THE
2022-23

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.

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David R. Victor, JD
President

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 2022-23 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, and practice management. And their presentations include topics ranging from managing obstructive apnea, perioperative as well as acute dental pain management, tooth removal decision protocol, and cognitive bias, to human resources issues, cannabis and terpenes, practice valuation, communicating with staff and patients, and practice transition decisions.

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
President

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COURSE OBJECTIVES

After completing ***The 2022-23 Dental Update*** you should have acquired the knowledge that will better enable you to better:

- Assess whether to **retreat a failed root canal, remove and implant or do an apical**
- Identify barriers and solutions to effective **communication with patients and staff**
- Prepare for and manage a **practice transition**.
- Identify the elements of **practice valuation** and the sale vs. hold and scale analysis.
- Identify **human resource issues** impacting the dental practice.
- Understand, evaluate, and treat **obstructive sleep apnea.**
- Understand tools and techniques to **protect assets against practice risk**
- Discuss the legal status, pharmacology, physiological impact and treatment implications of **cannabis.**
- Understand appropriate prescribing practices for **managing acute dental pain**
- Discuss the proper **management of perioperative pain** with local anesthetics
- Understand the characteristics of **street drugs** and their implications for the treatment of patients who abuse them.
- Discuss the treatment implications of the **medically complex patient**.
- Identify and **avoid clinical decision-making pitfalls**

THE 2022-23

Dental UPDATE

FACULTY DISCLOSURES

The individuals listed below constitute everyone with control over the content of ***The 2022-23 Dental Update***. None of them have a financial relationship with a commercial interest whose product or services are discussed in the presentation(s) over which they have control:

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Obstructive Sleep Apnea – Part 1: Patient Evaluation

Jonathan A. Parker, DDS

I. OVERVIEW OF SNORING AND SLEEP APNEA

A. Sleep Problems in Our Society

1. Sleep deprivation
   - 75% of Americans report at least one sleep symptom
   - 60% of adults drove while drowsy during the past year
2. Snoring and sleep apnea
   - Approximately 1/2 to 2/3 of adults snore
   - Research estimates a 20% prevalence of OSA in US
   - OSA is as prevalent as diabetes or asthma
   - BUT only 10-15% of patients with OSA have been diagnosed
3. Normal sleep: 95% of adults need 7-9 hours of sleep at night to function at their best

B. Anatomy and Physiology of Upper Airway

1. Normal
2. In presence of snoring and OSA

C. Terminology

1. Apnea is a decrease in airflow of more than 80% for at least 10 seconds, ending with an arousal from sleep
2. Hypopnea is at least a 30% decrease in airflow with oxygen desaturations greater than or equal to 4% and an arousal from sleep
3. Respiratory Effort Related Arousal (RERA) is an abnormal respiratory event associated with an arousal that does not meet the definition of a hypopnea
4. Apnea-Hypopnea Index (AHI) is the average number of apneas plus hypopneas per hour of sleep
5. Respiratory Disturbance Index (RDI) is the average number of apneas plus hypopneas plus RERAs per hour of sleep
6. Snoring is a partial airway obstruction that reduces airflow but does not cause arousal from sleep
7. Upper Airway Resistance Syndrome (UARS) is exaggerated breathing effort and snoring created by high resistance to airflow in the upper airway. This causes fragmented sleep and significant daytime drowsiness (no evidence of apnea on testing)
8. Obstructive Sleep Apnea Syndrome (OSAS)
   - Stoppage of breathing for 10 seconds or more at least 5 times per hour
   - Oxygen desaturations are more than 4% during apnea events
   - Apnea events end with an arousal from sleep
   - Arousals lead to chronic daytime sleepiness and other symptoms
9. Severity of apnea is defined by:
   - Length of time of apnea event
   - Percentage of oxygen desaturation
   - Apnea-hypopnea index of
   – 5-15 events per hour = Mild OSA
   – 15-30 events per hour = Moderate OSA
   – >30 events per hour = Severe OSA

D. Signs and Symptoms of OSA

1. Restless sleep
2. Snoring with intermittent pauses
3. Excessive daytime sleepiness (EDS)
4. Awakenings due to gasping or choking
5. Fragmented, non-refreshing sleep
6. Poor memory and clouded intellect
7. Personality changes
8. Decreased sex drive
9. Morning headaches

E. Physiologic Effects of OSA

1. Cessation of breathing leads to:
   - Reduced oxygen levels in the blood
   - Increased carbon dioxide levels in the blood
   - Acidosis
2. Sleep fragmentation during apnea leads to:
   - Constant arousals in sleep and excessive daytime sleepiness (EDS)
3. Health consequences of OSA:
   - 45% of patients with OSA have hypertension
   - OSA patients have 5 times greater incidence of heart attack
   - Significant increased risk of cancer, dementia, diabetes, other chronic health problems

F. Predisposing Factors for OSA

1. Increased age
2. Increased weight/obesity
3. Male gender
4. Disproportionate upper airway anatomy
5. Alcohol or sedative hypnotics

II. PATIENT EVALUATION

A. Screening Evaluation

1. Create screening questions for snoring
   - "Have you been or are you aware that you tend to snore"
   - "Has anyone told you that they heard you stop breathing during sleep?"
   - "Do you feel like you get sleepy during the daytime?"
2. Who should be screened for snoring and OSA?—Patients with:
   - Snoring
   - Witnessed stoppages in breathing
   - Cardiovascular disease or hypertension
   - BMI > 35
   - Larger neck size (Men > 17 in.; Women > 16 in.)
   - Bruxism
   - Periodontal disease
3. STOP-Bang and Epworth Sleep Scale questionnaires

B. Comprehensive Evaluation: Patient Questionnaires

1. General questionnaire for sleep disordered breathing
2. Epworth sleepiness scale
3. STOP-Bang
4. Patient medical/health history
5. Sleep partner questionnaire

C. Comprehensive Evaluation: History of Current Symptoms

1. Snoring
   - Frequency
   - Effect on sleep of others
2. Daytime drowsiness
   - Refreshed/unrefreshed upon waking
   - Effect on daily activities
   - Cognitive impairment
   - Near-misses while driving
3. Quality of sleep
   - Number of times awakened during night
   - Wake gasping and choking
   - Witnessed apneas
4. Usual sleep position
   - Snoring in all positions or only on back
5. Hours of sleep per night
6. Change in weight
7. Nasal congestion
8. History of previous sleep disorders evaluation
   - Previous physician/dentist evaluations
   - Previous sleep studies or other testing
   – < Dates and results
   - History of previous treatment
   – < CPAP, surgery, oral appliances, other treatments
9. Past medical history
   - Review of systems
   - Blood pressure
   - Height and weight

D. Comprehensive Evaluation: Patient Examination

1. Jaw range of motion
   - Maximum opening (40-60 mm)
   - Lateral and protrusive movement ($\geq$ 8 mm)
2. Dental/skeletal relationship
   - Overbite and overjet
   - Angle classification
   - Position of dental midlines
   - Wear facets
3. Occlusal contact
4. Periodontal condition
   - Gingival recession and/or pocketing

- Tooth mobility
- Interproximal contacts

5. Intraoral soft and hard tissue pathology
6. TMJ evaluation
   - Palpation of TMJ capsules
   - Auscultation (stethoscope)
7. Muscles of mastication
   - Palpation of the masseters and temporalis (at a minimum)
8. Oropharyngeal tissues
   - Size of tongue
   - Length of soft palate
   - Size of uvula
   - Crowding of palatopharyngeal area
9. Neck size

E. Dental-Oropharyngeal Imaging

1. Panoramic x-rays
2. Cephalometric x-rays
3. Cone Beam CT scans
4. Other imaging options

F. Home Sleep Apnea Testing

1. Type 4: Pulse oximetry
2. Type 2 & Type 3 sleep testing
3. Watch_PAT sleep test
4. Indications in clinical practice

SELF EVALUATION

Obstructive Sleep Apnea – Part 1: Patient Evaluation

1. Common symptoms of Obstructive Sleep Apnea Syndrome include all of following EXCEPT:

a. Daytime sleepiness
b. Nightmares
c. Loud snoring with intermittent pauses in breathing
d. Fragmented, non-refreshing sleep

2. Obstructive sleep apnea can lead to increased risk of health problems such as:

a. Hypertension or heart disease
b. Cognitive decline/dementia
c. Metabolic dysfunction and diabetes
d. all of the above

3. T/F - The American Dental Association has adopted a policy that states that dentists are encouraged to screen patients for sleep-related breathing disorders (SRBD) as part of a comprehensive medical/dental history. After the screening evaluation, if a risk for SRBD is identified then the patient should be referred to the appropriate physicians for proper diagnosis.

4. The STOP-Bang questionnaire is used in the sleep-related breathing disorder screening process to:

a. Assess potential risk for obstructive sleep apnea
b. Get information on the patient's quality of sleep
c. Identify the loudness of a person's snoring
d. Confirm the patient's most common sleep positions

5. The Apnea-Hypopnea Index (AHI) is currently used to identify the severity of obstructive sleep apnea (OSA) in patients. An AHI of 20 events/hour is consistent with a diagnosis of:

a. Primary snoring
b. Mild OSA
c. Moderate OSA
d. Severe OSA

6. A comprehensive evaluation for a snoring/OSA patient in the dental practice includes:

a. A complete history of patient's sleep problems including their signs and symptoms
b. Intraoral soft and hard tissue examination
c. Assessment of TMJs and muscles of mastication
d. All of the above

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

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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, the most 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

Cannabis and Terpenes Parts 1 & 2

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

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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.

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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.

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Current Legal Status

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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.

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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

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Controlled Substances

- Schedule II
  - High potential for abuse
  - High potential for physical and psychological dependence
  - Accepted medical indication (strong restrictions)
  - Types
    - Morphine
    - Oxycodone, hydrocodone
    - Cocaine

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Controlled Substances

- Schedule III
  - Some potential for abuse
  - Moderate to low risk of physical dependence
  - High risk of psychological dependence
  - Accepted medical indication (some restrictions)
  - Types
    - Codeine
    - Anabolic steroids

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Controlled Substances

- Schedule IV
  - Low potential for abuse
  - Low risk of physical and psychological dependence
  - Accepted medical indication (some restrictions)
  - Types
    - Valium (diazepam)
    - Xanax (alprazolam)

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Controlled Substances

- Schedule V
  - Low potential for abuse
  - Limited risk of physical and psychological dependence when used inappropriately
  - Accepted medical indication (few restrictions and available OTC in some states)
  - Types
    - Robitussin with codeine
    - Lyrica (pregabalin)

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Access to Cannabis

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Access to Cannabis

- Access Varies By State
  - Medical Use
    - Persons meeting the minimum age requirement may use medical marijuana for the treatment of only those qualifying conditions established by legislation
  - Recreational Use
    - Persons meeting the minimum age requirement may use cannabis for recreational purposes.

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Access to Cannabis

- Access Varies By State
  - Decriminalized
    - Persons meeting the minimum age requirement can possess a certain amount of cannabis as established by legislation.
  - Public Consumption
    - The ability to consume cannabis in public.
  - Home Cultivation
    - The ability to grow cannabis for personal use.

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Medical Marijuana Programs

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Medical Marijuana Programs

- Medical Use Legislation Varies By State
  - Standardization
  - Quality Control
  - Labeling
  - Zoning and Location of Dispensaries
  - Qualifying Conditions

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Medicial Marijuana Programs

- Most Common Qualifying Conditions
  - ALS
  - Alzheimer's disease
  - Arthritis
  - Cachexia
  - Cancer
  - Crohn's disease
  - Irritable Bowel Syndrome (IBS)
  - Epilepsy/seizures
  - Glaucoma
  - Hepatitis C

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Medicial Marijuana Programs

- Most Common Qualifying Conditions
  - HIV/AIDS
  - Nausea
  - Neuropathies
  - Pain
  - Parkinson's disease
  - Persistent muscle spasms (including MS)
  - PTSD
  - Sickle cell disease
  - Terminal illness

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Medicial Marijuana Programs

- Most Common Qualifying Conditions
  - 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.

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Is There Any Evidence of Cannabis Therapeutic Efficacy?

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"*The Health Effects of Cannabis and Cannabinoids*"
- National Academy of Sciences, 2017

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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.

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Is There Any Evidence of Efficacy?

- Substantial or Conclusive Evidence:
  - Cachexia
  - Chronic pain
  - Chemotherapy-induced nausea and vomiting
  - Multiple sclerosis related spasticity
  - Neuropathy

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Is There Any Evidence of Efficacy?

- Moderate Evidence:
  - Short term sleep disturbance
    - Obstructive sleep apnea, etc.
  - Reduction of seizure frequency
    - Dravet syndrome
    - Lennox-Gastaut syndrome
  - Improvement in symptoms of Tourette syndrome

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Is There Any Evidence of Efficacy?

- Limited Evidence:
  - Increasing appetite and decreasing weight loss
  - Anxiety
  - Post-Traumatic Stress Disorder (PTSD)
  - Traumatic brain injury or intracerebral hemorrhage

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Is There Any Evidence of Efficacy?

