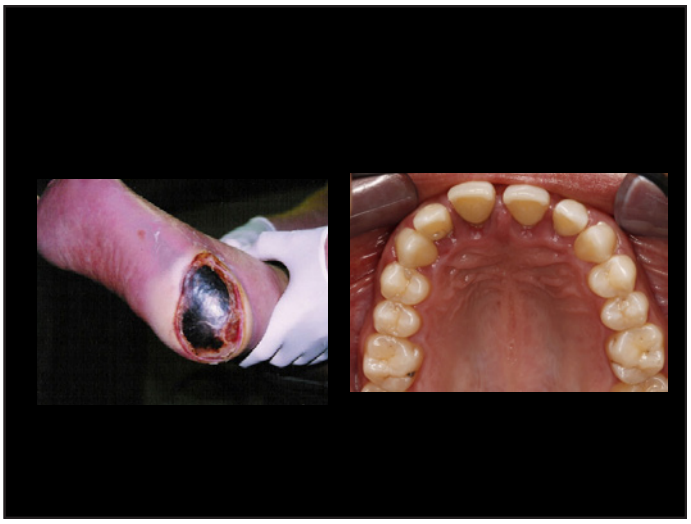
Fruit & Vegetable Cup Equivalents

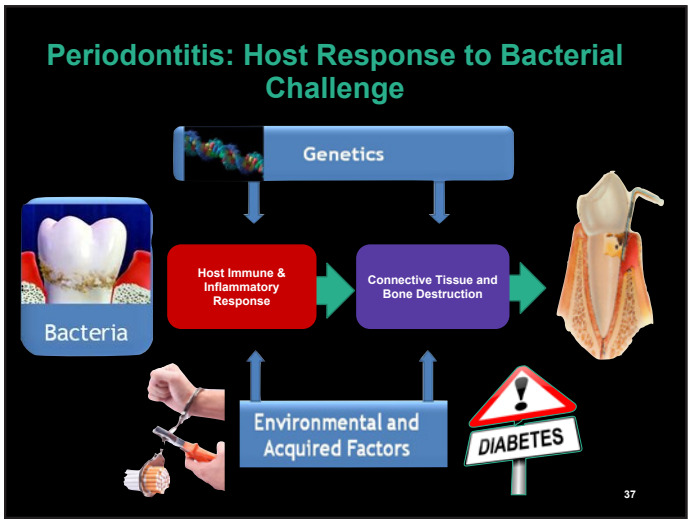
1 cup	½ cup
• 1 large banana	• 5 broccoli florets
• 1 medium grapefruit	• 6 baby carrots
• 8 large strawberries	• ½ medium grapefruit
• 12 baby carrots	• 4 large strawberries
• 1 large sweet potato	• 16 grapes
• 1 large ear of corn	• 1 large plum

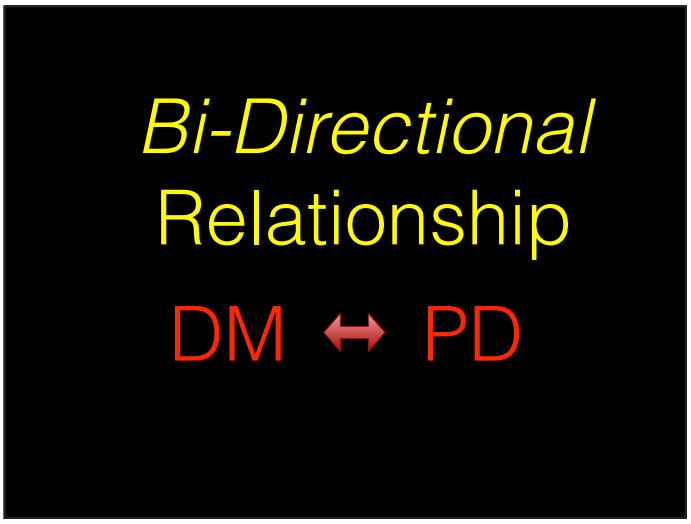
Daily Recommended Fiber:

- Toddlers age 1-3 years should get 19g. of fiber each day
- children 4-8 years should get 25g.
- Boys and girls age 9-13 years should get 31g.
- Teens age 14-18 years should get 38g.


What else is the problem?




Periodontitis: Host Response to Bacterial Challenge
Genetics
Bacteria
Host Immune & Inflammatory Response
Connective Tissue and Bone Destruction
Environmental and Acquired Factors
DIABETES


Bi-Directional
Relationship
DM ↔ PD

The Relationship Between Oral Health and Diabetes Mellitus
ra B. Lamster, DDS, MMSc; Evanthia Lalla, DDS, MS; Wenche S. Borgnakke, DDS, PhD; George W. Taylor, DMD, DrPH, Oct 2008

"Diabetes is believed to promote periodontitis through an exaggerated inflammatory response to the periodontal microflora".

Results. Although a number of oral disorders have been associated with diabetes mellitus, the data support the fact that periodontitis is a complication of diabetes. Patients with long-standing, poorly controlled diabetes are at risk of developing oral candidiasis, and the evidence indicates that periodontitis is a risk factor for poor glycemic control and the development of other clinical complications of diabetes. Evidence also suggests that periodontal changes are the first clinical manifestation of diabetes.

The Relationship Between Oral Health and Diabetes Mellitus
Ira B. Lamster, DDS, MMSc; Evanthia Lalla, DDS, MS; Wenche S. Borgnakke, DDS, PhD; George W. Taylor, DMD DrPH, Oct 2008

"Evidence also suggests that periodontal changes are the first clinical manifestation of diabetes."

40

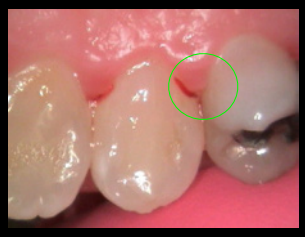
Early T2DM

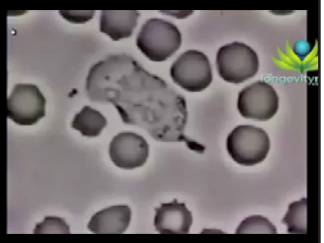
- Unusual thirst
- Frequent urination
- Bleeding gums!!

41

Oral Signs

- Gingivitis
- Periodontitis
- Dental Caries
- Salivary Dysfunction
- Oral Infections
- Candidiasis
- Taste Interference
- Neurosensory Disorders





Getting off the Peri-Go-Round

44

Question:

What elements would we have to consider to ***truly*** create periodontal stability once and for all?

45

Periodontal Disease Risk Factors

Oral Risk Factors

- Inflammation
  - mild mod severe
- Pocket depths (generalized)
  - mild mod severe
- Furcation involvement
  - mild mod severe
- Mobility
  - mild mod severe
- Root caries
- Gingival overgrowth/hyperplasia
- Salivary hypofunction
  - mild mod severe
- Suspicion of Candida
- Homecare skills/habit development
  - inadequate adequate
- Previous Perio Therapy

Systemic Risk Factors

- Suspicion of food sensitivities
- Suspicion of chemical sensitivities
- Metabolic disease
  - obesity/insulin resistance
  - pre-diabetes/diabetes
  - acid reflux
  - A1C
- Physical difficulty/ poor manual dexterity
- Genetics
  - young age
  - parents or immediate family members that have lost teeth from gum disease
  - rapid or severe bone loss
- Tobacco or Cannabis use
- Polypharmacy
- Inflammatory Diet
- History of CVD
  - Hypertension
  - Hyperlipidemia
  - Previous Cardiac Event
- Suspicion of OSA or untreated OSA
- Depression
- Heightened Stress Factors

46

47

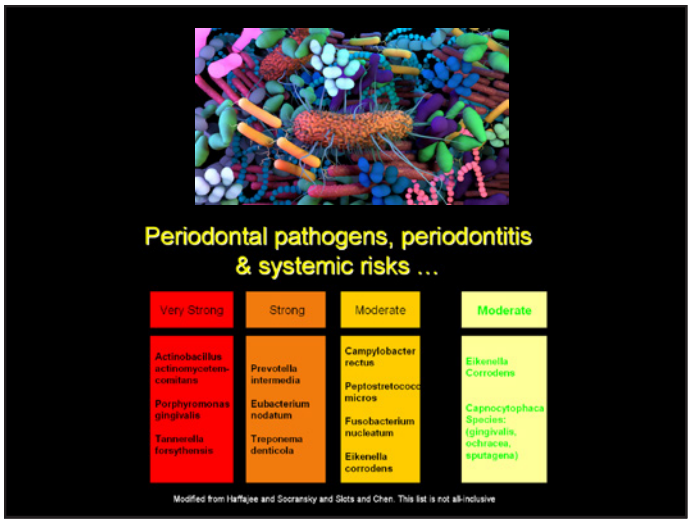
"It is difficult to get a man to understand something when his salary depends on his *not* understanding it."