- Insufficient Evidence or Lack of Efficacy:
  - Dementia
  - Intraocular pressure associated with glaucoma
  - Depression
  - Cancer
  - Irritable Bowel Syndrome
  - Parkinson's Disease

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Proposed Uses in Dentistry (& Medicine)

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Proposed Uses in Dentistry (& Medicine)

- THC
  - Proposed Uses
    - Post-Operative Pain Control
      - Replace NSAIDs
      - Replace Opioids
    - Peri-Operative Anxiety and Pain Control
      - Replace Nitrous Oxide
        - However, high doses of THC may cause anxiety and paranoia

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Proposed Uses in Dentistry (& Medicine)

- CBD
  - Proposed Uses
    - Smoking cessation
    - Treatment of mucositis
    - Treatment of chemotherapy adverse effects
      - Anti-emetic
      - Appetite stimulant

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Types of Cannabis

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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

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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)

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The Anatomy of the Cannabis Plant

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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

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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

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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

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Cannabis Active Compounds

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Cannabinoids

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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)

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Terpenes

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Cannabis Active Compounds

- Terpenoids (terpenes)
  - In addition to cannabinoids, cannabis also contains terpenoids
    - Organic compounds found in plants:
      - Beta-caryophyllene
      - Limonene
      - Linalool
      - Myrcene
      - Pinene

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Terpenes

- Beta-caryophyllene (BCP)
  - Proposed Effects
    - Anti-bacterial
      - Effective against streptococcus mutans
    - Analgesic
      - Current research for treatment of dental pain
  - Also found in black pepper, cloves, hops, oregano

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Terpenes

- Limonene
  - Proposed Effects
    - Anti-anxiety
    - Antifungal
    - Antibacterial
    - Carminative
  - Also found in grapefruit, lemons, oranges

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Terpenes

- Linalool
  - Proposed Effects
    - Anti-anxiety
    - Anti-inflammatory
    - Antibacterial
  - Also found in cinnamon, lavender, jasmine, rosewood

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Terpenes

- Myrcene
  - Proposed Effects
    - Anti-inflammatory
    - Sedative
    - Muscle relaxant
      - Contributes to “couch-lock”
  - Also found in bay leaves, eucalyptus, hops, lemongrass, mango

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Terpenes

- Pinene
  - Proposed Effects
    - Anti-inflammatory
    - Bronchodilation
    - Promotes alertness
  - Also found in pine cones

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Mechanism of Action

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Endocannabinoids

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

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Endocannabinoids

- Mechanism of Action
  - –Cannabis works in the endocannabinoid system
    - Two receptors govern this system
      - CB1 Receptors
        - Primarily found in the CNS
        - Altered perception and mood
        - Disturbed memory function
        - Impaired judgement
        - Slowed cognition
        - Psychosis
        - Loss of time perception
        - Impaired coordination

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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
          - Effects on immunity

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Cannabis Preparations

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Routes of Administration

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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

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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

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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

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Routes of Administration

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

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Routes of Administration

- Vaping
  - 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

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Routes of Administration

- Other Routes of Administration
  - Oral Inhalers
  - Topicals
    - Creams, ointments, balms, lotions, patches
    - Eye drops
  - Suppositories
    - Vaginal, rectal
  - Tampons

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Adverse Reactions

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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 (1/18)

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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 (1/18)

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Cannabis Dental Considerations

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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 (1/18)

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Cannabis Dental Considerations

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

Source: ADA Oral Health Topics, Cannabis: Oral Health Effects (1/18)

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Cannabis Dental/Medical) 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 in smokers, may contribute to these increased risks of cancer

Source: ADA Oral Health Topics, Cannabis: Oral Health Effects (1/18)

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Cannabis Dental/Medical Considerations

- Use of cannabis has been associated with:
  - Increased risk of opportunistic infection
    - –The immunosuppressive effects of cannabis may contribute as well to a higher prevalence of oral candidiasis compared to non-users.
    - –Recent research has suggested that viable microbiota may be transmitted from contaminated cannabis.

Source: ADA Oral Health Topics, Cannabis: Oral Health Effects (1/18)

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Cannabis Dental/Medical 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.
  - Increased heart rate and other cardiorespiratory effects of cannabis make the use of epinephrine potentially life-threatening.

Source: ADA Oral Health Topics, Cannabis: Oral Health Effects (1/18)

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Cannabis Dental/Medical Considerations

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

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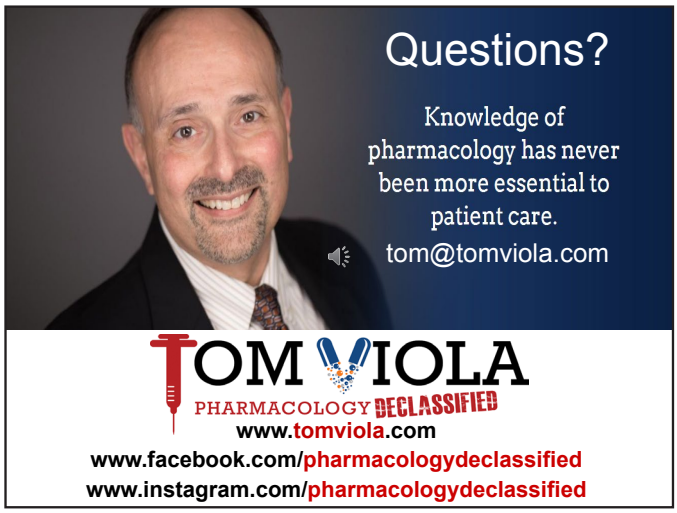

SELF EVALUATION

Cannabis and Terpenes Parts 1 & 2

1. As a result of recent changes in legislation across 33 states, cannabis has now been designated nationwide 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

2. 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

3. T/F - Based on federal law, hemp may contain a THC content of greater than 0.3%

4. Proposed uses of cannabis in dentistry include all of the following except:
   a. Replace NSAIDs for post-operative pain control
   b. Replace opioids for post-operative pain control
   c. Replace nitrous oxide for peri-operative pain control
   d. Replace local anesthetics for peri-operative pain control
   e. Replace nitrous oxide for peri-operative anxiety control

5. T/F - There is substantial or conclusive evidence that cannabis may be useful in managing short-term sleep disturbances.

6. Potential adverse effects of cannabis include which of the following?
   a. tachycardia
   b. mycocardial infarction
   c. stroke
   d. hypertension
   e. all of the above

7. T/F - CB1 receptors are found primarily in CNS.

8. 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

9. Potential adverse effects of cannabis include which of the following?
   a. tachycardia
   b. myocardial infarction
   c. stroke
   d. hypertension
   e. all of the above

10. T/F - CB1 receptors are found primarily in immune system.

11. 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

12. T/F - Trichomes are tiny hair-like projections on the flowers and leaves of the cannabis plant that contain most of the active compounds.

13. Which of the following is not a cannabis extraction?
   a. Budder
   b. Shatter
   c. Bolt
   d. Distillate
   e. Crumble

Answer Key: 1. A, 2. E, 3. F, 4. D, 5. F, 6. E, 7. T, 8. E, 9. E, 10. F, 11. E, 12. T, 13. C

Daniel G. Pompa, DDS

Daniel G. Pompa, DDS, of Roslyn, New York, practiced as an oral and maxillofacial surgeon for over 30 years in New York City and currently heads Advanced Practice Seminars which offers lectures to dental students and practitioners both nationally and internationally. He is a fellow in both The American Association of Oral and Maxillofacial Surgeons and The International Congress of Oral Implantologists. At present Dr. Pompa is a visiting speaker at eight U.S. dental schools and has given over 500 lectures for numerous organizations and societies.

Dr. Pompa was named a "Leader in Continuing Education" by *Dentistry Today* for the last four years in a row and has been published in many journals including the *Journal of the American Dental Association, Dentistry Today* and *New York State Journal of the Academy of General Dentistry*. He is also an inventor, having been issued a U.S. Patent for his contribution in developing a protocol for CT guided surgery used in dental implantology. This patent is cited in over 250 new patents today.

You may contact Dr. Pompa with questions or comments at 516-287-0917, or by email at Pompa@APS4DDS.com.

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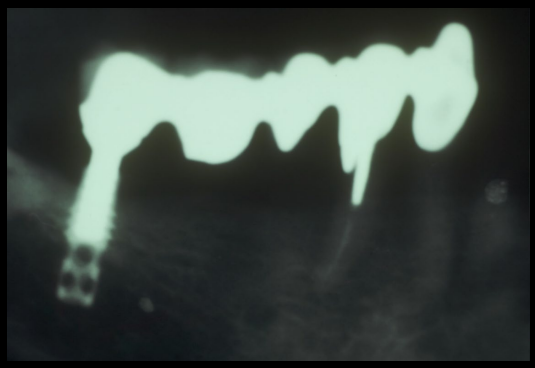
To Pull or Not to Pull: Parts 1-3

It ain't what you don't know that gets you into trouble, It's what you know for sure that just ain't so

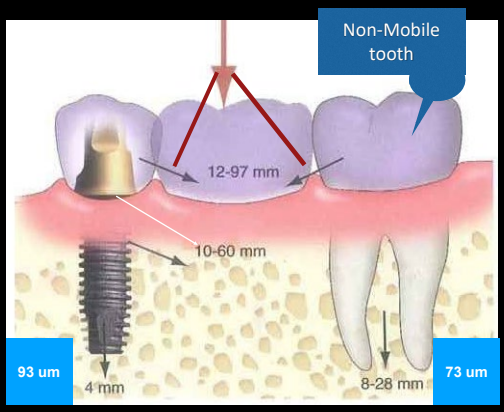
Mark Twain

Original Principles….

- Submerge implant - 2 stage procedure
- Do not load for 6 months
- Countersink at crest of ridge
- Pure Titanium vs. Alloy
- External hex only
- No x-rays for 3 months
- No need for Attached Gingiva
- No Connecting teeth to Implants



36 year follow up



Movement within the Prosthesis:

- The metal in the prosthesis can flex from 12 to 97 um (dependent on the length of the span and the width of the connecting joints)

Movement within the Prosthesis:

- The abutment-to-implant component movement may be up to 60 um because of abutment prosthetic screw flexure
- As a result, a vertical load on the prosthesis creates little bio-mechanical risk when joined to a **non**-mobile tooth or teeth, because of this design.

Treating and retaining teeth with 50% bone loss is not even a challenge

10 mm Rule:
if you have 10 mm - you can place an implant

However: 8 mm implants are stable but so is a tooth with bone loss of 50% that is stable and not progressively loosing bone

Deep probing depth is not a predictor of tooth loss or future bone loss*

* In Treated Cases

New Implant success related to advances in:

- Immediate Placement
- Platform switching
- Grafting (SCTG)
- One Abutment, One Time (AOT)
- Flapless surgical approach
- Orthodontic extrusion
- Socket Shield Technique
- Use of CBCT

Primary Factors for Success:

- Ideal surgical placement of the Implant Fixture
- Timing of the Implant placement after pre-surgical soft and/or hard tissue grafting
- Restorative soft tissue management of the emergence profile (critical and subcritical contours) in a transitional phase to be replicated in the final prosthesis.

Guidelines for removal

- C/R ratio exceeds 1/1
- Class II Mobility not improved with equilibration or splinting

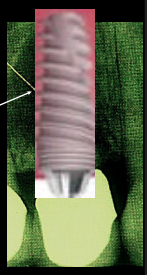
1/.7

Guidelines for removal

- If Crown Lengthening will result in compromised C/R ratio and/or create an esthetic challenge - also if by removing critical alveolar bone (buccal, lingual and interseptal) will result in compromised implant success - then CL is not a preferred (ideal) option

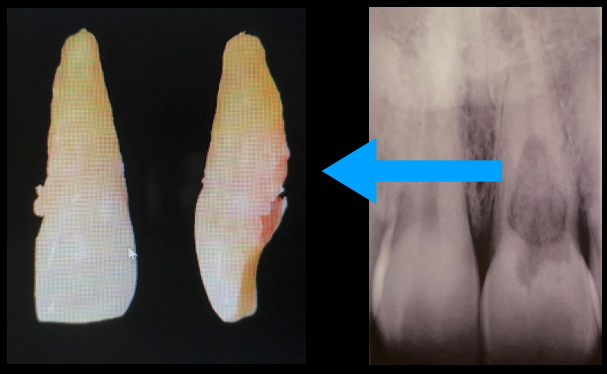
To Pull or Not to Pull
Guidelines for removal

- Existing C/R ratio exceeds 1/1 AND when significant available apical bone is not compromised by anatomical structures
- If the tooth in question is in a position where its removal will result in a better prosthetic C/I ratio vs. the existing C/R ratio



Guidelines for removal

- Internal and/or External Resorption in Maxillary Anterior teeth in patients in 20's with history of injury to area. Watch and wait approach often leads to much more surgical procedures later on.



Guidelines for removal

Low percentage of success for Apical Surgery

- Large Periapical Area that compromises the interceptal bone and interradicular bone
- Greater than 25% marginal bone loss = low percentage of success for Apical Surgery

Guidelines for removal: Bone Loss

When considering Long Term Prognosis

- < 30% predictable
- 30% - 65% caution
- > 65% extraction

A. Galindo-Marino, J of Perio, 2009

Guidelines for removal

- Lack of 1.5 mm of intact tooth structure coronal to the crestal bone - option to use orthodontic extrusion
- 2.5 mm for Biologic Width.