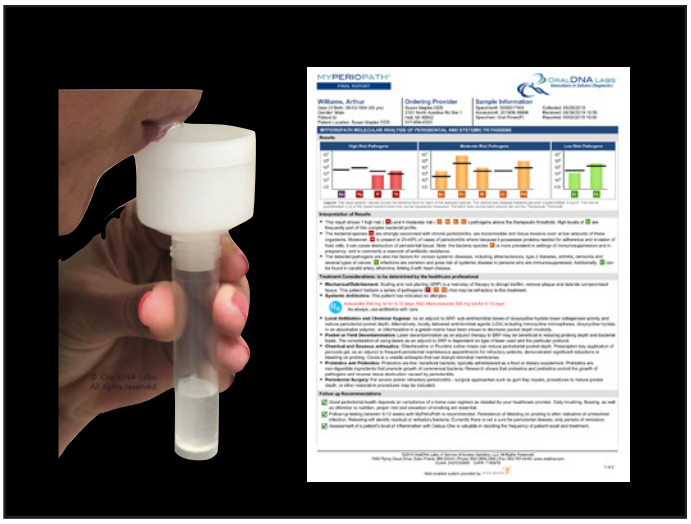
--Upton Sinclair

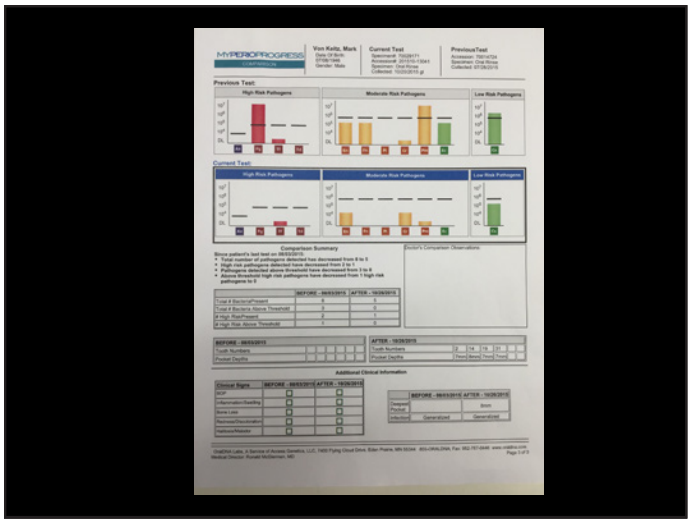
2016

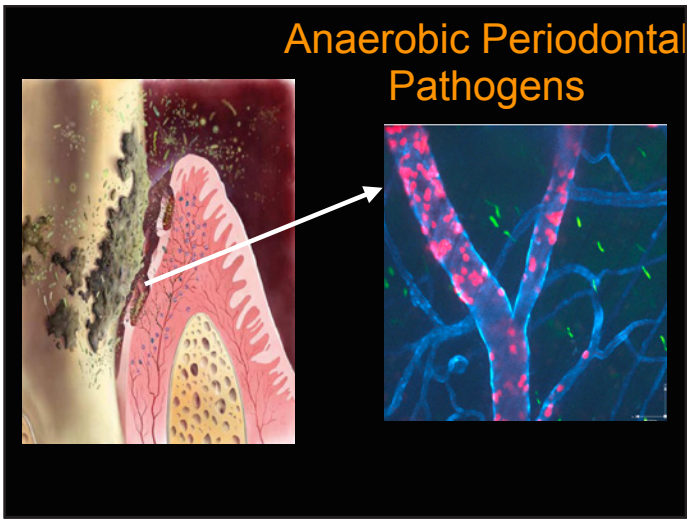
49

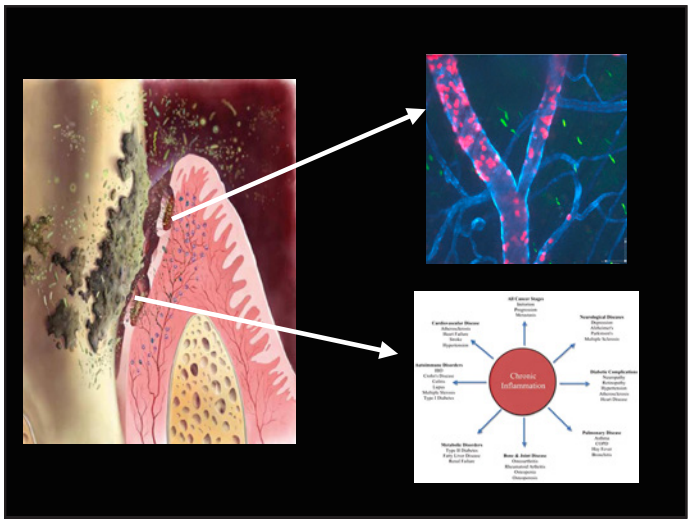
50

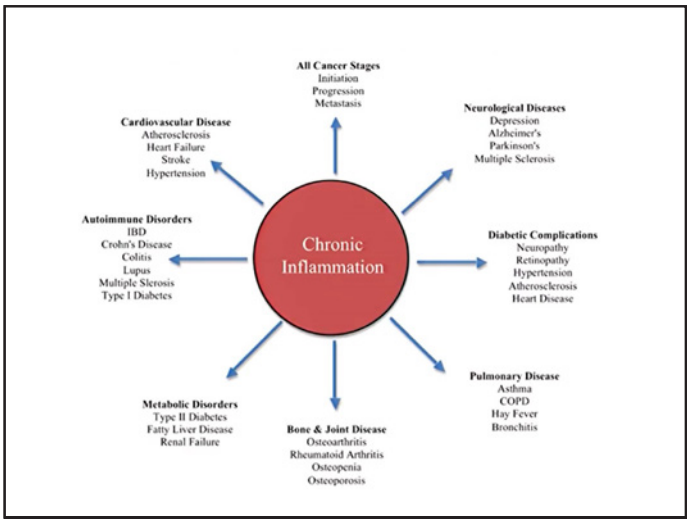

Periodontal pathogens, periodontitis & systemic risks …
Very Strong
Strong
Moderate
Moderate
Actinobacillus actinomycetem-comitans
Porphyromonas gingivalis
Tannerella forsythensis
Prevotella intermedia
Eubacterium nodatum
Treponema denticola
Campylobacter rectus
Peptostretococcus micros
Fusobacterium nucleatum
Eikenella corrodens
Eikenella Corrodens
Capnocytophaca Species: (gingivalis, ochracea, sputagena)
Modified from Haffajee and Socransky and Slots and Chen. This list is not all-inclusive

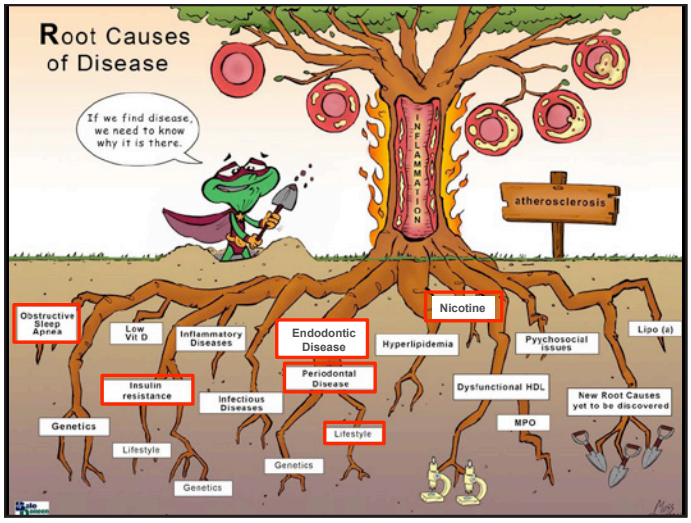

MYPERIOPATH
ORALDNA LABS

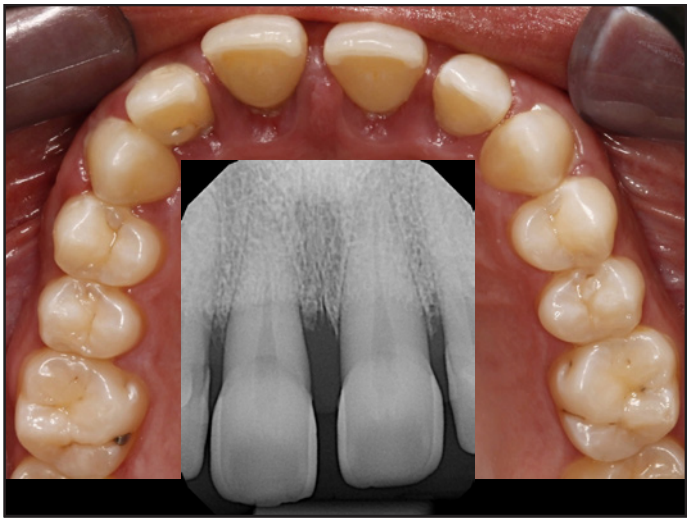



Anaerobic Periodontal Pathogens


Chronic Inflammation


All Cancer Stages
Initiation
Progression
Metastasis
Cardiovascular Disease
Atherosclerosis
Heart Failure
Stroke
Hypertension
Neurological Diseases
Depression
Alzheimer's
Parkinson's
Multiple Sclerosis
Autoimmune Disorders
IBD
Crohn's Disease
Colitis
Lupus
Multiple Sclerosis
Type I Diabetes
Chronic Inflammation
Diabetic Complications
Neuropathy
Retinopathy
Hypertension
Atherosclerosis
Heart Disease
Metabolic Disorders
Type II Diabetes
Fatty Liver Disease
Renal Failure
Bone & Joint Disease
Osteoarthritis
Rheumatoid Arthritis
Osteopenia
Osteoporosis
Pulmonary Disease
Asthma
COPD
Hay Fever
Bronchitis