Guidelines: Spear

- Guidelines: Max Anterior - min of 12-13 mm Total Tooth length with 4 mm suprabony (8-9 mm infrabony)
- 1:2 ratio of tooth structure above vs. below the bone level

Guidelines for removal: "1/3 Rule"

- *When existing post is > than 1/3 the tooth length before reconstruction (ideal post should be no longer than the clinical crown)
- *If existing post is > than 1/3 the root diameter

Guidelines for removal: Furcation

- Class I (<3mm) favorable*
- Class II (>3mm not through and through) can be treated* - questionable Long Term
- Class III (>3mm and through and through) has a poor LT Prognosis
- If existing adjacent crestal bone is at or apical to the furcation defect

*Emdogain

Hamp SE, J of Clinical Perio, 2009

Guidelines for removal

- If a tooth is in a strategic position in the arch to stabilize a FPD (e.g. Tripodial or Trapezoidal location around the arch for a long span FPD) specifically when all other abutments are stable and intact Implants.

To Pull or Not to Pull Guidelines for removal

- Heavy Smoker (>10 Cigarette/day X 10 years)
- Heavy Smoker + Perio = poor LT prognosis for maintenance of teeth
- Smokers also have a higher risk of peri-implant bone loss especially if compromised teeth are present

To Pull or Not to Pull
Guidelines for (not) removal

- If Long Term Bisphosphonate use, especially IV form: Zometa and Aredia
- Teeth with 50% bone loss, Class 1 - II mobility under treatment with no deepening pocket depth over time
- Patient able to maintain good to excellent oral hygiene and compliant maintenance

Percentage Statistics

- Implant Success (10 Year) = 97.4% ?
- Tooth now next to an implant - Success (10 Year) = 98.9%
- Abutment now in a FPD adjacent to edentulous space (10 Year) = 89% If the pontic space is now to be used for an implant it will likely need a ridge augmentation vs. an initial socket graft.

Fixed Partial Denture (Three Unit Bridge)

- Caries most common cause of failure
- Failure of abutment teeth @ 8-12% over 10 years and @ 30% over 15 years
- 80% of teeth adjacent to a missing tooth have no or minimal restoration.
- Reduced ability to clean the proximal surfaces of the adjacent teeth

Fixed Partial Denture (Three Unit Bridge) Advantages:

- Can be done quickly
- Usually less cost (initially)
- No surgical intervention

Fixed Partial Denture (Three Unit Bridge) Advantages:

- If patient is medically compromised
- If abutment teeth are both compromised - advantage to have full coverage
- Anatomically high risk location for an implant

Single Tooth Implant

- High success rate (>97.4% at 10 years)?
- Decreased risk of caries of adjacent teeth
- Decreased risk of Endodontic problems and Periodontal breakdown on adjacent teeth
- Improved ability to clean the proximal surfaces of the adjacent teeth-?

Single Tooth Implant

- Improved esthetics of adjacent teeth
- Improved maintenance of bone in the edentulous site
- Decreased cold or contact sensitivity of adjacent teeth
- Psychological advantage
- Decreased abutment tooth loss

Advantages of Implant Supported Prosthesis

- Maintain bone
- Improve phonetics
- Improve occlusion

Advantages of Implant Supported Prosthesis

- Improve oral proprioception
- Increase Prosthesis success
- Improved Masticatory function
- Reduce size of prosthesis

Advantages of Implant Supported Prosthesis

- Increase survival time of prosthesis
- No need to alter adjacent teeth

Disadvantages of Implant Supported Prosthesis

- Time: 1-3 Surgical intervention's
- May involve multiple provisionals
- Cost is usually higher (initially)
- Experience of both the Surgeon and Restorative doctors as a factor

Linkevicius, T, International J of Oral and Maxillo. Implant; Vol 24, Number 4: 2009 pages: 712-719

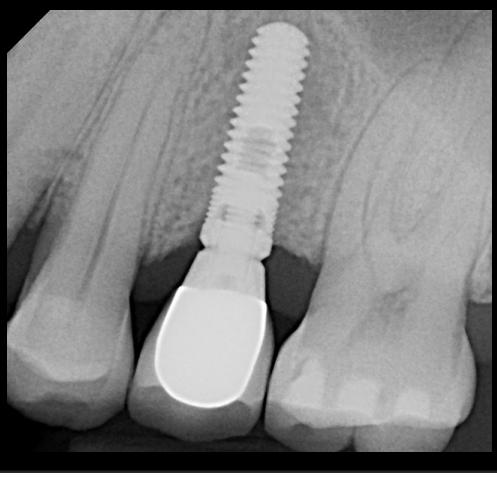
- Microgap (IAJ) movement and Polished Implant Collar will contribute to early crestal bone loss AND
- Thin tissue thickness <2.5mm will consistently be associated with early crestal bone loss (-1.5mm) and stable crestal bone was maintained at sites with thick tissue (>2.5mm).

Canullo, L. Platform switching and marginal bone-level alterations. Clin. Oral Impl. Res. 21,2010:115-121

- PS Implants experienced significantly less marginal bone loss than matching implant-abutment design

- PS=.99,.82,.56mm

no PS: 1.49mm



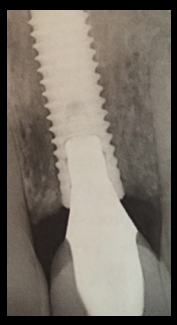
Canullo, article:

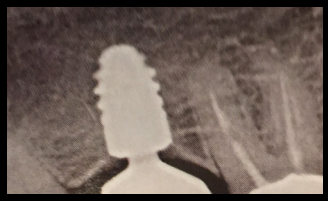
Clinical Oral Implants Research. 2012;23:1142–1146.

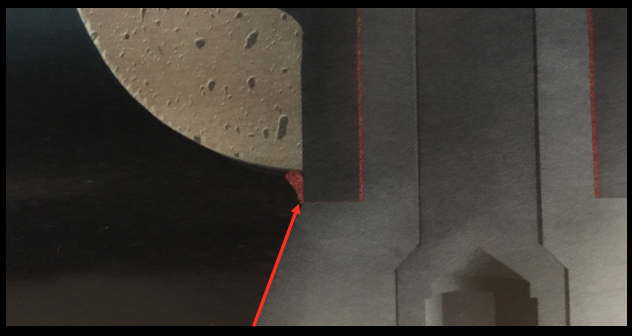
- Study with Platform Switching on half the implants and regular abutments on the other half
- After two years the results showed that Platform Switching cases showed a bone loss of just 0.3 mm and the regular abutment group showed a bone loss of 1.19 mm.

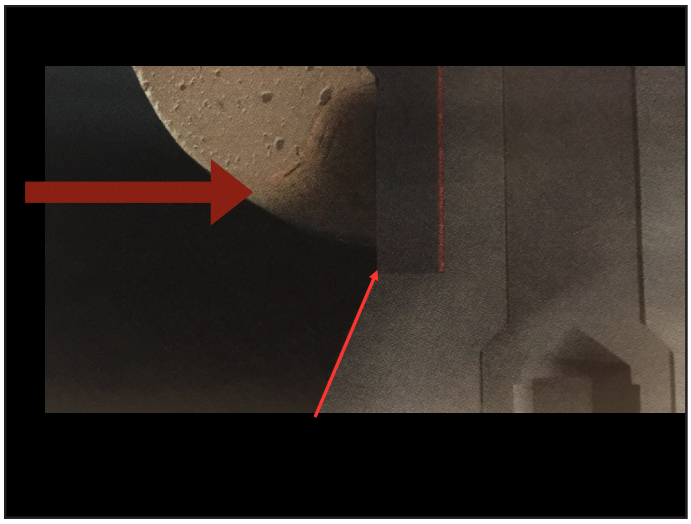
Especially if the Bone is compromised

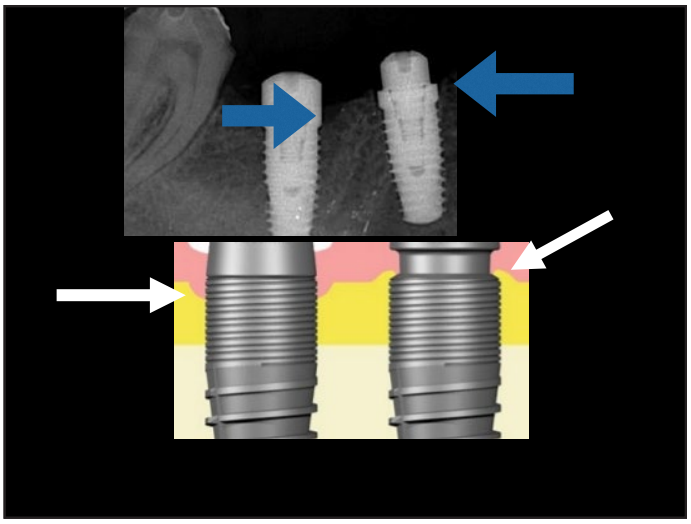
An 8 mm Implant with Platform Switching vs. a 13 mm implant makes a huge difference in long term surface area support











"Canullo article in 2010* "One Abutment - One Time" (AOT) or "Definitive Abutment" (DA) results in getting a more coronal attachment and an attachment to the abutment. Also maintains 0.5mm of bone that is not resorbed vs. constant replacement and *Ripping* of the Epi attachment with multiple on and off. Combine this with under contouring for an ideal esthetic result.

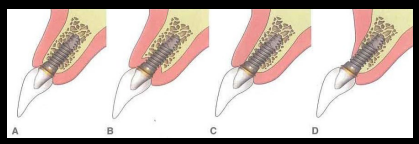
*Canullo; Eur J Oral Implants, 2010;3:285-296

Critical and Subcritical Contour Su, Weisgold, 2010

Esthetic Risk Factors and Level of Overall Risk

Esthetic risk factors	Level of risk		
	Low	Medium	High
Medical status	Healthy, uneventful healing		Compromised healing
Smoking habit	Non-smoker	Light smoker (≤ 10 cigs/day)	Heavy smoker (> 10 cigs/day)
Gingival display at full smile	Low	Medium	High
Width of edentulous span	1 tooth (≥ 7 mm)[1] 1 tooth (≥ 6 mm)[2]	1 tooth (< 7 mm)[1] 1 tooth (< 6 mm)[2]	2 teeth or more
Shape of tooth crowns	Rectangular		Triangular
Restorative status of neighboring teeth	Virgin		Restored
Gingival phenotype	Low-scalloped, thick	Medium-scalloped, medium-thick	High-scalloped, thin
Infection at implant site	None	Chronic	Acute
Soft-tissue anatomy	Soft tissue intact		Soft-tissue defects
Bone level at adjacent teeth	≤ 5 mm to contact point	5.5 to 6.5 mm to contact point	≥ 7 mm to contact point
Facial bone-wall phenotype*	Thick-wall phenotype ≥ 1 mm thickness		Thin-wall phenotype < 1 mm thickness
Bone anatomy of alveolar crest	No bone deficiency	Horizontal bone deficiency	Vertical bone deficiency
Patient's esthetic expectations	Realistic expectations		Unrealistic expectations

Thickness of Buccal Plate



- A) > than 1.5mm of Buccal Bone *then*
- B) Crestal bone loss will not cause soft tissue loss and maintain emergence contour
- C) < than 1.5mm of Buccal Bone *then*
- D) Crestal bone loss will cause associated loss of soft tissue and accompanying esthetic compromise.

Surgical Risk Factors:

- Defects of the Facial bone
- Thin Facial bone
- Thin Soft Tissue Biotype
- Facial malposition of the implant

Immediate Loading

- It was discovered over 30 years ago that this can be successful especially when splinting implants that are in an curved pattern - around the arch

Types of Bone

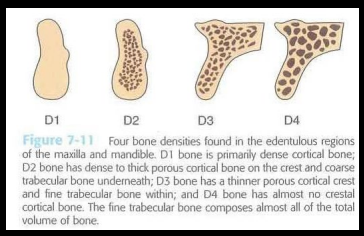
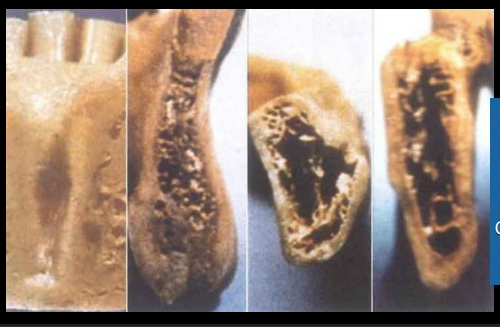


Figure 7-11 Four bone densities found in the edentulous regions of the maxilla and mandible. D1 bone is primarily dense cortical bone; D2 bone has dense to thick porous cortical bone on the crest and coarse trabecular bone underneath; D3 bone has a thinner porous cortical crest and fine trabecular bone within; and D4 bone has almost no crestal cortical bone. The fine trabecular bone composes almost all of the total volume of bone.