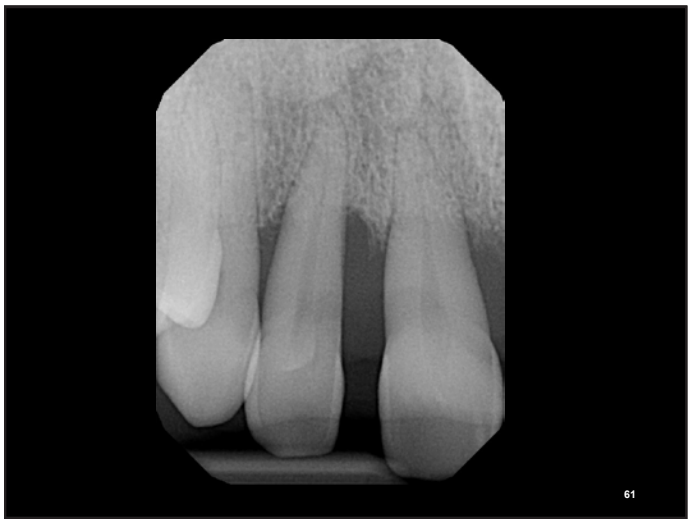
Januvia®

Invokana®

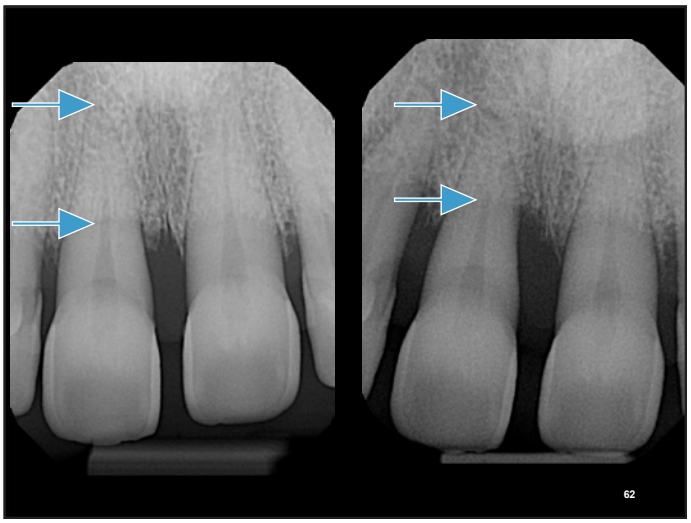
Lantus®

Farxiga®

60



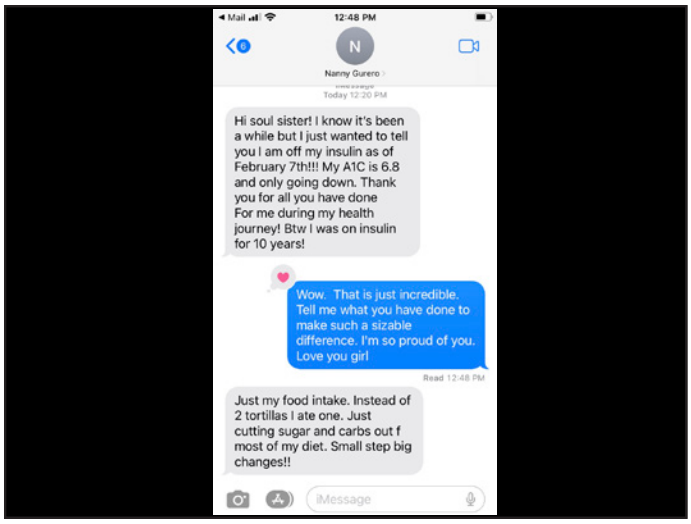
61

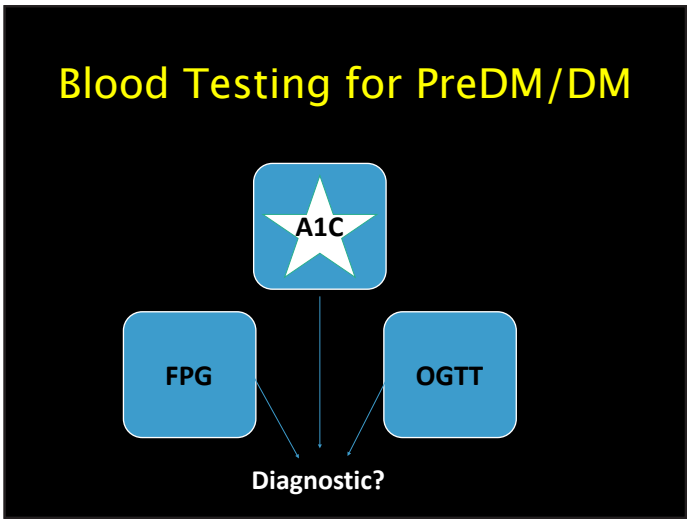


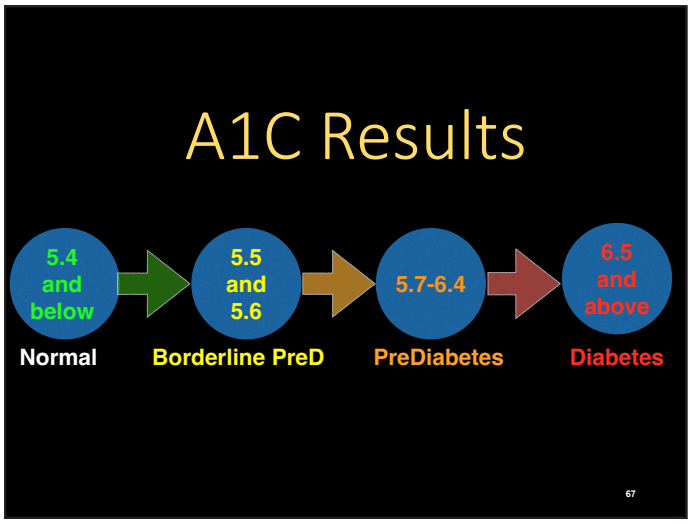
62

63

64







67

Now we recognize HbA1c should not be used alone because only there is only significant predictability over 6.5.

But periodontal pocketing is the only other risk factor we need.

68

Dental Parameters Coupled with Elevated A1c

- 25% of teeth have 5mm pockets depth

OR…

- 4 or more teeth lost

AND…

- A1c of 5.7 or greater

Result: We diagnose pre-DM or DM with 92% confidence!

Lalla, E, et al. 7/2011 J Dent Res 90(7); 855-860

69

The ADA code for HbA1C is 0411

No requirement to report to their physician but do it as a curtesy
Or at lease advise your patient to inform their doc.

70

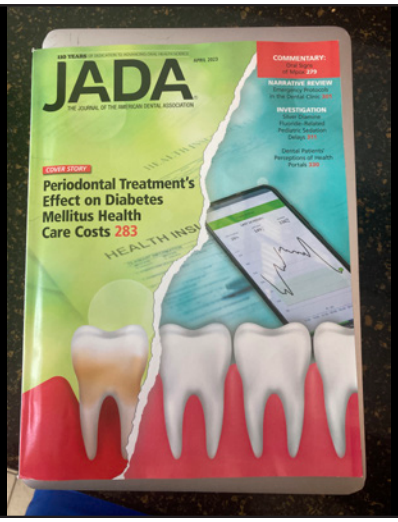
71

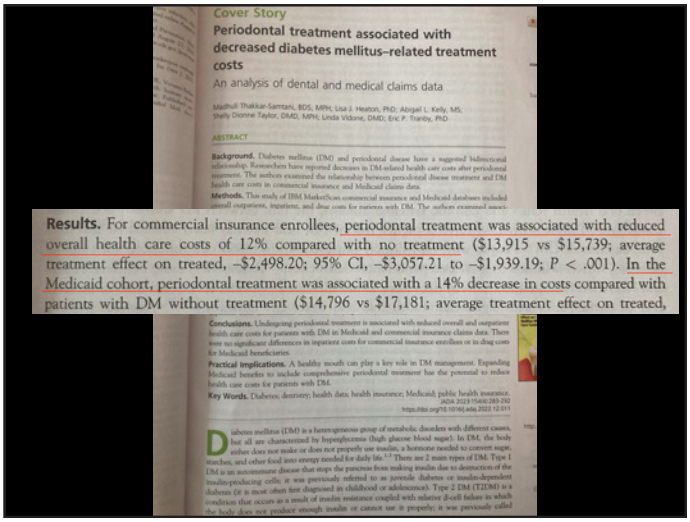
If only…….

60% of diabetic patients better managed their gum disease……

39 B would be our U.S. medical cost savings… or $1845.00 per diabetic adult!

2014 Oral Health Study by United Concordia/Dr. Marjorie Jeffcoat




Cover Story

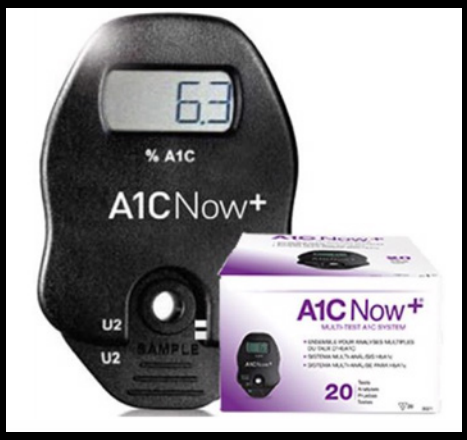
Periodontal treatment associated with decreased diabetes mellitus–related treatment costs

An analysis of dental and medical claims data

Results. For commercial insurance enrollees, periodontal treatment was associated with reduced overall health care costs of 12% compared with no treatment ($13,915 vs $15,739; average treatment effect on treated, –$2,498.20; 95% CI, –$3,057.21 to –$1,939.19; P < .001). In the Medicaid cohort, periodontal treatment was associated with a 14% decrease in costs compared with patients with DM without treatment ($14,796 vs $17,181; average treatment effect on treated,

Conclusions:

Undergoing periodontal treatment was associated with significant reductions in overall health care costs for patients with DM in both Medicaid and commercial insurance claims data, with a larger difference seen for Medicaid enrollees. Inpatient costs did not decrease significantly within the commercial insurance cohort, and drug costs did not decrease significantly within the Medicaid cohort. A healthy mouth can play a key role in a DM management program. Expanding Medicaid benefits to include comprehensive periodontal treatment has the potential to reduce overall health care costs for patients with DM. ■

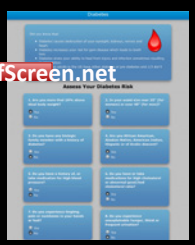


American Diabetes Association HbA1c Testing Guidelines

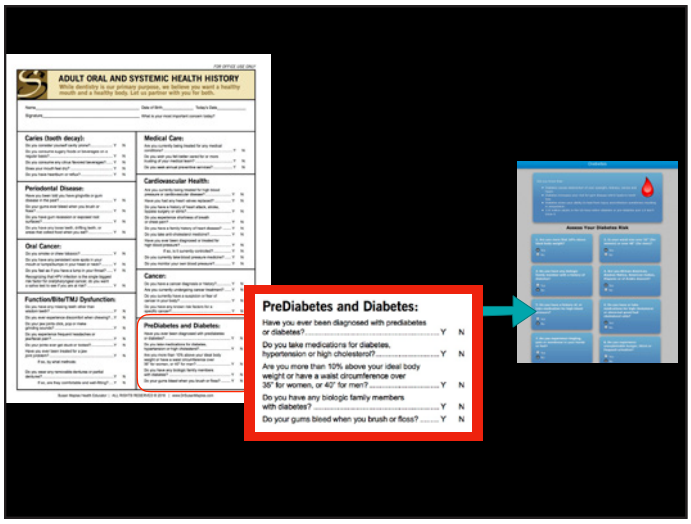
1. Adults who are overweight or obese (BMI > 25 kg/m2 or > 23 kg/m2 in Asian Americans) *and* who have one or more additional risk factors for diabetes.
2. For *all* patients, testing should begin at age 45 years.
3. If tests are normal, repeat testing at a minimum of 3-year intervals

Detection of Undiagnosed PreDiabetes and Diabetes in Dental Patients: A Proposal of a Dental-Office-Friendly Diabetes Screening Tool

Journal of Diabetes Mellitus, Feb 2016, 6, 25-37



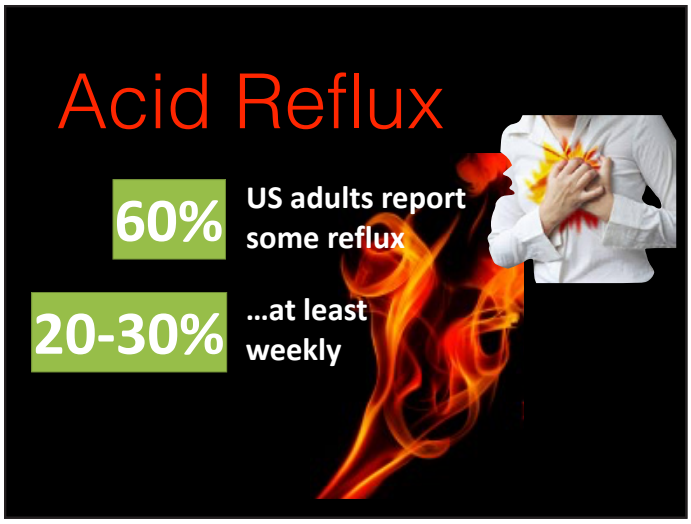

SelfScreen.net
Discover your oral & systemic health risks!

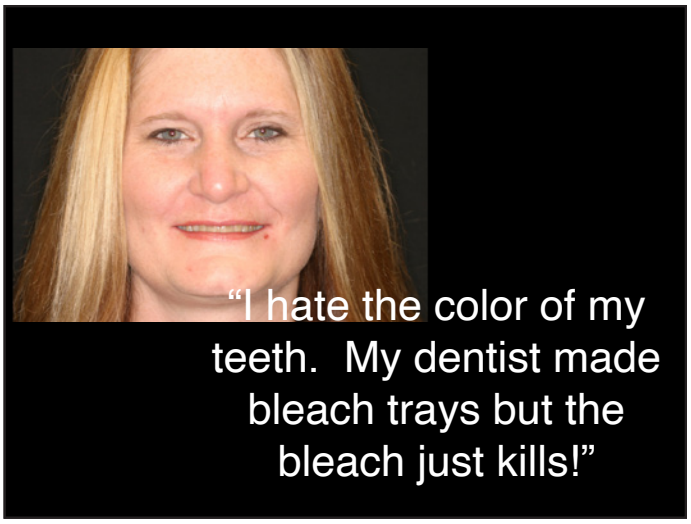

ADULT ORAL AND SYSTEMIC HEALTH HISTORY
PreDiabetes and Diabetes:
Have you ever been diagnosed with prediabetes or diabetes?
Do you take medications for diabetes, hypertension or high cholesterol?
Are you more than 10% above your ideal body weight or have a waist circumference over 35" for women, or 40" for men?
Do you have any biologic family members with diabetes?
Do your gums bleed when you brush or floss?