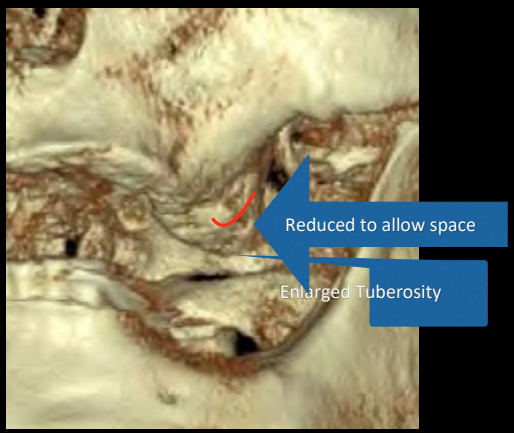
Tx Planning by Density of Bone:

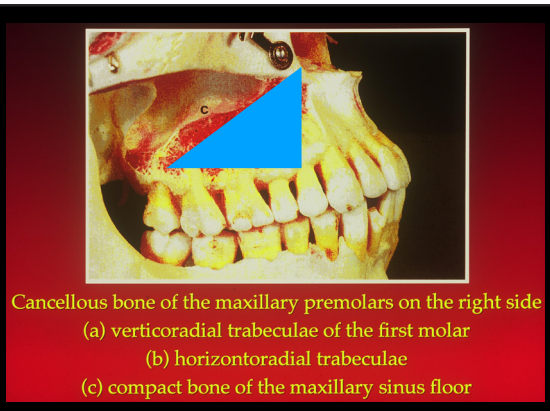


#, Length, Splint or not, Position, Cantilever, Occ Table

History of the Sinus Lift

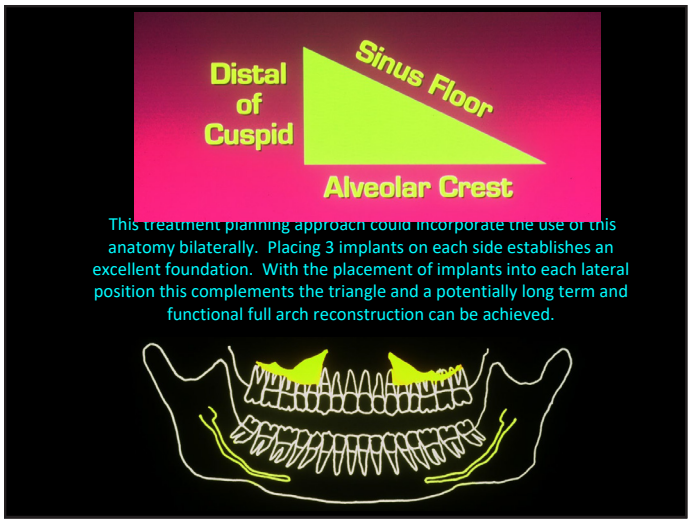
- First performed by Dr. Hilt Tatum in 1975 at Lee County Hospital in Opelika, Alabama
- Dr. Phil Boyne and Dr. Robert James publish the first paper in 1980.

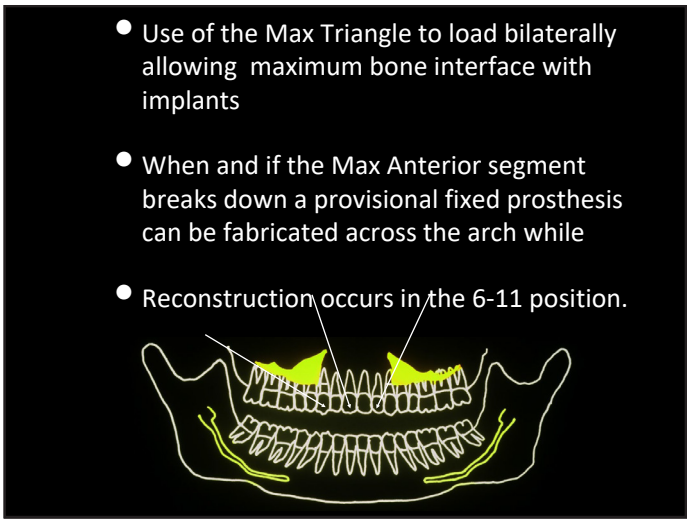


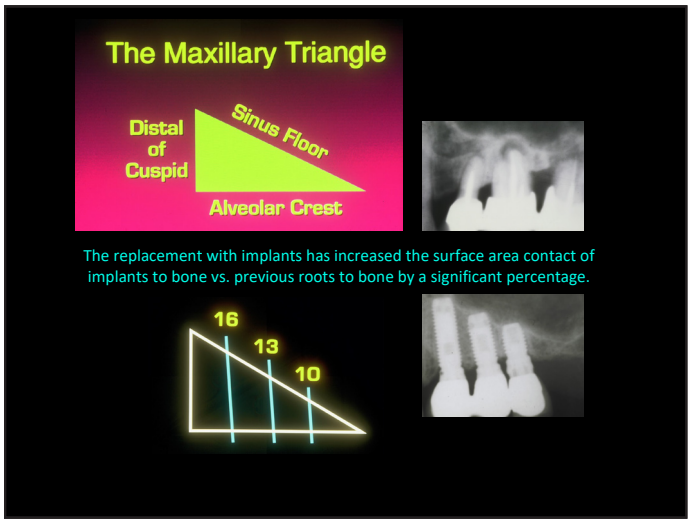


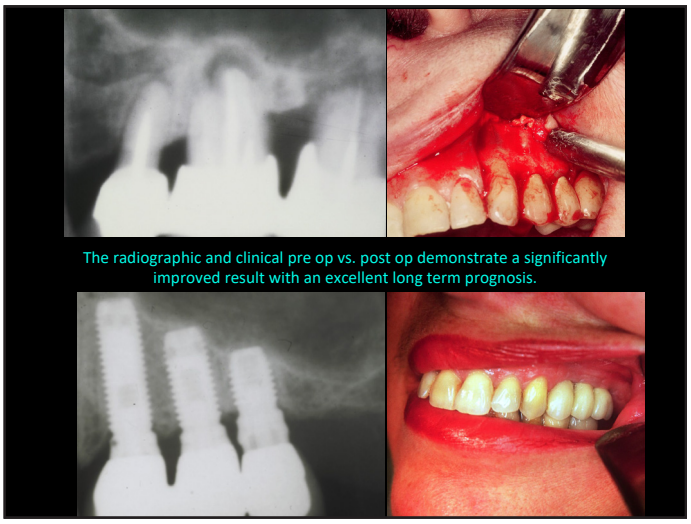
Cancellous bone of the maxillary premolars on the right side
(a) verticoradial trabeculae of the first molar
(b) horizontoradial trabeculae
(c) compact bone of the maxillary sinus floor

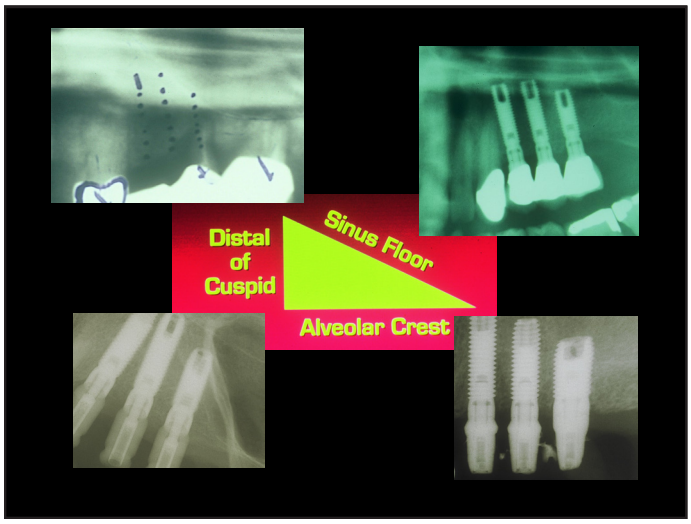
"The Maxillary Triangle"

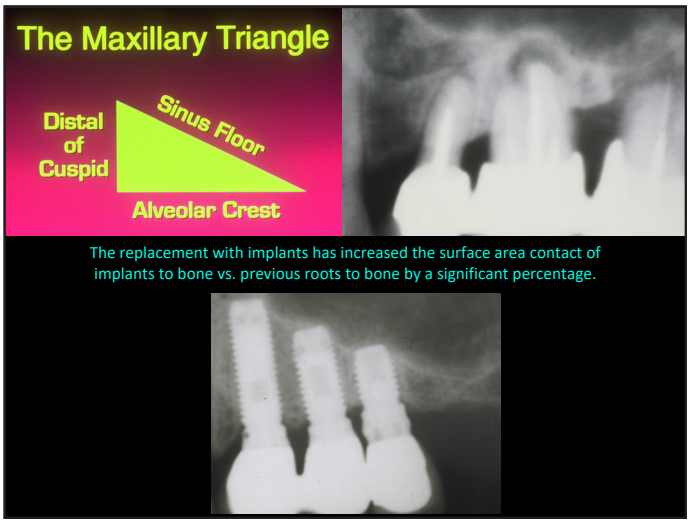

Distal of Cuspid
Sinus Floor
Alveolar Crest
This treatment planning approach could incorporate the use of this anatomy bilaterally. Placing 3 implants on each side establishes an excellent foundation. With the placement of implants into each lateral position this complements the triangle and a potentially long term and functional full arch reconstruction can be achieved.


Use of the Max Triangle to load bilaterally allowing maximum bone interface with implants
When and if the Max Anterior segment breaks down a provisional fixed prosthesis can be fabricated across the arch while
Reconstruction occurs in the 6-11 position.

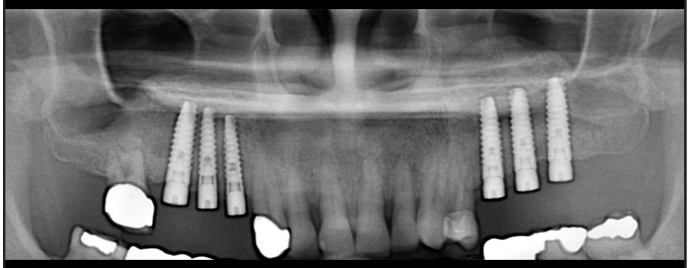

The Maxillary Triangle
Distal of Cuspid
Sinus Floor
Alveolar Crest
The replacement with implants has increased the surface area contact of implants to bone vs. previous roots to bone by a significant percentage.
16
13
10


The radiographic and clinical pre op vs. post op demonstrate a significantly improved result with an excellent long term prognosis.

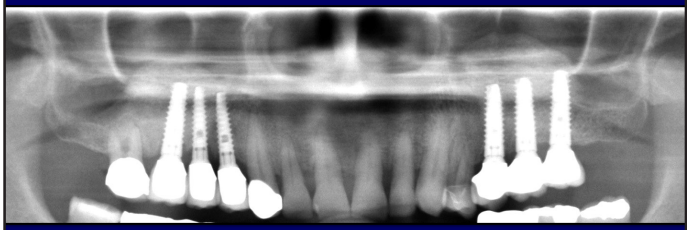

Distal of Cuspid
Sinus Floor
Alveolar Crest


The Maxillary Triangle
Distal of Cuspid
Sinus Floor
Alveolar Crest
The replacement with implants has increased the surface area contact of implants to bone vs. previous roots to bone by a significant percentage.

Post Operative View



SINUS LIFT WITH IMPLANT PLACEMENT



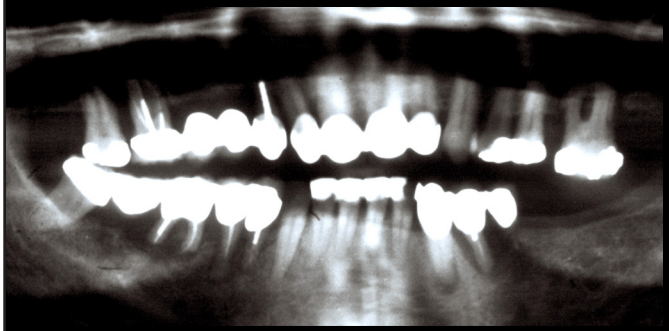
Post Prosthetic View

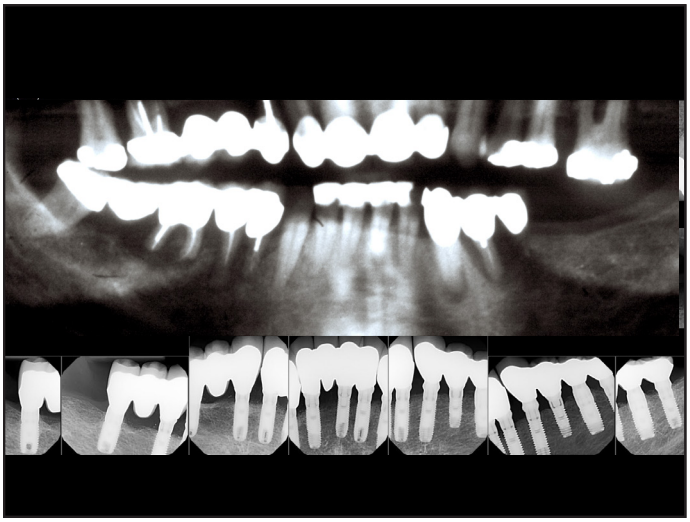
Consider Splinting when:

- Multiple adjacent implants placed in grafted bone (Sinus Augmentation/Lift cases)
- Multiple adjacent implants in soft bone
- Multiple short adjacent implants anywhere

Pre-op:

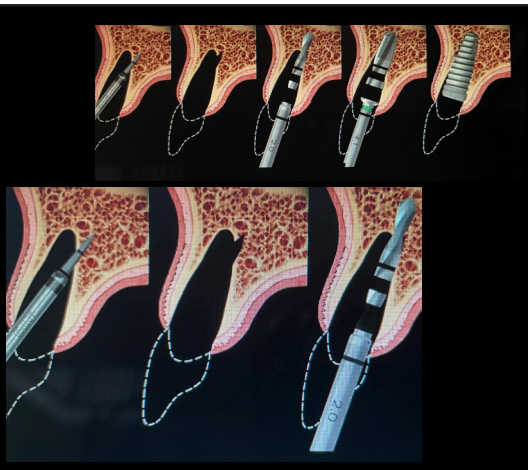
Removal of all Mandibular teeth





Grunder U., Int J of Perio and Rest Dent, 2000;20:11-17

- "Augment the labial bone with at least 2 or more mm's of bone graft beyond the implant platform to adequately compensate for the natural bone remodeling that occurs after restoration and loading"



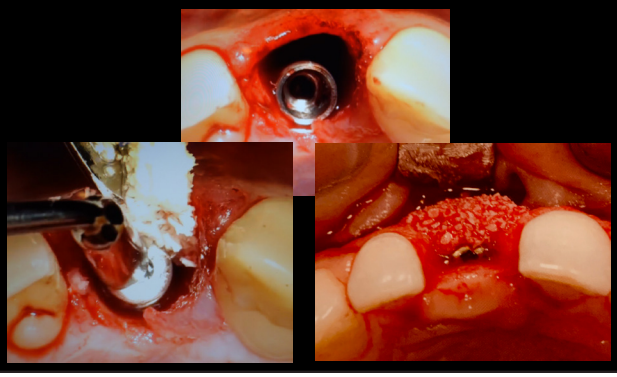
Conventional Wisdom

- Minimum of 2mm of Buccal Bone thickness on the facial aspect
- Implant body should be slightly palatal to the position of the cingulum on adjacent teeth
- Implant should be apical by 3-4 mm's from the Free Gingival Margin

Conventional Wisdom

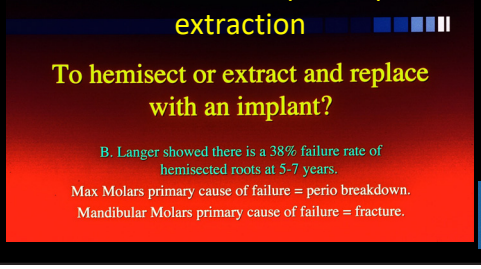
- Implant to Implant = 3 mm
- Implant to Tooth = 1.5 mm - 2.0mm

Placing to the Palate allows build up of 2 mm+ +



Hemisection and Root Resection as an option?

Before the advent and higher success rates for implants, hemisection and resection were the available treatment options prior to extraction



Buhler also showed a 32% failure rate occurring at 5-7 years.

Hemisections work well for the short term but poor for the long term.

Long term = 10 years.

Failure rate of single implants at ten (10) years is now **2.6% ? -** therefore implants are a better option now, than were hemi or resection in the past

with a 32% to 38% failure rate **Right?**

'88. J of Perio

Root Resection and Hemisection **Revisited***

- 195 patients with min of 5 years and up to 40 years follow-up
- Overall survival rate = **94.8%**

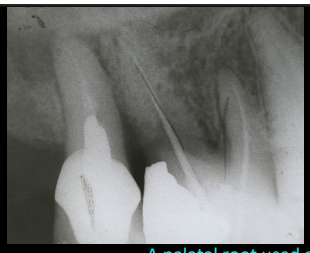
J, Megarbane. International J of Perio and Rest Dent 2018; Vol 38, Number 6:783-789

Root Resection and Hemisection Revisited*

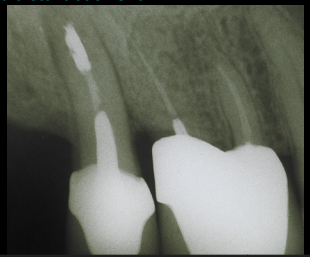
- No difference was found between the site of surgery (Max vs Man)
- Resected Molar teeth if stand alone can be made into bicuspids with a reduced occlusal table.

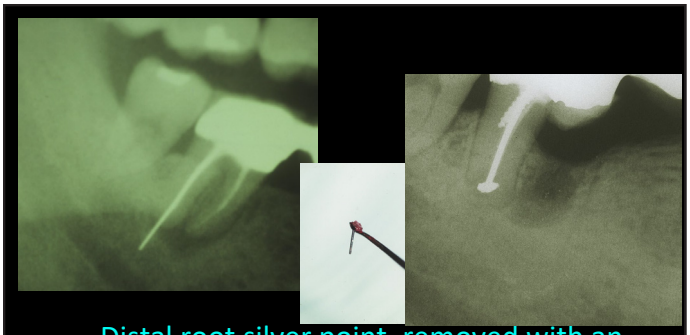
Root Resection and Hemisection Revisited*

- Splinting resected teeth is not always necessary
- w/r/t/ Mandibular Molars: the distal root should always be maintained when the mesial and distal roots are equally affected



A palatal root used as a distal abutment



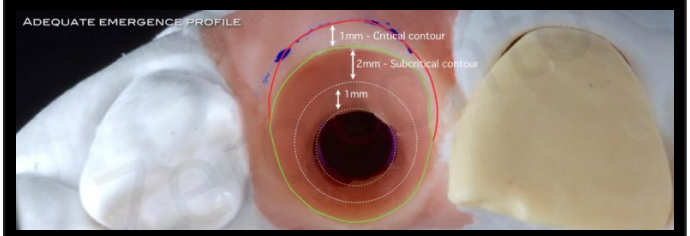


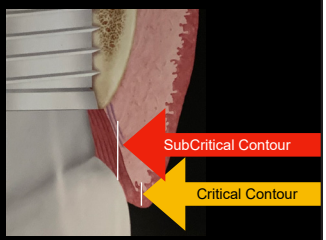
Distal root silver point, removed with an apico and mesial root resection, initial perio defect on the mesial is now intact alveolus. Although not ideal, this has remained intact for over 20 years.

Emergence Contours

Su, 2010

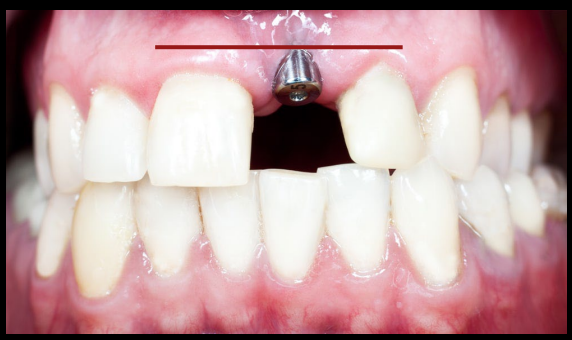
- Critical Contour = The contour 1 mm immediately below the gingival margin. This contour when modified can displace the gingival margin apically.
- Sub Critical Contour = Is the contour below the Critical Contour. This can create soft tissue volume and once created it can be displaced where it is needed.

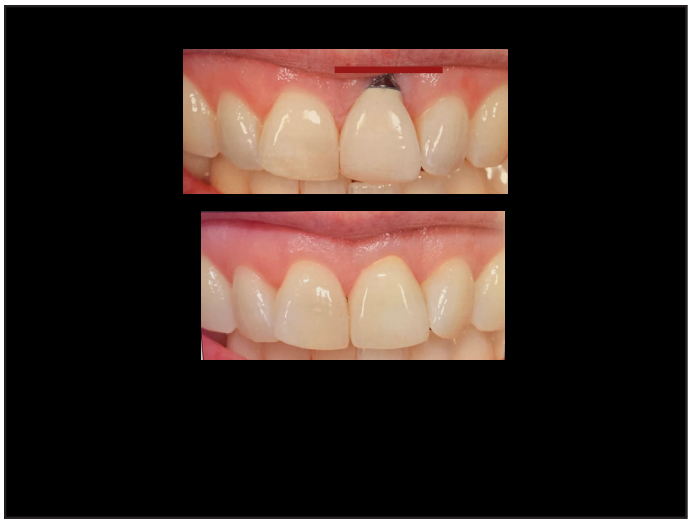


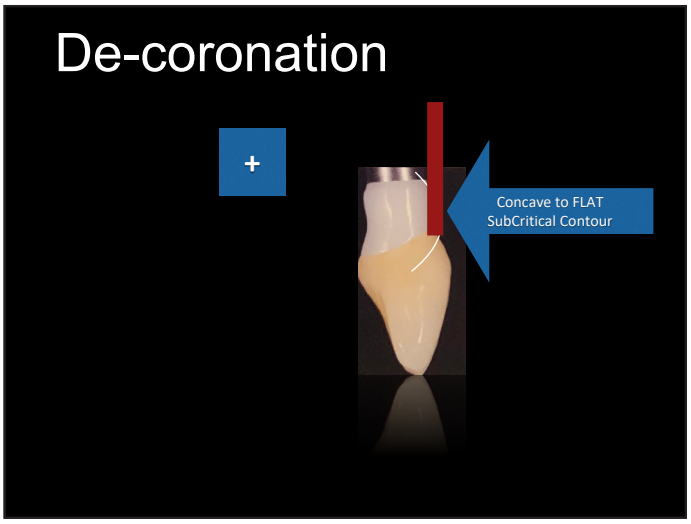


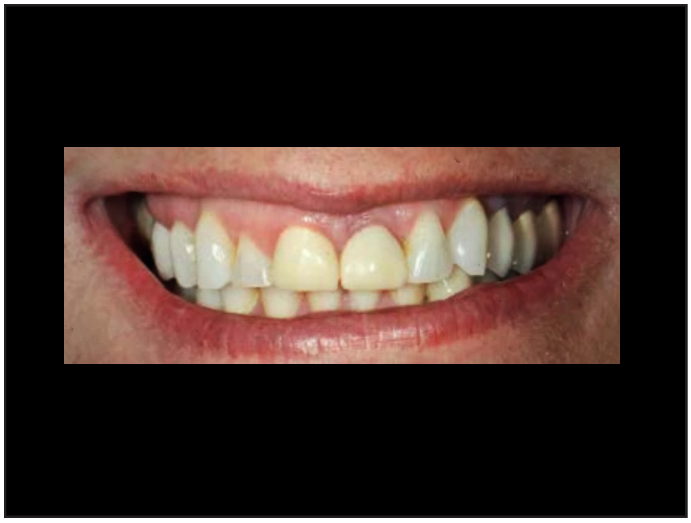
Sub-critical Contours

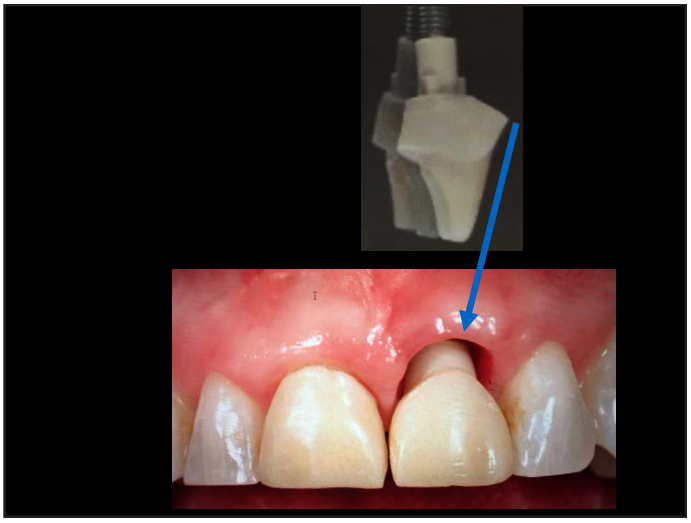
- Can shape the gingival level - the first bend from the implant..
- If concave - tissue can move coronally 1-2 mm's
- If convex - tissue can go apical and you can create recession up to1-2 mm's coronally





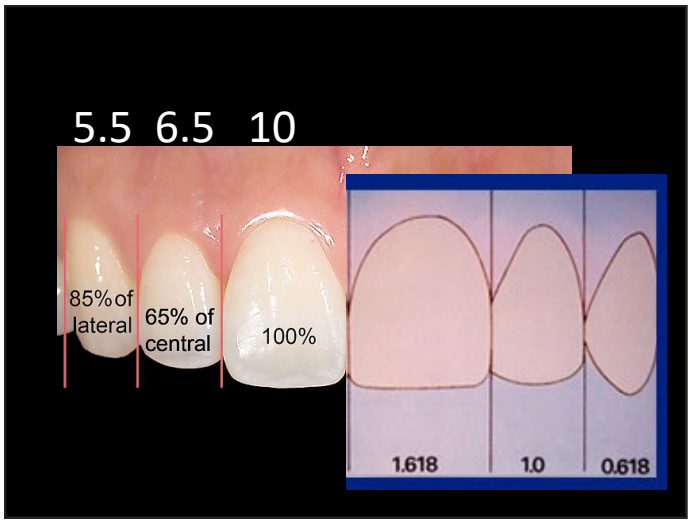

De-coronation
+
Concave to FLAT
SubCritical Contour



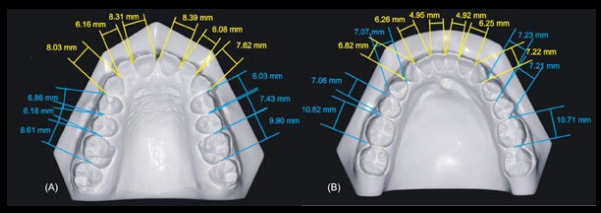



Pre
Post


85% of lateral
65% of central
100%
79% W/L



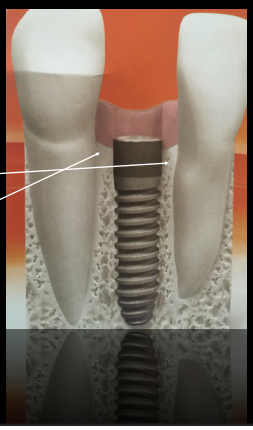
In some cases, maintaining the tooth may be the *best treatment option.....*