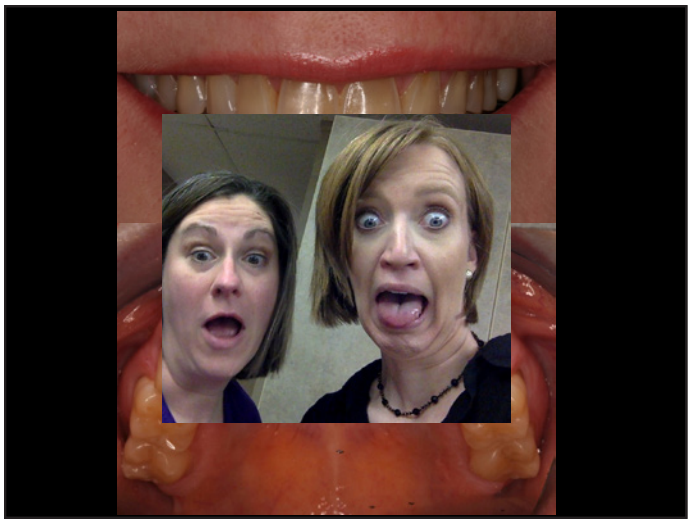

Communicating with Medical Professionals


PERIODONTAL DISEASE
The Importance of Discovery & Treatment
YOUR PERIODONTAL DISEASE: We Take It Seriously!

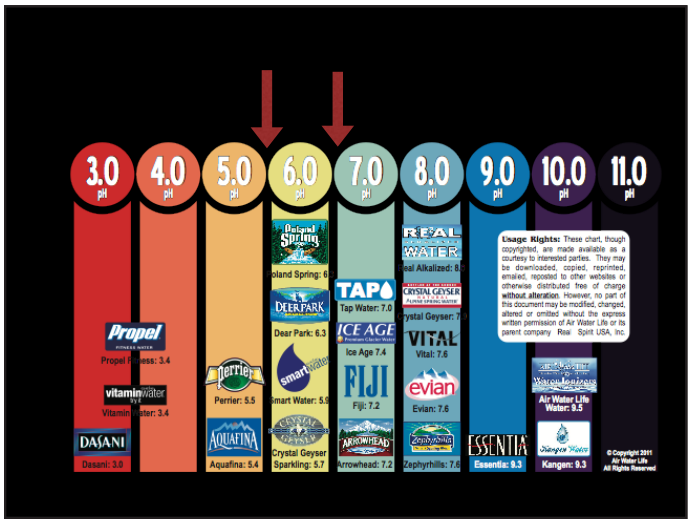

SCAN THIS QR CODE FOR MORE SUPPORT MATERIALS


Acid Reflux
60%
US adults report some reflux
20-30%
...at least weekly


"I hate the color of my teeth. My dentist made bleach trays but the bleach just kills!"




742
20
DASANI


3.0 pH
4.0 pH
5.0 pH
6.0 pH
7.0 pH
8.0 pH
9.0 pH
10.0 pH
11.0 pH
Propel
vitaminwater
DASANI
Perrier
AQUAFINA
DEER PARK
smartwater
Crystal Geyser
TAP
ICE AGE
FIJI
ARROWHEAD
REAL WATER
CRYSTAL GEYSER
VITAL
evian
ESSENTIA
Air Water Life
Usage Rights: These chart, though copyrighted, are made available as a courtesy to interested parties. They may be downloaded, copied, reprinted, emailed, reposted to other websites or otherwise distributed free of charge without alteration. However, no part of this document may be modified, changed, altered or omitted without the express written permission of Air Water Life or its parent company Real Spirit USA, Inc


PH2OH
www.PH2OH.com

Proton Pump Inhibitors

- Prilosec (omeprazole)
- Prevacid (lansprazole)
- Nexium (esomeprazole)
- Dexilent, Kapidex (dexlansoprazole)
- Aciphex (rabeprazole)
- Protoix (pantoprazole)
- Regard (rapid release omeprazole)

Broad Based Product Warnings

By reducing the acid produced by the stomach lining can alter absorption of some minerals such as iron, calcium and magnesium and B12

The Role of Reflux in Esophageal Carcinogenesis

Acid Reflux —5%→ Barrett's Esophagus —.12 -.5%→ Esophageal Ca

- Obesity
- Age (more prevalent among older population)
- Ethnicity (more prevalent for Caucasians)

- HPV-persistent infection
- Smoking History
- Acidic Diet
- Habitual alcohol
- Hot Beverages
- Food Sensitivities

PPIs → Dysbiosis, and Infection

- Stomach acid directly destroys harmful pathogens.
- When acid is shut down, ~50% of ingested bacteria survive by slipping past our gastric acid trap.
- Translocated bacteria disrupt gut microbiota, leading to dysbiosis, SIBO, and dyspepsia.
- 70% of immune system resides in GI tract: critical line of defense.
- By altering balance between beneficial and pathogenic microbes, the risk for infection is increased

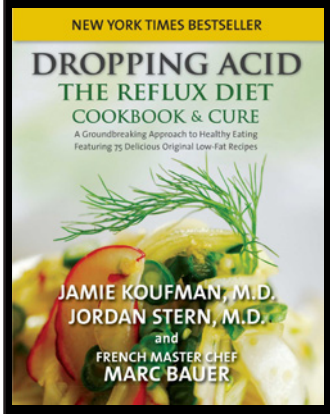
96

PPI and C. difficile Infection

FDA warning 2012:
"PPIs increase risk of C.diff infection which can cause diarrhea and life-threatening inflammation of the colon."

Review of 56 studies (n=356,000) warns PPIs result in double the odds of C. difficile infection

97



Histamine-2-Receptor Antagonists (H2RA)

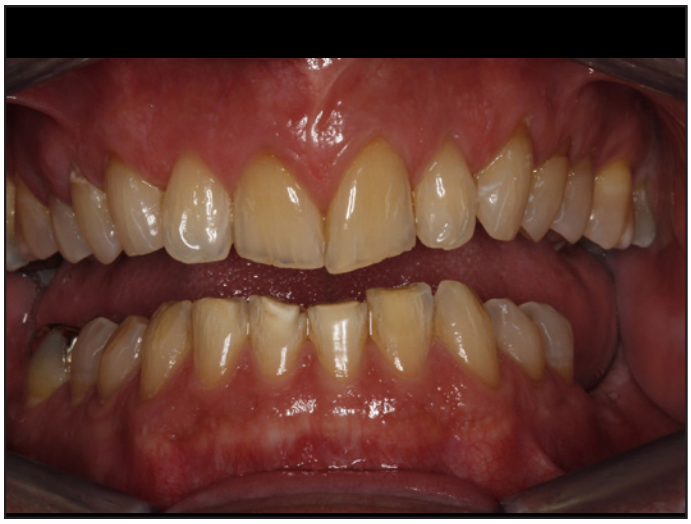
- Zantac (ranitidine)
- Pepcid (famotidine)
- Tagamet (cimetidine)
- Axid (nizatidine)

The *Silent* Factors of Reflux

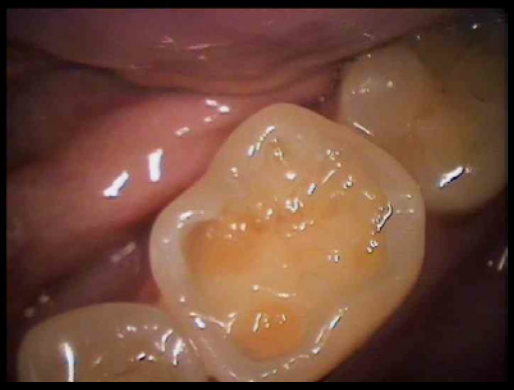
- •Enamel Erosion
- •Active Caries
- •Hoarse voice
- •Post nasal drip
- •Throat Clearing
- •Chronic cough
- •A lump in the throat
- •Indigestion, burping, bloating, nausea

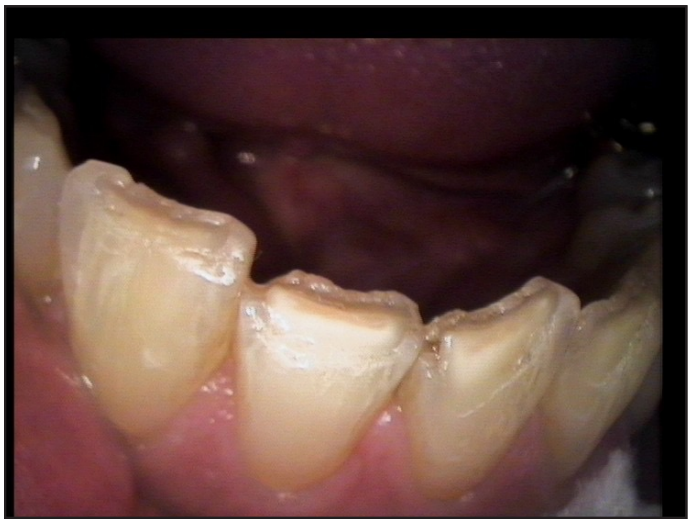
Effects of Acidosis on the Mouth:

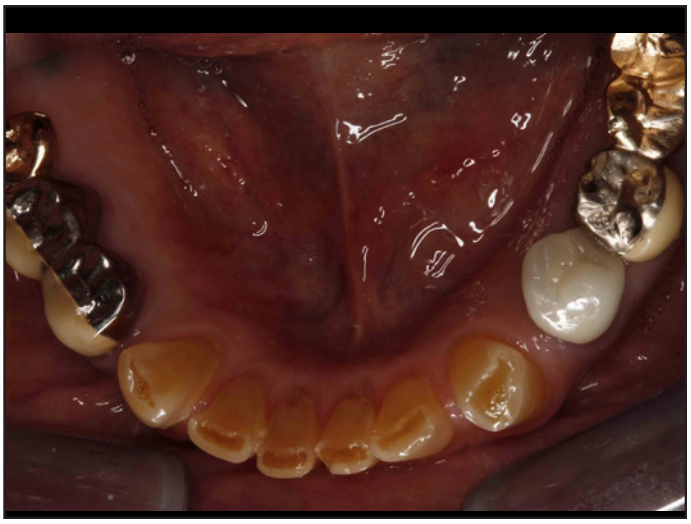
- • Enamel Erosion
- • Caries and Root Caries
- • Fungal infections (9 strains)
- • Chronic gingival inflammation
- • Periodontal Disease



Reflux and Bruxism





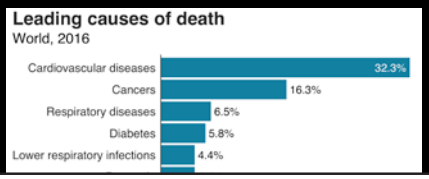


Initial signs of body tissue acidity include:

- Feeling weak, tired and having low energy
- Agitation, anxiety, panic attacks and depression
- Skin problems like eczema, psoriasis, acne and hive
- Generalized aches and pains
- GI: Diarrhea, constipation, bloating or nausea
- Menstural cramping
- Reflux/ Heartburn
- Increased caries rate
- Loss of libido

Signs of long-term body acidity are far more serious and include:

- Osteoporosis
- Weak immune system
- Chronic digestive problems
- Arthritis, joint and ligament problems
- Kidney stones, kidney diseases and gout
- Heart and circulation problems
- Fungal and bacterial infections
- Cancers



Acidosis and CVD

- Arteriosclerosis
- Aneurysm
- Arrhythmias (including tachycardia)
- Myocardial infarction (heart attack)
- Cardiovascular accident (stroke)

Acidosis and Osteoporosis

Osteoporosis is *less* about the lack of dietary calcium. It's *more* about acidification of the body.