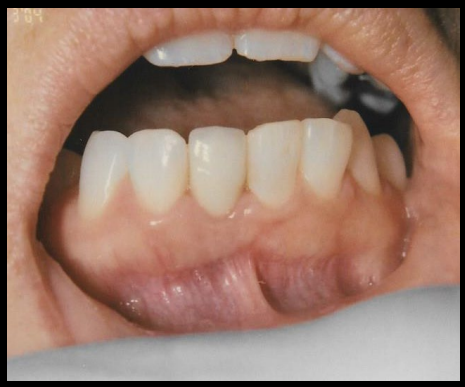


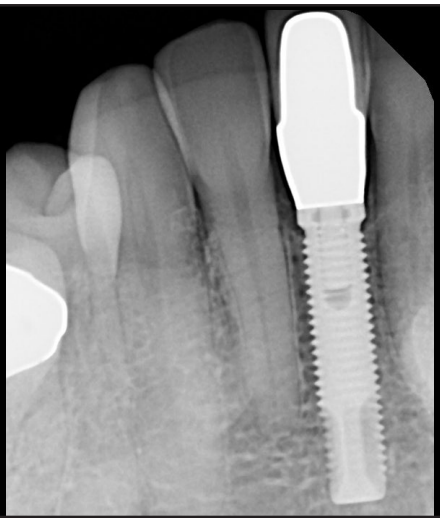
Tooth	Upper right	Upper left	Ideal
Central Incisor			8.85
Lateral Incisor			6.9
Canine			7.88
Tooth	**Lower right**	**Lower left**	**Ideal**
Central incisor			5.5
Lateral incisor			6
Canine			6.95

Lower Incisors

Even with a 3.0 + 1.5 + 1.5 = 6.0
or ideally 3.0 + 2.0 + 2.0 =
7.0







Biotype: **Thick** vs. *Thin*
&
Tooth forms

60% prevalence of
Thick Biotype
(Low Scalloped)
Thick Biotype is mostly associated with the square to rectangular tooth form

Thick Biotype reacts to periodontal disease with..

- Bone Loss and
- Pocket formation

40% prevalence of
Thin Biotype
(High Scalloped)

Thin Biotype is mostly associated with the tapered to slightly triangular tooth form

Thin Biotype reacts to periodontal disease with..

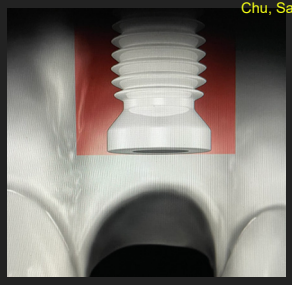
- Rapid Bone Loss and
- Gingival Recession

Levine, R. 10 Keys for **Successful Esthetic Zone** Single Immediate Implants: Importance of **Biotype Conversion** for Lasting Success. Compendium, Vol 39, Number 8, Sept. 2018

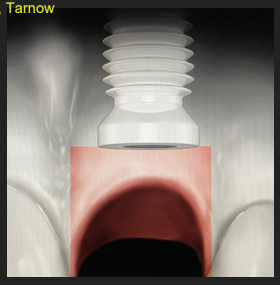
- Facial Gingival Grafting using a Palatal (SCTG) to augment existing gingiva and allow for **biotype conversion**.

The Dual Zone Therapeutic Concept..

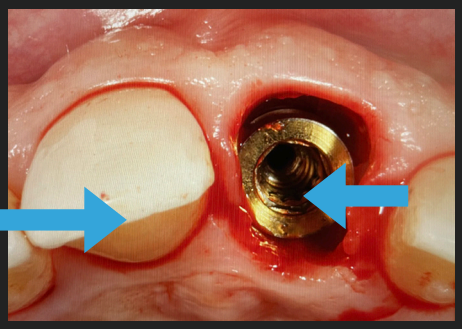
Chu, Salama, Tarnow



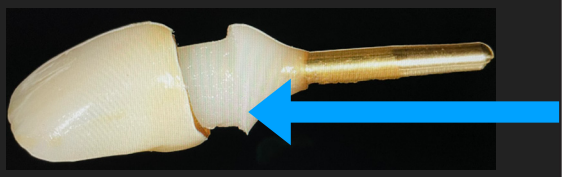
BONE ZONE: TISSUE APICAL TO THE IMPLANT-ABUTMENT INTERFACE



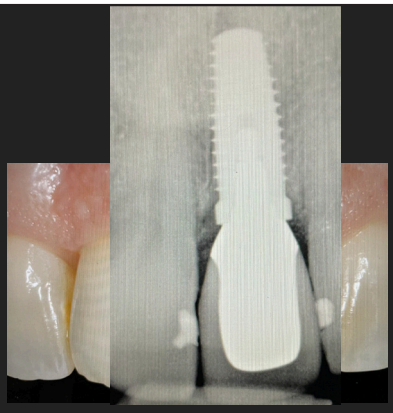
TISSUE ZONE: THE TISSUE CORONAL TO THE IMPLANT-ABUTMENT INTERFACE

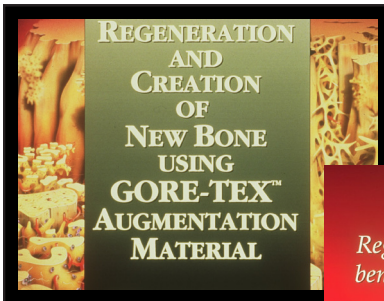


IMPLANT FIXURE PLACED TO THE PALATE 2 MM SO IT WILL EMERGE THROUGH ADJACENT TEETH CINGULUM



A cementing die replica is made from bis-acryl material allowing an indirect and extra oral cementation of the final crown

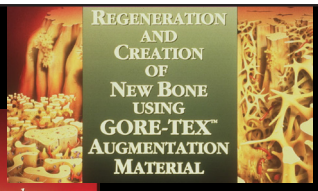




Boyne, Phil J.

Regeneration of alveolar bone beneath cellulose acetate filter implants (abstract). J Dent Res 1964;43:827

Barrier membrane approach made popular by "Gore-Tex"



Boyne, Phil J.

Regeneration of alveolar bone beneath cellulose acetate filter implants (abstract). J Dent Res 1964;43:827

Nyman, S. Lindhe, J. Karring, T. Rylander, H.
New attachment following surgical treatment of human periodontal disease.
J Clin Periodontal 1982; 11:494.1

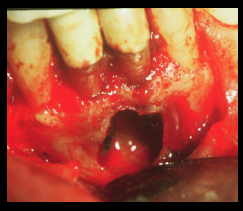
Healing of maxillary and mandibular bone defects using a membrane technique

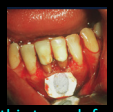
C. Dahlin, A. Linde, J. Gottlow, & S. Nyman.

***Scand. J. Plast. Reconstr. Surg.* 1990; 24: 13-19**

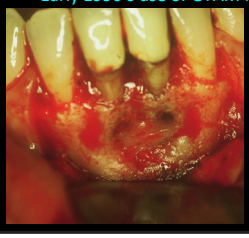
- **Purpose: to evaluate the use of GTR in the treatment of mandibular and periapical cysts**
- **Model: monkey mandibles and maxillae**

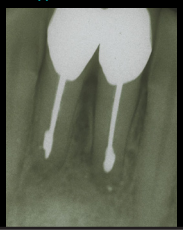
Critical Size Defect :



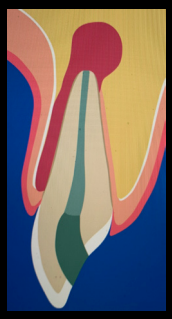


Early 1990's use of GTAM for this type defect





Complete Apicomarginal Defect



Teeth treated with loss of alveolar buccal plate with apical surgery

Success Rate of 35% = **65% Failure Rate**

Skoglund, A. Persson, G.

A follow-up study of apicoectomized teeth with total loss of the buccal bone plate.

Oral Surg Oral Med Oral Pathol 1985;59:78-81

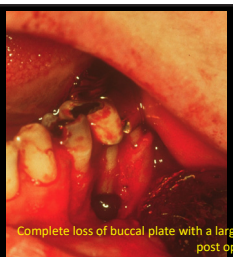
Guided Tissue Repair of Complete Buccal Dehiscences

Associated with periapical defects: A clinical retrospective study

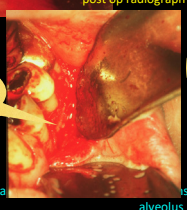
Dr. Daniel G. Pompa

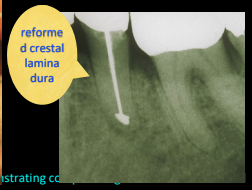
JADA, Vol.. 128, July 1997

Pages 989-997

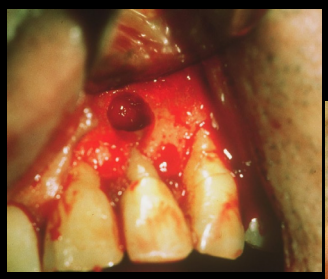


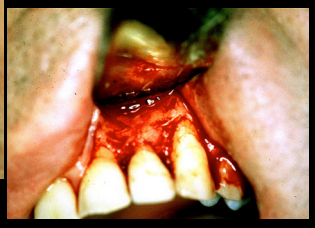
Complete loss of buccal plate with a large periapical defect, after a GTAM membrane is placed a post op radiograph is taken...





clinical and radiogra strating co
alveolus

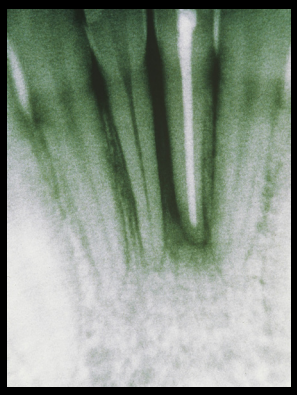




Pre op and post op demonstrating regeneration after complete loss of buccal plate (apicomarginal defect) *case not shown in JADA publication*

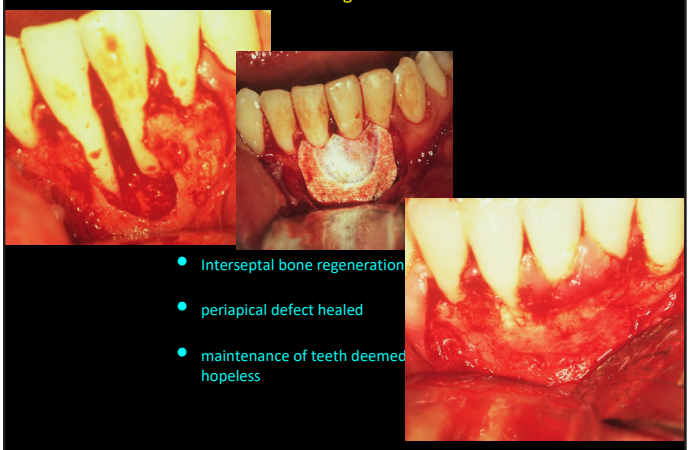
In some cases, maintaining the tooth may be the *best treatment option.....*

Complete loss of interseptal bone: prognosis is poor

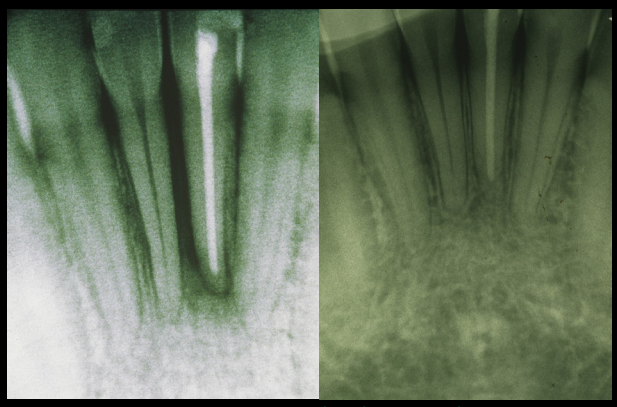


Replacement with an implant(s) is not an ideal treatment option

Placement of a large GTAM Membrane

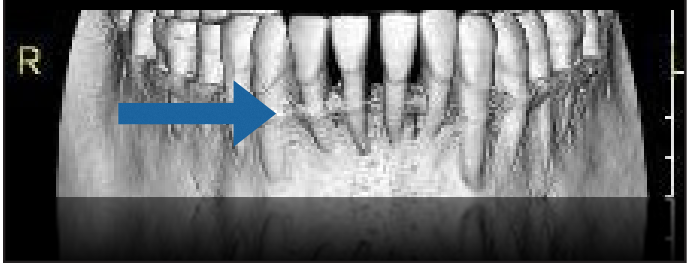


- Interseptal bone regeneration
- periapical defect healed
- maintenance of teeth deemed hopeless



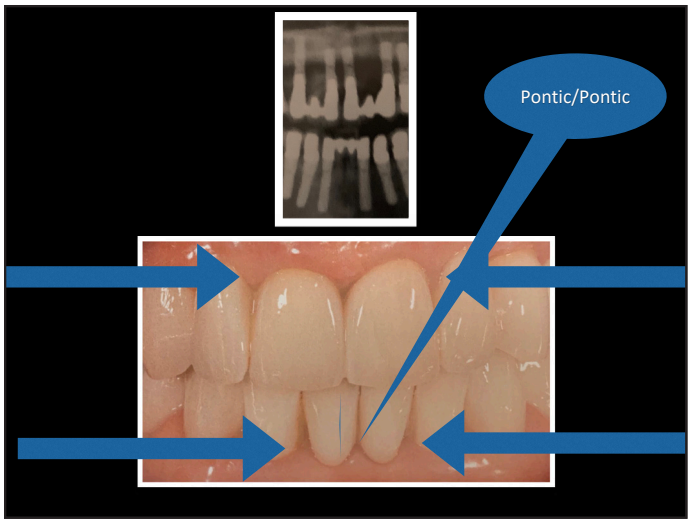
interproximal and periapical reformation of lamina dura

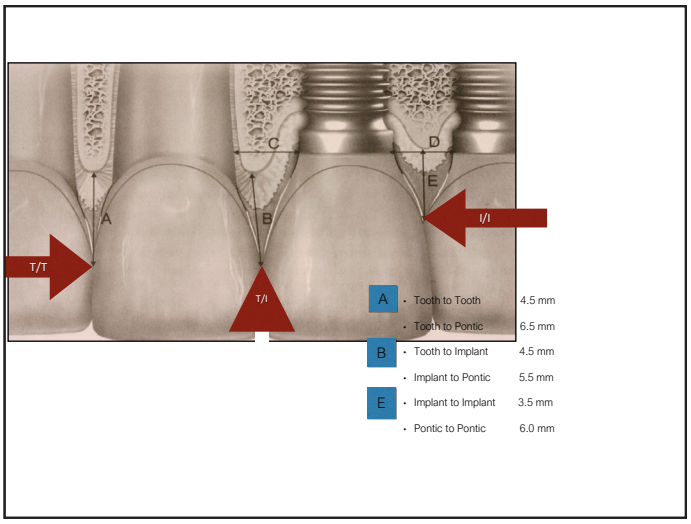
In other cases, NOT maintaining the tooth may be the *best treatment option.....*



Another common dilemma in treatment planning is how to deal with the periodontal breakdown of the lower anterior incisors...frequently seen in diabetic patients and in patients with a thin anterior alveolus and/or patients with early loss of posterior molars that have overused their anterior teeth.

Early intervention by removing 23, 24, 25, 26 (if chronic periodontal disease is present) along with grafting can result in a more ideal alveolus to replace these teeth. Implants can then placed into the 23 and 26 positions, with the fabrication of a 4 unit prosthesis with pontics in the 24 and 25 positions as a final result.



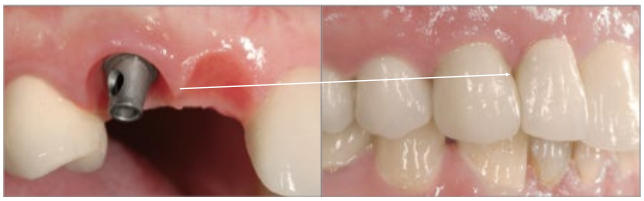


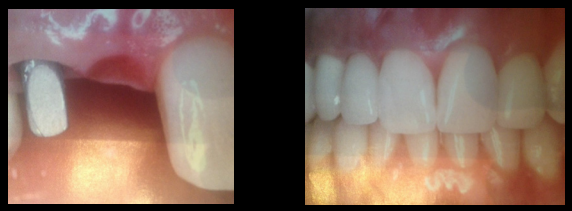
Adjacent missing cuspid and lateral is much more basic as we can learn from past fundamentals.....

Which tooth can we cantilever with the best long term prognosis?

Distance from bone to contact

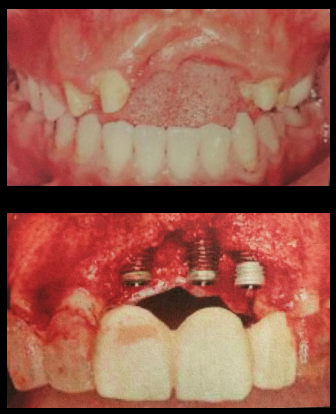
- ***Implant to Pontic*** ***5.5 mm***

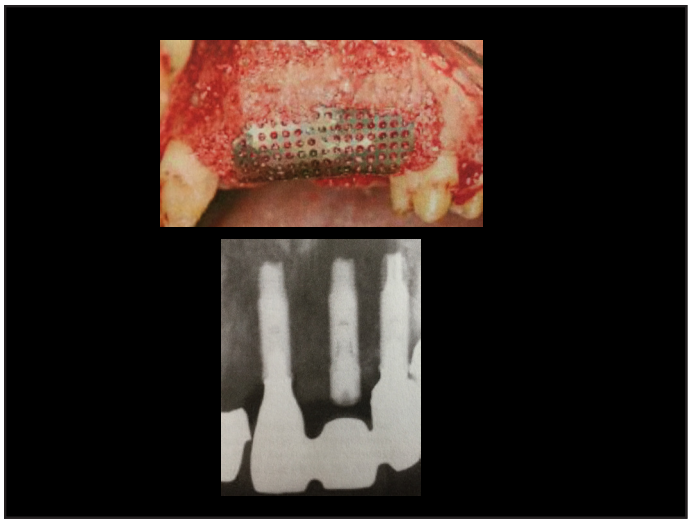


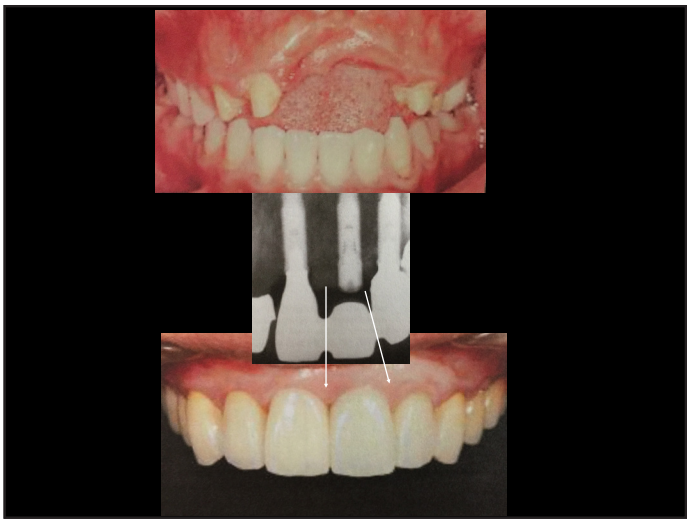


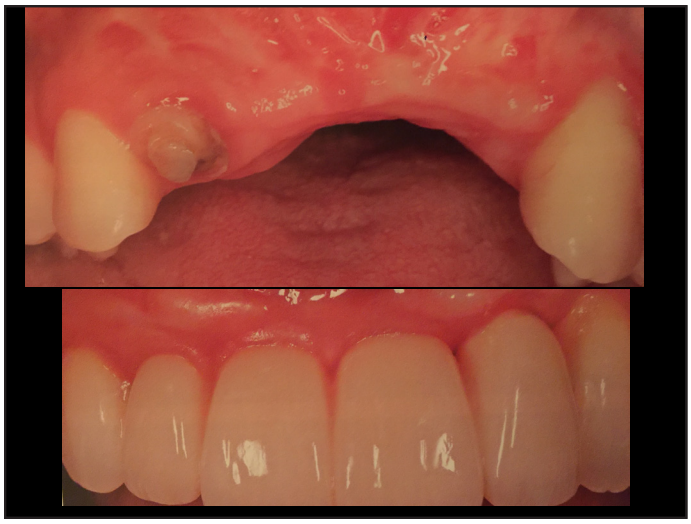
Replacement of #6,7 or #10,11

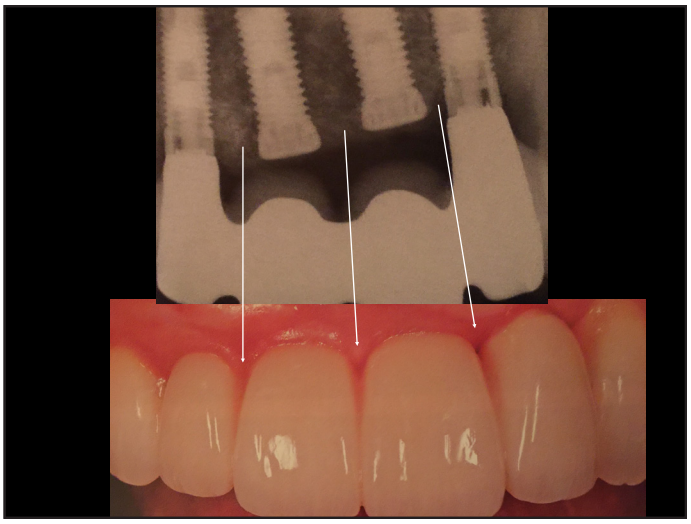
- Using a Pontic next to an Implant as the papilla can be achieved up to 5.5mm

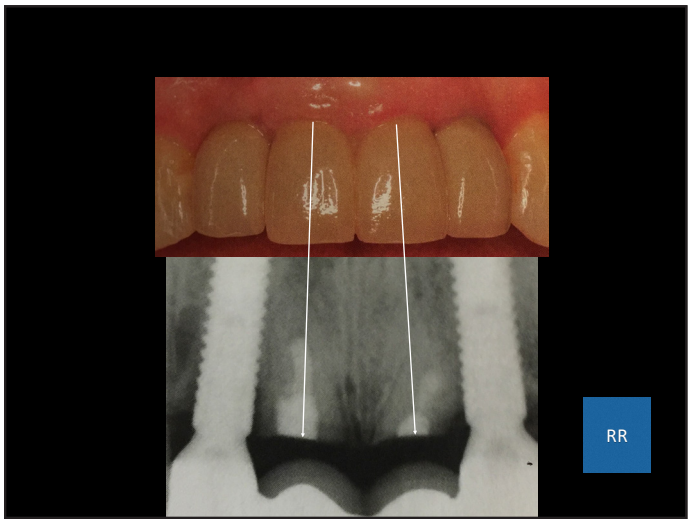


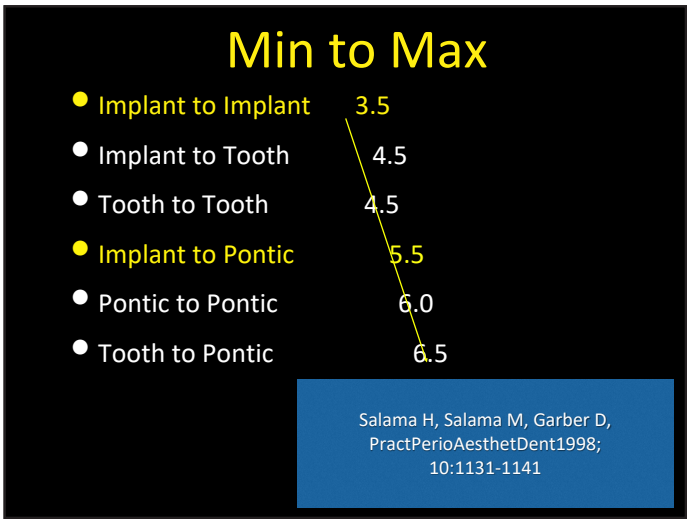


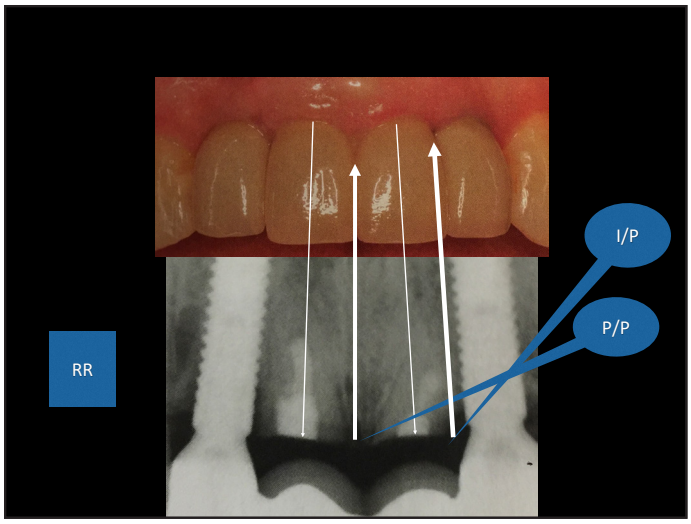


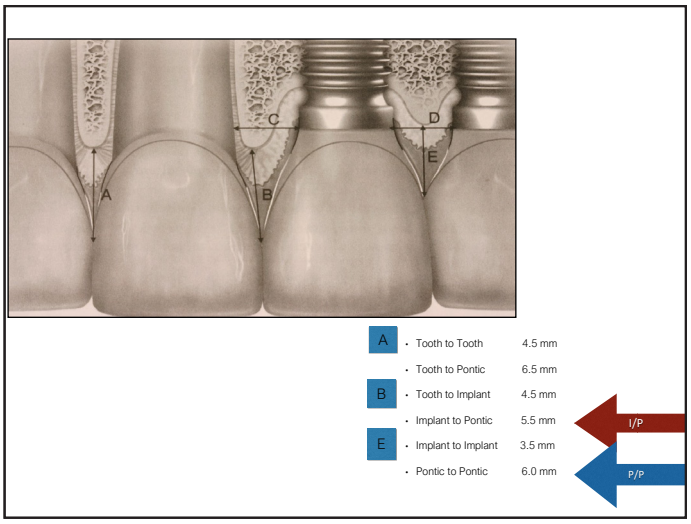





RR


Min to Max
Implant to Implant 3.5
Implant to Tooth 4.5
Tooth to Tooth 4.5
Implant to Pontic 5.5
Pontic to Pontic 6.0
Tooth to Pontic 6.5
Salama H, Salama M, Garber D, PractPerioAesthetDent1998; 10:1131-1141





Best way to preserve an extraction socket may be to:

- "Not to have an extraction socket"
- Therefore the Socket Shield Technique*
- Partial Extraction Technique (PET)

Now: Root Membrane Technique

*The Socket-Shield Technique: a proof-of-principle report Markus Hurzeler, J of Clin Perio 2010;37: 855-862

Keeping the Shield

- Will maintain the buccal plate and the crestal bone along with a PDL and bone morrow. Better blood supply to the crest vs. just periosteum.