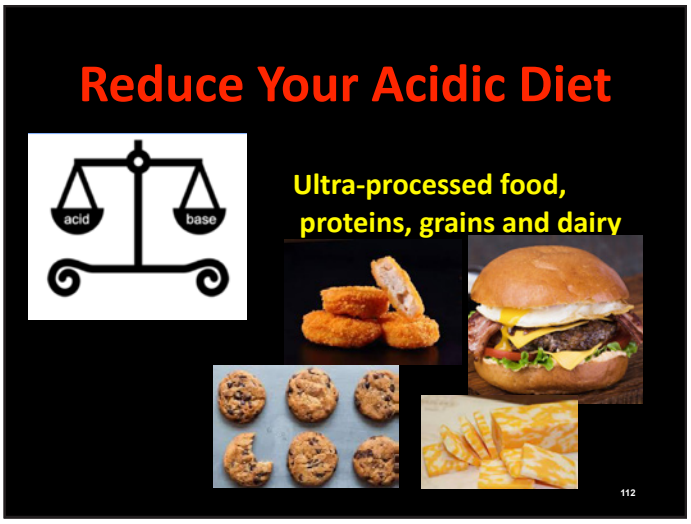
Result: We borrow a buffer—Calcium from our bones!

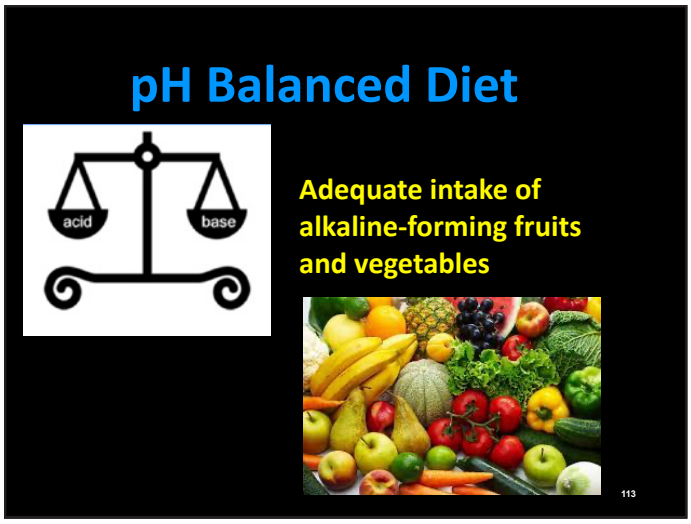
As we age we become more acidic

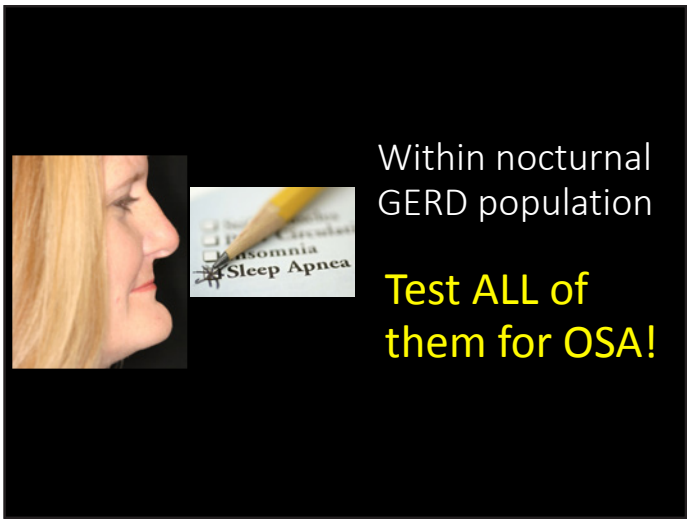
The body of most aged individuals is very acidic, loaded with toxic wastes in the blood stream, cells and lymphatic system.

If you could keep your skin, muscles, organs and glands alkaline like they were when you were a baby, you would dramatically slow down the aging process

Helping Patients Re-gain pH Balance







Physical Signs of SDB/OSA

- Mallampati Classification 3 or 4
- Narrow Maxilla/ Vaulted Palate
- Large Neck Circumference
- Deep Overbite
- Scalloped Tongue
- Enlarged Tonsils
- Worn Dentition
- Bent Posture
- Retrognathic mandible
- Small Crico-Mental space (turkey wattle)

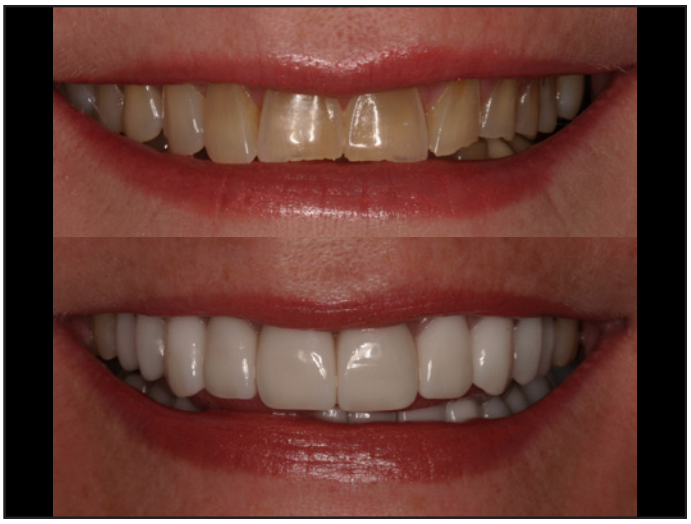
Reflux Triggers/Bio-Individuality

- Alcohol, particularly red wine
- Coffee, tea and carbonated drinks
- Gluten
- Black pepper, garlic, raw onion
- Spicy foods and peppermint
- Dairy products (Caseins, Lactose)
- Tomatoes
- Chocolate
- Other night shade vegetables
- Tree nuts and peanuts
- Eggs

INSPIRE HEALTH COACHING

Mary Beth Palmer-Gierlinger, CHC, AADP
InspireHealthCoaching.com

116




COLLABORATION
CURES
2023
COLLABORATION
CURES
2023
SEPTEMBER 7-10
Caribe Royale Orlando • Florida
AAPMD
ORAL&SYSTEMIC HEALTH
IAOMT
108


TOTAL HEALTH
ACADEMY


Susan@DrSusanMaples.com
(517) 819 6330


Be the change
YOU want to see in
the world.
WALK
THE TALK

SELF EVALUATION

Reflux and Diabetes Detection in the Dental Office

1. T/F - Insulin Resistance is a condition whereby the cells don't recognize circulating insulin so the beta cells in the pancreas go into overdrive

2. Insulin Resistance is thought to be the pre-curser to

a. Pre-Diabetes
b. Type 2 Diabetes
c. Hypoglycemia
d. A and B

3. Pre-Diabetes and Diabetes currently affects 105 million American adults and Insulin Resistance affects

a. 150 million American Adults (half our population)
b. 50% of adults with Type 2 Diabetes
c. only the patients who take medication for Diabetes
d. none of the above

4. T/F - Insulin Resistance is considered a significant form of chronic inflammation

5. The following HbA1C level is indicative of diabetes:

a. 3.5
b. 5.4
c. 7.5
d. None of the above

6. Acid reflux puts you at risk for

a. Barrett's esophagus
b. Esophageal cancer
c. Enamel Erosion
d. Caries
e. All of the above

7. T/F - Systemic acidosis is a healthy state for the human body, as it results in weight loss.

8. What percentage of American adults report having some acid reflux:

a. 30%
b. 40%
c. 50%
d. 60%

9. Which foods/beverages do NOT commonly cause acid reflux

a. Tomato sauce
b. Coffee
c. Roasted vegetables
d. Wine
e. Chocolate

10. PPIs (Proton Pump Inhibitors) are not supposed to be taken for more than two weeks at a time because they

a. the dietary absorption of calcium
b. Block the dietary absorption of iron
c. Block the dietary absorption of magnesium
d. Block the dietary absorption of vitamin B12
e. All of the above

11. Long term PPI dependency is linked to

a. Barrett's esophagus and laryngeal spasm
b. Nephritis and kidney cancer
c. Osteoporosis and kidney stones
d. B and C
e. All of the above

Answer Key: 1. T, 2. B, 3. A, 4. T, 5. C, 6. E, 7. F, 8. D, 9. C, 10. E, 11. D

Eric J. Ploumis, DMD, JD
453 Second Avenue
New York, NY 10010
EPloumis@DentalPracticeLawyers.com

Salivary Diagnostics and Genomics: Legal and Ethical Considerations

Presentation Objectives:

- Understand the nexus of this emerging technology and evolving law
- Evaluate the risk-management issues that accompany implementing this new technology in your office
- Implement protocols to reduce liability exposure
- Provide you with a conceptual framework to evaluate the suitability of new technology for your office
- Address some of the ethical issues this new technology presents

1

Technology vs. Jurisprudence

- auto, Uber 
- telephone 
- facsimile 
- computer 
- e-mail @
- Google, Facebook 
- drones 
- genomic and reproductive issues
- Dolly 1996 

Louise Brown (1978) 

Technology vs. Jurisprudence: Dentistry

- cone beam radiography (CBCT)
- implants
- sleep apnea
- botox
- electronic medical records
- teledentistry
- salivary diagnostics and genomics
- covid testing

3

Diagnostics and Genomics

theranos

23andMe

Salivary Diagnostics

GUEST EDITORIAL

Revising the scope of practice for oral health professionals: Enter genomics

Harold C. Slavkin

JADA March 2014 145(3): 228-230

5

Key excerpts from that article:

- "With relatively inexpensive, fast and highly accurate technology, whole-genome sequencing reveals the entire gene content for an individual patient within hours."
- "As these tools become available, are we, as oral health professionals gaining competency to include these new innovations in our diagnostic and prognostic toolbox?"
- "If our scope of practice is expanded, are we prepared to engage in genomics to identify patients at risk as an integral part of the inter-professional health care team?"

6

7

Scope of Practice

Q. Does salivary diagnostics and genomics even fall within our legally permitted duties as dentists?

8

Definition of Dentistry, NY (§ 6601 Education Law)

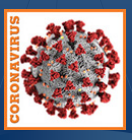
The practice of the profession of dentistry is defined as diagnosing, treating, operating, or prescribing for any disease, pain, injury, deformity, or physical condition of the oral and maxillofacial area related to restoring and maintaining dental health.

The practice of dentistry may include performing physical evaluations in conjunction with the provision of dental treatment.

9

ADANews

Licensed dentists are eligible to administer COVID-19 diagnostic tests within their scope of practice, provided they obtain (or already have) a Certificate of Waiver from the Centers for Medicare & Medicaid Services



10

11

Background Information:

- Definition of the Standard of Care
- Elements of Malpractice

12

Q. Is taking a saliva sample for diagnostic purposes the "standard of care?"

If it is not, when will it be?

13

Standard of Care

The level at which the average, prudent provider in a given community would practice. It is how a similarly qualified practitioner would have managed the patient's care under the same or similar circumstances.

14

Standard of Care

The standard of care is not determined by any law, textbook, journal, speaker, professor, or dental society. It is determined during a malpractice trial by the triers of fact—the judge and jury. It often comes down to a battle of qualified experts.

15

ADA Clinical Practice Guidelines

1.1 . . . Evidence-based clinical practice guidelines are intended to provide guidance and should be integrated with a practitioner's professional judgment and a patient's needs and preferences. **They are not standards of care, requirements, or regulations.** They represent the best judgment of a team of experienced clinicians, researchers and methodologists interpreting the scientific evidence on a particular topic.

16

AAO's Clinical Practice Guidelines

Clinical Practice Guidelines for Orthodontics and Dentofacial Orthopedics

American Association of Orthodontists
My Life. My Smile. My Orthodontist.®

17

AAO on the Standard of Care:

The AAO recognizes that these guidelines may be used by insurance carriers and other payers, **attorneys in malpractice litigation**, and various entities with an interest in orthodontics. The Association encourages all interested persons to become familiar with the Guidelines. **This document was not developed to establish standards of care** or to be used for reimbursement or litigation purposes. The AAO cautions that these uses involve considerations that are beyond the scope of the Guidelines.

Standard of Care

If we don't help establish the standard of care, the lawyers will do it for us.

The New York Times

Europe Moves Ahead on Internet Rules

By the Editorial Board of the New York Times

On Thursday, the European Parliament voted for rules that would restrict Internet service providers from blocking or slowing down services like Skype and Netflix on their networks.

20

The New York Times

Drone Registration Rules Are Announced by F.A.A.

By CECILIA KANG

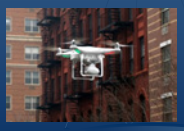
WASHINGTON — The Federal Aviation Administration on Monday announced new rules that will require nearly all owners of remote-controlled recreational drones to register the machines in a national database, an attempt by the agency to address safety fears.

21

The New York Times

N.Y. / REGION

Not Part of Video's Script: An Arrest for Flying a Drone



22

Your Cells. Their Research. Your Permission?

NY Times

The United States government recently proposed sweeping revisions to the Federal Policy for Protection of Human Subjects, or the Common Rule, which governs research on humans, tissues and genetic material. These changes will determine the content of consent forms for clinical trials, if and how your medical and genetic information can be used, how your privacy will be protected, and more.

23

The Cost of Care vs the Standard of Care

AJODO LITIGATION AND LEGISLATION
Volume 144, Issue 6 L. Jerrold

The Cost of Care vs the Standard of Care

When does the cost of care impact the standard of care?

24

Standard of Care as it relates to malpractice

The dental malpractice plaintiff must establish the appropriate standard of care and demonstrate that the standard of care has been breached.

25

Proving a Malpractice Case

In order to demonstrate a breach of the standard of care the plaintiff must prove these four essential elements:

- Duty (doctor/patient relationship)
- Breach
- Causation
- Damages

26

Malpractice Policy Considerations

- Does your policy cover salivary diagnostics and genetic testing?
- Do you need a rider?
- Get it in writing from your carrier!

27

Questions we will explore:

- When should you utilize new technology?
- Is there any disclaimer that can reduce your liability?
- What type of informed consent is appropriate?
- Can you ignore emerging technology?

28

Implementing Technology in Your Office

When should you implement new technology?

When will implementing any new technology become the standard of care?

29

Answer:

- When the average, prudent dentist in a similar circumstance would utilize that type of technology.
- When the benefits outweigh the risks.
- When there is a favorable cost/benefit ratio.

30

Example: Utilizing Salivary Diagnostics in Your Office

- Is salivary diagnostics the "standard of care?"
- Should you read your own test?
- Is having a geneticist read a results the standard of care?

31

- Would the average, prudent dentist utilize salivary diagnostics?
- Would the average, prudent dentist have a genetics lab interpret a genomics test?
- Would an average, prudent dentist have sent the sample to a genomics lab under the same or similar circumstances?

32

Who Is Reading Your Results?

- Are the people reading your sample board certified?
- Are they licensed in your state?
- Are they even licensed?
- Will they indemnify you?
- Have they maintained the necessary malpractice insurance?
- How do you know?

33

Should you do testing for outside dentists?

It may help justify the cost of the testing machine; it may even get you some referrals, but . . .

34

Should you take samples for outside dentists?

- There is potential liability that comes with serving as a testing center.
- You may not be covered by your malpractice policy. You need a separate errors and omissions policy.
- You may run afoul of "Stark" laws.

35

Is there any disclaimer that can reduce your liability?

- Professionals cannot "disclaim" their way out of the standard of care.
- Courts have not recognized disclaimers as an effective shield against an allegation of malpractice.

36

What type of Informed Consent is appropriate when you utilize new technology?

Consent is appropriate when a reasonably prudent person in the patient's position would have undergone and accepted the procedure if he/she had been fully informed of the risks, benefits, and costs.

37

Informed Refusal

- Patients must be informed of what might happen if they do *not* follow your advice
- Document this as you would informed consent

38

Informed Consent

- Diagnostic concerns
- Treatment concerns

39

Informed Consent:

- Are you informing the patient of all of the information the test provides?
- Are we, as dentists, even obligated to inform the patient of all the information the test provides?

40

Informed Consent: Diagnostic Concerns

- Are you offering the patient the option to have the test read by a geneticist?
- Are you reading the results yourself?
- Are you sure you aren't missing any pathology?
- Are you attempting to "disclaim" responsibility for reading a test?

41

Pathology analogy

When you do a biopsy of a suspicious lesion, do you diagnose the tissue yourself or do you send it to a pathologist?

42

CBCT Analogy: AAO Insurance's position on CBCT's

"CBCT scans can show information beyond that which we, as dentists, are trained to interpret. However, legally you may be presumed to know all that is shown. Involving a radiologist relative to the reading of CBCT scans is therefore advisable."

43

Oral and Maxillofacial Radiology
Executive Position Paper

- "Standard of Care: Dentists using CBCT should be held to the same standards as board certified radiologists."
- "There may be a misconception on the part of some practitioners that the user has no responsibility for radiologic findings beyond those needed for a specific task (e.g., implant treatment planning). This assumption is erroneous."

44

Informed Consent: Treatment Concerns

- Once you pick up an anomaly, are you presenting all treatment options?
- Are you documenting all of your findings and suggestions?
- Are you providing Informed Refusal?

45

HIPAA issues

- File transfer protocol for e-mailing patient-related data
- Are you using a secure transmission?
- HIPAA (Health Insurance Portability and Accountability Act
- HITECH (Health Information Technology for Economic and Clinical Health)

46

HIPAA

- AOL, Yahoo, Dropbox: not HIPAA compliant
- Google is if you have a paid account and sign a Business Associate Agreement
- Box can be if you have a BAA

47

Electronic Medical Records Issue

- Do you have a way to encrypt and share your files with other health care providers?
  - FTP (file transfer protocol)
  - DICOM: (digital imaging and communication in medicine) is the ADA standard
  - EMHR

48

Is your software compliant?

Dear Dr. _____ :

This is our notification that [Software Name] is in compliance with the HIPAA Security Rule, HIPAA privacy rule, and HITECH with regard to the functions our systems performs for electronic Patient Health Information (ePHI).

49

Business Associate Agreement

- Mandatory under HITECH
- Who: persons and entities that perform or assist providers in any activity of function that involves the use of protected health information
- Anyone who receives or handles protected health information (eg: lab, software vendor, biller, insurance coder)

50

Conclusions:

- Salivary diagnostics and genomics is a new technology that has outpaced the ability of the law to guide us.
- Some of us will be the ones who make new law.
- The "reasonable doctor" standard is the appropriate analysis.

51

Conclusions:

- Salivary samples should be read by someone "qualified" to interpret them.
- If you feel qualified, that could be you.
- If you have any doubt, send the scans to a recognized laboratory, just like you would a pathology sample.

52

Conclusions:

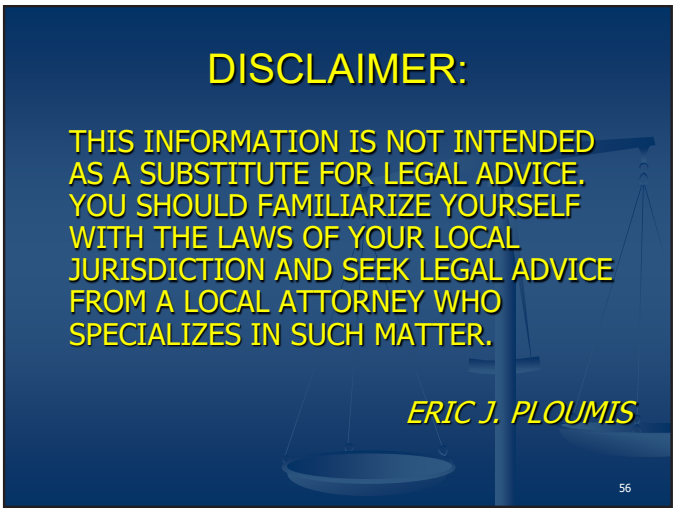
- You don't need to know how to interpret the entire sample, but . . .
- You do need to know how to recognize something unusual.

53

Conclusions:

- You have a duty to refer if you don't understand something on the lab report.
- You have a duty to inform the patient of what might happen if they don't seek an outside opinion.
- Exercise caution and stay within the boundaries of our profession.

54


DISCLAIMER:
THIS INFORMATION IS NOT INTENDED AS A SUBSTITUTE FOR LEGAL ADVICE. YOU SHOULD FAMILIARIZE YOURSELF WITH THE LAWS OF YOUR LOCAL JURISDICTION AND SEEK LEGAL ADVICE FROM A LOCAL ATTORNEY WHO SPECIALIZES IN SUCH MATTER.
ERIC J. PLOUMIS
56

SELF EVALUATION

Salivary Diagnostics and Genomics: Legal and Ethical Considerations

1. T/F - Technology often outpaces the ability of the law to regulate it.

2. T/F - The “Standard of Care” requires the highest level of care possible in a given situation.

3. T/F - The “Standard of Care” is established by the Clinical Practice Handbook of the American Dental Association.

4. Technology, such as salivary diagnostics, will become the standard of care when:

a. The average, prudent dentist would utilize it.
b. The benefits outweigh the risks.
c. There is a favorable cost/benefit ratio
d. All of the above

5. T/F - Once a piece of technology receives FDA approval, utilizing the product becomes the standard of care.

Answer Key: 1. T, 2. F, 3. F, 4. D, 5. F

FACULTY

John F. Dombrowski, MD

John F. Dombrowski, MD, of Washington, DC, is a practicing anesthesiologist with a special interest in pain and addiction. He received his anesthesiology training at Yale University in 1993 and is board certified in both anesthesiology, pain medicine and addiction medicine. Dr. Dombrowski is principal of The Washington Pain Center and medical director of several Medication Assistant treatment programs. Dr. Dombrowski is the past secretary to the American Society of Anesthesiology and the current president of the DC and Maryland Society of Addiction Medicine. He is a frequent speaker and commentator on pain management and addiction treatments.

You may contact Dr. Dombrowski with your questions or comments at (202) 362-4787, or by email at drjohn@dcpaindoc.com.

John F. Dombrowski, MD, PC

Board certified in Anesthesiology and Pain Medicine
A Specialist in Pain Medicine
Thewashingtonpaincenter.com

3301 New Mexico Avenue NW
Washington, DC 20016

Telephone: 202-362-4787
Email: Drjohn@dcpaindoc.com

Managing Pain While Preventing Addiction

DISCLOSURES

- CEO Washington Pain Center
- ASA Secretary-Past/ Current President DC –MD Society of Addiction Medicine
- Medical Director of outpatient treatment centers
- Medical consultant to Biocorxx

GOALS

- Correctly identifying patients for risk factors for substance use disorder.
- Properly writing and documenting opiate management therapy for either acute or chronic pain settings.
- Red flag warnings where the patient should be counseled and seek other treatment.
- Referring the patient to a higher level of care treatment options.

REASON FOR OPIOIDS

- An unpleasant sensory and emotional experience associated with actual or potential tissue damage or described in such terms
  International Association of the Study of Pain

ACUTE PAIN

- Surgery
- Injury
- Acute inflammation of chronic disease

BARRIERS TO EFFECTIVE PAIN MANAGEMENT

- Reluctance to report pain.
- Many patient silently tolerate unrelieved pain due to a cultural or societal reason.
- Reluctance to take pain medications.
- Lack of adequate education regarding the availability of pain relief remedies medication or otherwise

Agency for health care policy and research publication number 94-0592.
American pain Society. Principles of analgesic use in the treatment of acute pain and cancer pain fourth edition Greenview, IL: American pain Society; 1999.

MANAGEMENT OF PAIN

- 3.5-6,000,000 cancer pain sufferers needlessly (World Health Organization)
- 23 million surgical patient suffer with chronic pain (American Hospital Association)
- 53 million injured pain sufferers - Newton
- 50-70% of primary care visits have an underlying pain complaint
- Physicians will tell patients to learn to live with their pain and accepted in normal.
- 1000 patient's weekly wanted Dr. Kevorkian's help/the right to die movement

MANAGEMENT OF PAIN - FACTS

- 30% of the US population has either acute or chronic pain 4% of these patients are elderly and a good majority are disabled.
- Opiates are the most commonly prescribed class of medication in the United States.
- In 2014 260 million opiate prescriptions are written
- 65% of these medications for less than three weeks only 4% were for chronic opiate analgesic treatment(COAT)

ACUTE PAIN

- This is protective,
- It is usually time-limited
- It is a sign or symptom not the problem
- Aggressive treatment of acute pain can prevent establishment of chronic pain

"Acute pain is a type of pain that typically lasts less than 3 to 6 months, or pain that is directly related to soft tissue damage such as a sprained ankle or a paper cut. ... Acute pain is distinct from chronic pain and is relatively more sharp and severe."

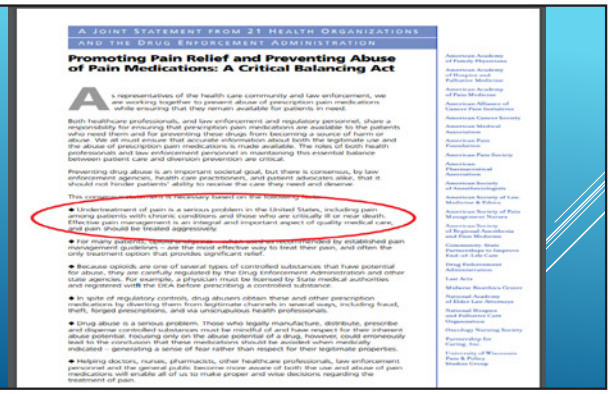
ACUTE PAIN TREATMENT

Reasons for treatment

- Limit suffering
- Preserve hope
- Prevent debilitation
- Improve treatment compliance
- Prevent loss of work pleasure role in the family or society

INADEQUATE PAIN RELIEF AND THE CONSEQUENCES.

- Physical
  - -Increase pulsed, increase blood pressure, increase respirations
  - -decreased activity decreased mobility decreased actives a daily living
  - -decreased oxygen to tissues
  - -decreased recovery due to limited ambulation.
- Psychological
  - -anorexia, fatigue, sleep disorders, anxiety, depression
- Social economic
  - - decreased productivity due to lost days at work increase cost to the medical system.



A Joint Statement from 21 Health Organizations and the Drug Enforcement Administration

Promoting Pain Relief and Preventing Abuse of Pain Medications: A Critical Balancing Act

As representatives of the health care community and law enforcement, we are working together to prevent abuse of prescription pain medications while ensuring that they remain available for patients in need.

Both healthcare professionals, and law enforcement and regulatory personnel, share a responsibility for ensuring that prescription pain medications are available to the patients who need them and for preventing these drugs from becoming a source of harm or abuse. We all must ensure that accurate information about both the legitimate use and the abuse of prescription pain medications is made available. The roles of both health professionals and law enforcement personnel in maintaining this essential balance between patient care and diversion prevention are critical.

Preventing drug abuse is an important societal goal, but there is consensus, by law enforcement agencies, health care practitioners, and patient advocates alike, that it should not hinder patients' ability to receive the care they need and deserve.

This consensus statement is necessary based on the following facts:

- Undertreatment of pain is a serious problem in the United States, including pain among patients with chronic conditions and those who are critically ill or near death. Effective pain management is an integral and important aspect of quality medical care, and pain should be treated aggressively.
- For many patients, opioid medications, when prescribed and administered by established pain management guidelines – are the most effective way to treat their pain, and often the only treatment option that provides significant relief.
- Because opioids are one of several types of controlled substances that have potential for abuse, they are carefully regulated by the Drug Enforcement Administration and other state agencies. For example, a physician must be licensed by State medical authorities and registered with the DEA before prescribing a controlled substance.
- In spite of regulatory controls, drug abusers obtain these and other prescription medications by diverting them from legitimate channels in several ways, including fraud, theft, forged prescriptions, and via unscrupulous health professionals.
- Drug abuse is a serious problem. Those who legally manufacture, distribute, prescribe and dispense controlled substances must be mindful of and have respect for their inherent abuse potential. Focusing only on the abuse potential of a drug, however, could erroneously lead to the conclusion that these medications should be avoided when medically indicated – generating a sense of fear rather than respect for their legitimate properties.
- Helping doctors, nurses, pharmacists, other healthcare professionals, law enforcement personnel, and the general public become more aware of both the use and abuse of pain medications will enable all of us to make proper and wise decisions regarding the treatment of pain.

HEALTH

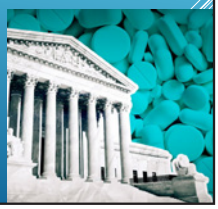
Fight over opioid prescribing — and when it turns criminal — heads to Supreme Court Stat News

Andrew Joseph

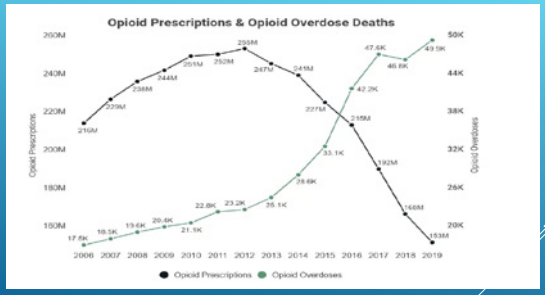
By Andrew Joseph Feb. 11, 2022

Doctors have wide latitude to prescribe drugs, including potentially dangerous ones, but even they face limits. The question is, what threshold do physicians have to cross — and what sort of intent do they need to have — for their prescribing to be considered a crime?

It's an issue headed to the Supreme Court next month, in a case concerning two physicians who were convicted of unlawfully dispensing opioid painkillers.



ADDICTION IN AMERICA



https://drugabusestatistics.org/prescription-drug-abuse-statistics/

All of these matters discussed fall on YOU

- Everyone is at risk.
- *Must the document* and appropriate history and physical exam.
- Must document risk assessment tool.
- Must actively engage patient with respect to medication risk and benefit.
- Must consider other therapies outside of narcotic management.

MORE THAN JUST PAIN MEDICINES

- 3.3 million people were currently misusing opiate medications.
- 2 million people were misusing tranquilizers.
- 1.7 million people were misusing stimulants.
- 497,000 people were misusing sedative hypnotics.
- In total 6 million Americans are misusing prescription-based medications all of which **are more than the total number of people abusing cocaine, heroin, hallucinogens, inhalation drugs**.

Drug enforcement agency. Practitioners manual: section 2. 2015; HTTP://www.thatDEAdiversion.USDOJ.gov/P UBS/manuals/practice/section 2. H TM. June 13, 2015

PATIENT WITH THESE RISK FACTORS TEND TO BE AT HIGHER RISK

- Exaggerated pain/hysteria/catastrophizing
- Young age
- Personal history/family history of abuse medications-physical
- Poor social support
- Multifactorial biopsychosocial

Weber LR, predicting a Baird behaviors in opiate treatment patients; preliminary validation of the opiate risk tool. Pain medicine. 2005; 6(6): 432 – 442

PATIENTS AT RISK OF OVERDOSE

- Middle-age
- Polypharmacy-opiates-antidepressants-benzodiazepines
- Unemployment
- High opiate use
- Recent release from Prison

Weber LR, predicting a Baird behaviors in opiate treatment patients; preliminary validation of the opiate risk tool. Pain medicine. 2005; 6(6): 432 – 442

OTHER RISKY BEHAVIOR

- 39% of patients increase their dose without direction from a HCP.
- 26% engage in purposeful over sedation.
- 20% drank alcohol concurrent with opiate use.
- 18% used opiates - other than relieving pain.
- 18% obtained extra opiate medications from other physicians.

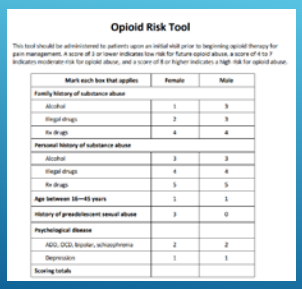
Fleming space MF substance use disorders in a primary care sample receiving daily opiate therapy. Journal pain. 2007; 8 (seven): 537-582.

CHARTING STAYS OUT OF TROUBLE

- Establish and measure goals for improved pain and function.
- Discuss benefits, risks, and availability of nonopioid therapies with patient.
- Assess pain intensity, functional impairment, and quality of life.

https://www.cdc.gov/opioids/healthcare-admins/pdf/quality-improvement-care-coordination-508.pdf

RISK ASSESSMENT TOOL



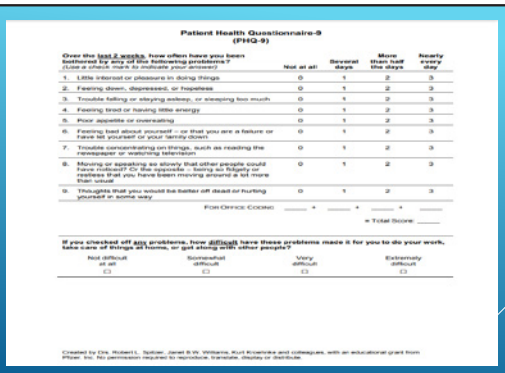
Opioid Risk Tool

This tool should be administered to patients upon an initial visit prior to beginning opioid therapy for pain management. A score of 3 or lower indicates low risk for future opioid abuse, a score of 4 to 7 indicates moderate risk for opioid abuse, and a score of 8 or higher indicates a high risk for opioid abuse.

Mark each box that applies	Female	Male
Family history of substance abuse		
Alcohol	1	3
Illegal drugs	2	3
Rx drugs	4	4
Personal history of substance abuse		
Alcohol	3	3
Illegal drugs	4	4
Rx drugs	5	5
Age between 16—45 years	1	1
History of preadolescent sexual abuse	3	0
Psychological disease		
ADD, OCD, Bipolar, schizophrenia	2	2
Depression	1	1
Scoring totals		

MORE ASSESSMENTS

- The Patient Health Questionnaire (PHQ) is a self-report version of the Primary Care Evaluation of Mental Disorders (PRIME-MD) diagnostic tool for common mental disorders. The PHQ-9 is a brief, 9-item scale that includes only the depression-related items from the PHQ. The PHQ-9 has been validated for use in primary care settings and can be used to make a tentative diagnosis of depression and to monitor depression severity and response to treatment in the past 2 weeks.



Patient Health Questionnaire-9 (PHQ-9)

Over the last 2 weeks, how often have you been bothered by any of the following problems? (Use a check mark to indicate your answer)

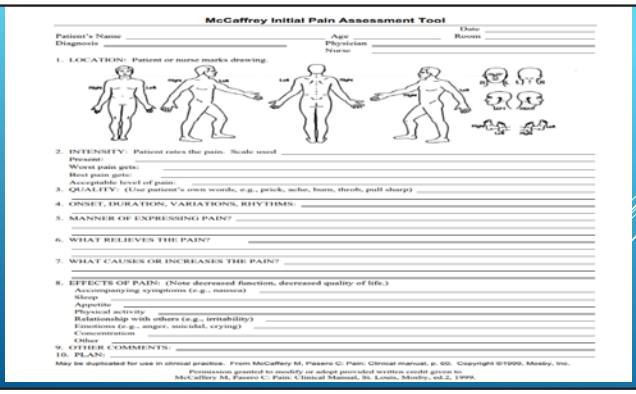
	Not at all	Several days	More than half the days	Nearly every day
1. Little interest or pleasure in doing things	0	1	2	3
2. Feeling down, depressed, or hopeless	0	1	2	3
3. Trouble falling or staying asleep, or sleeping too much	0	1	2	3
4. Feeling tired or having little energy	0	1	2	3
5. Poor appetite or overeating	0	1	2	3
6. Feeling bad about yourself – or that you are a failure or have let yourself or your family down	0	1	2	3
7. Trouble concentrating on things, such as reading the newspaper or watching television	0	1	2	3
8. Moving or speaking so slowly that other people could have noticed? Or the opposite – being so fidgety or restless that you have been moving around a lot more than usual	0	1	2	3
9. Thoughts that you would be better off dead or hurting yourself in some way	0	1	2	3
For Office Coding	____ +	____ +	____ +	____
			= Total Score: ____	

If you checked off any problems, how difficult have these problems made it for you to do your work, take care of things at home, or get along with other people?

Not difficult at all	Somewhat difficult	Very difficult	Extremely difficult
☐	☐	☐	☐

Created by Drs. Robert L. Spitzer, Janet B.W. Williams, Kurt Kroenke and colleagues, with an educational grant from Pfizer Inc. No permission required to reproduce, translate, display or distribute.

FORM FOR DOCUMENTATION OF PAIN ACUTE AND CHRONIC



McCaffrey Initial Pain Assessment Tool

Patient's Name _____ Age _____ Date _____
Diagnosis _____ Physician _____ Room _____
Nurse _____

1. LOCATION: Patient or nurse marks drawing.

2. INTENSITY: Patient rates the pain. Scale used _____
Present: _____
Worst pain gets: _____
Best pain gets: _____
Acceptable level of pain: _____

3. QUALITY: (Use patient's own words, e.g., prick, ache, burn, throb, pull sharp) _____

4. ONSET, DURATION, VARIATIONS, RHYTHM: _____

5. MANNER OF EXPRESSING PAIN? _____

6. WHAT RELIEVES THE PAIN? _____

7. WHAT CAUSES OR INCREASES THE PAIN? _____

8. EFFECTS OF PAIN: (Note decreased function, decreased quality of life.)
Accompanying symptoms (e.g., nausea) _____
Sleep _____
Appetite _____
Physical activity _____
Relationship with others (e.g., irritability) _____
Emotions (e.g., anger, suicidal, crying) _____
Concentration _____
Other _____

9. OTHER COMMENTS: _____

10. PLAN: _____

May be duplicated for use in clinical practice. From McCaffery M, Pasero C: Pain: Clinical manual, p. 60. Copyright ©1999, Mosby, Inc.
Permission granted to modify or adapt provided written credit given to McCaffery M, Pasero C. Pain: Clinical Manual, St. Louis, Mosby, ed.2, 1999.

HISTORY AND PHYSICAL EXAM

- **Pain Evaluation Questions**
- **Character** - A description of how the pain feels (dull, pinching, pounding, sharp, shooting, throbbing, pounding, stinging, burning).
- **Radiation** - Does the pain move anywhere?
- **Site** - Where is the pain? Where does it hurt?
- **Onset** - When did the pain start?
- **Progression** - Has the pain gotten worse or better since it started?
- **Duration** - For how long have you had the pain? Is it episodic?
- **Severity** - What is the pain severity (1 to 10)?
- **Aggravating factors** - Does anything make it worse, such as movement or a position?
- **Relieving factors** - Does anything you do or not do make the pain better? What treatments have you tried?
- **Associative factors** - Other relevant questions from a review of systems based on the patient complaint.

- Use immediate-release opioids when starting.
- Start low and go slow.
- When opioids are needed for acute pain, prescribe no more than needed.
- Do not prescribe ER/LA opioids for acute pain.
- Follow-up and re-evaluate risk of harm; reduce dose or taper if needed.

https://www.cdc.gov/opioids/healthcare-admins/pdf/quality-improvement-care-coordination-508.pdf

- Check PDMP for high dosages and prescriptions from other providers.
- Use urine drug testing to identify prescribed substances and undisclosed use.
- Avoid concurrent benzodiazepine and opioid prescribing.
- Arrange treatment for OUD if needed.

https://www.cdc.gov/opioids/healthcare-admins/pdf/quality-improvement-care-coordination-508.pdf

USE OF OPIOIDS ACUTE PAIN 0-6 WEEKS

- Help the patient set reasonable expectations about recovery
- Reserve opioids for pain from severe injuries or medical conditions, surgical procedures or when alternatives are ineffective. If prescribed, shortest duration and lowest necessary dose
- For minor surgical procedures (eg, impacted wisdom tooth)-prescribe no more than 1-3 days short acting opioid
- Consider tapering off opioids by 6 weeks as acute episode resolved or if CMIF (clinical meaningful improvement of function)hasn't occurred

SUB ACUTE MANAGEMENT 6-12 WEEKS

- Do NOT prescribe opioids if use during acute phase doesn't lead to CMIF
- Screen for depression, anxiety and opioid risk using validated tools
- Avoid prescribing new benzodiazepines and sedative-hypnotics
- Discontinue opioids if there is no CMIF, treatment resulted in severe adverse outcome or patient has a current substance use disorder or a history of opioid use disorder

THE OPIOID PRESCRIPTION SHOULD INCLUDE DOCUMENTED INFORMED CONSENT AND A TREATMENT AGREEMENT ADDRESSING:

- Drug interactions
- Physical dependence
- Side effects
- Tolerance
- Psychologic dependence
- Driving and motor skill impairment
- Limited evidence of long-term benefit
- Addiction, dependence, misuse
- Risk/benefit profile of the drug prescribed
- Signs/symptoms of overdose

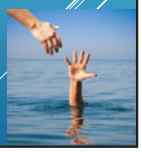
https://www.ncbi.nlm.nih.gov/books/NBK537318/#article-40661.s8

BEHAVIORS SUGGESTING OPIOID DRUG USE DISORDER

- Aggressive demand for more drugs
- Forging prescriptions
- Increased alcohol use and lack of control
- Increasing dose without permission
- Injecting or inhaling drugs prescribed for oral use
- Obtaining drugs from illegitimate sources
- Obtaining opioids from other providers
- Prescription loss
- Refusing to decrease pain medication dosage when stabilized
- Resisting medication change
- Requesting early refills
- Requesting specific medications
- Selling drugs
- Sharing prescriptions
- Stockpiling medications
- Using illegal drugs

HAVING A PLAN TO REFER OUT

- This is no sign of weakness
- Quickly realize that the patient NOT getting better or is becoming problematic
- Obtain a consult with a pain medicine physician, psychiatrist, addiction medicine physician
- You to have an obligation to treat however this obligation cannot be taken advantage of.



JOHN F DOMBROWSKI, M.D. FASA
3301 NEW MEXICO AVE #346 WASHINGTON DC 20016
JFDMDPC@GMAIL.COM 202.345.1784

SELF EVALUATION

Managing Pain While Preventing Addiction

True/False

1. Treating patients in a medical practice with narcotic therapy is highly controversial and the drug enforcement agency has made a statement stating this very fact.

2. The number of prescriptions written, and the number of opiate deaths correlates with one another.

3. In a addition to being concerned about the use of opioids one should also be concerned about misuse of other medication such as sedative hypnotics, stimulants and tranquilizers.

4. A patient presenting with a history of hysteria with respect to their pain, or with bipolar disorder and a poor social network is nonetheless a candidate for opiate management.

5. One way of preventing patients from receiving medications from multiple physicians would be querying the pharmacy database. This should be done before writing any medication for a patient.

6. One opiate risk tool assessment scoring tool would be early consensual sexual relations.

Answer Key: 1. F, 2. F, 3. T, 4. T, 5. T, 6. F