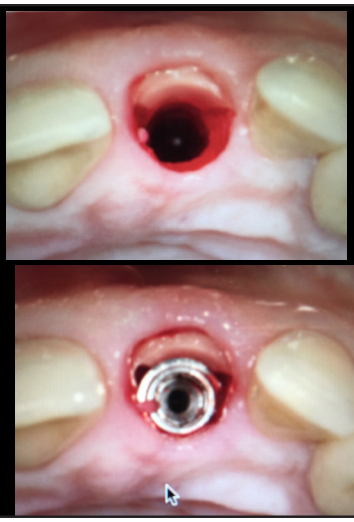
Blood Supply (Tooth)

- PDL
- Bone Marrow
- Periosteum

Blood Supply (Implant Interface)*

- PDL NO
- Bone Marrow NO - when 1mm or < of BP
- Periosteum YES

*Exception is PET = Socket Shield Technique keep all three



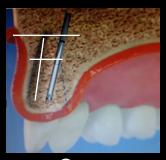
Follow up Studies:

- Gluckman H, Salama M. Partial Extraction Therapy with 4 years follow up. Clin Implant Dent Relat Res. 2018;20:122-129 **128 Implants 96.1%**
- Siormpas, D, Pikos, M. Root Membrane Technique: 10 year follow up. Implant Dentistry: Vol 27, Number 5, Nov, 2018 **250 cases with 97.3% success**

Orthodontic Extrusion

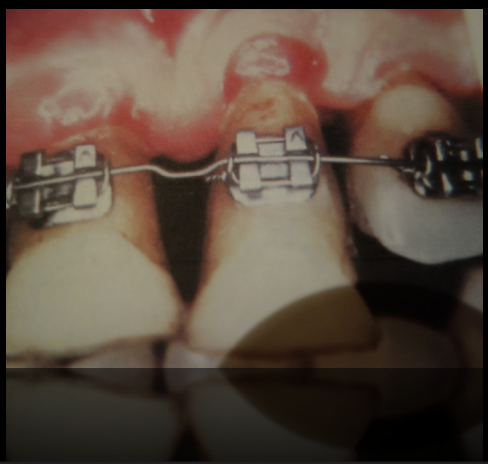
- ***Augments the crestal alveolar bone as well as the overlying gingival tissue***

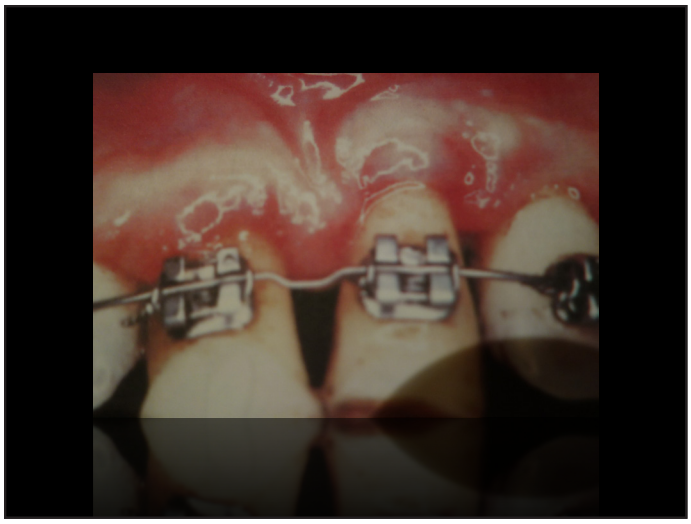
Orthodontic Extrusion also:

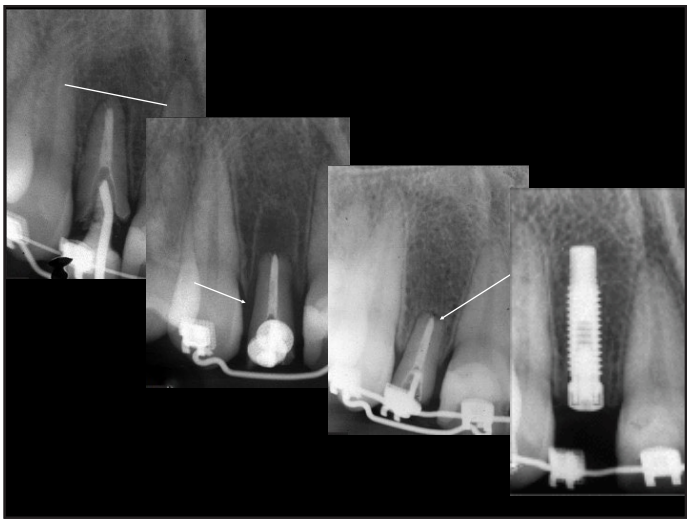


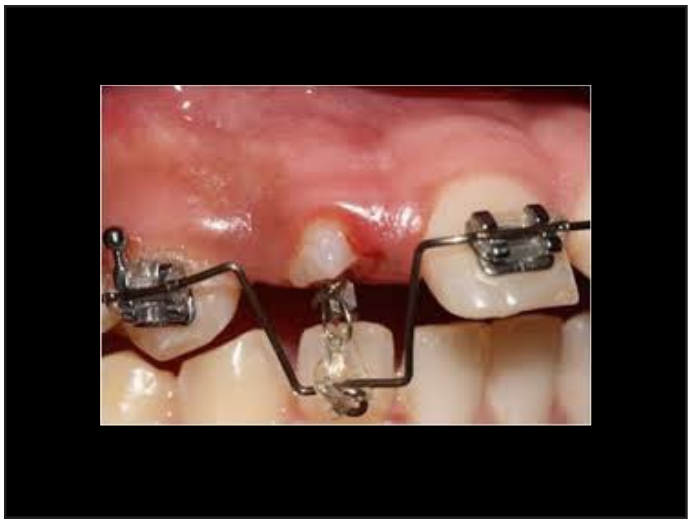
- Increases primary stability as there is more bone apical to the implant to stabilize it
- decreases the gap between the implant body and the extraction socket
- loosens the tooth - making an easier and less traumatic extraction

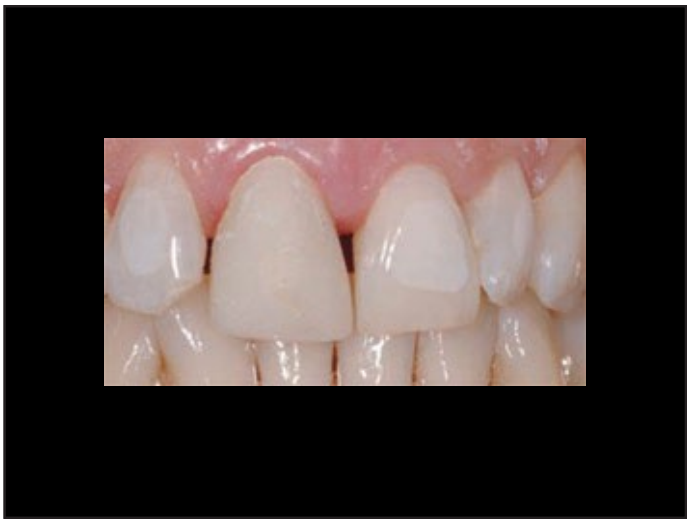
Orthodontic movement or super eruption or forced eruption should be considered as an option or as a component option in achieving the ideal treatment outcome (which may involve the placement of implants)

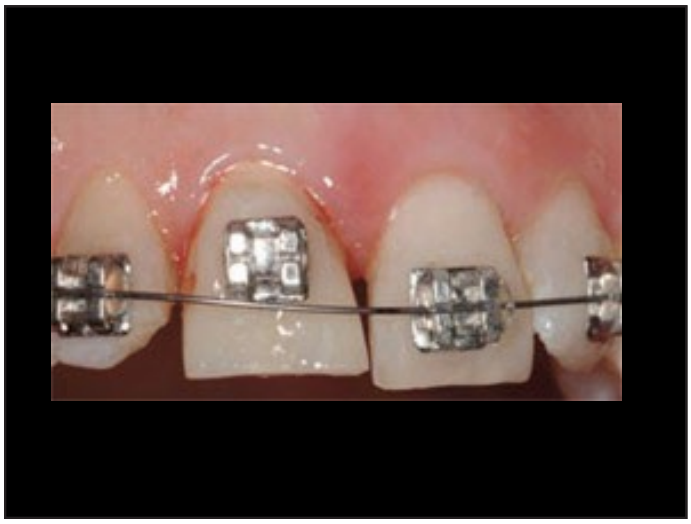


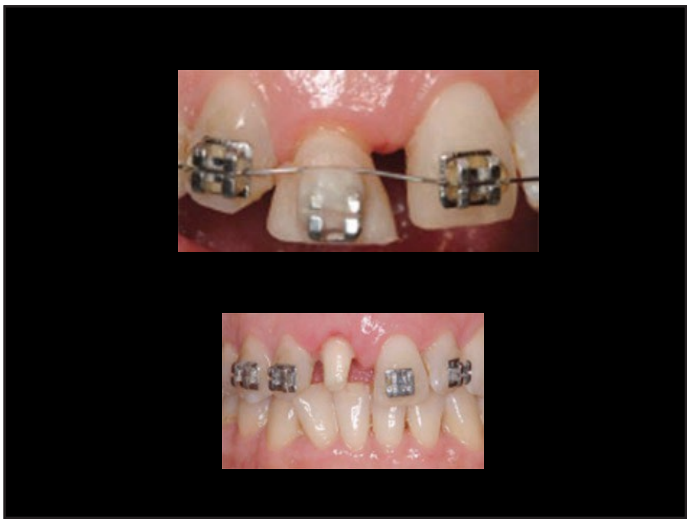


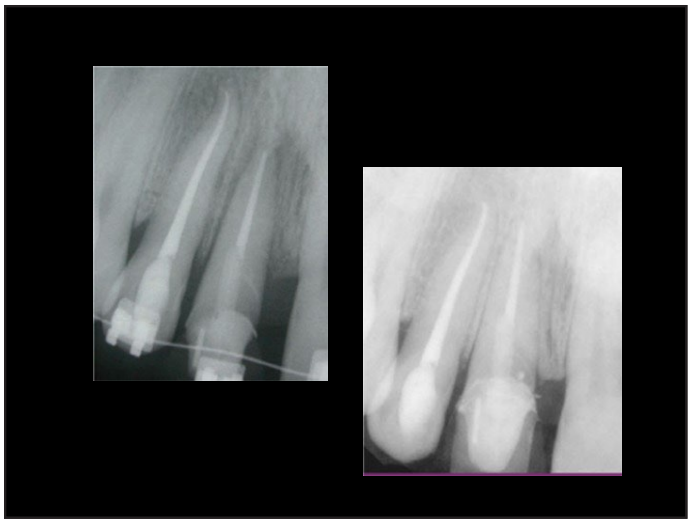


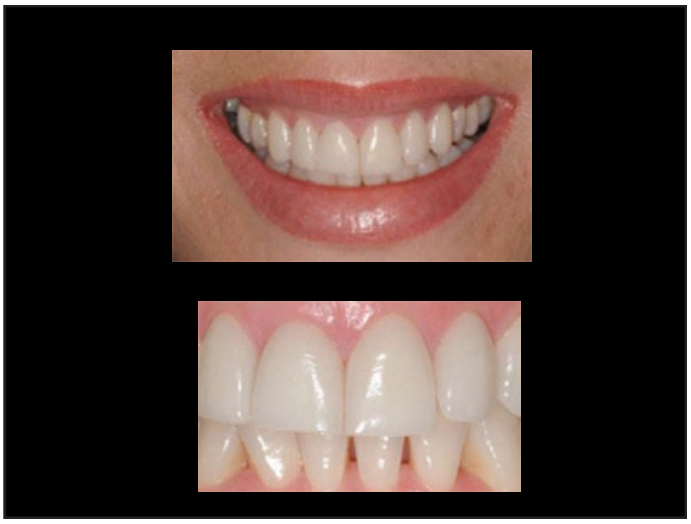


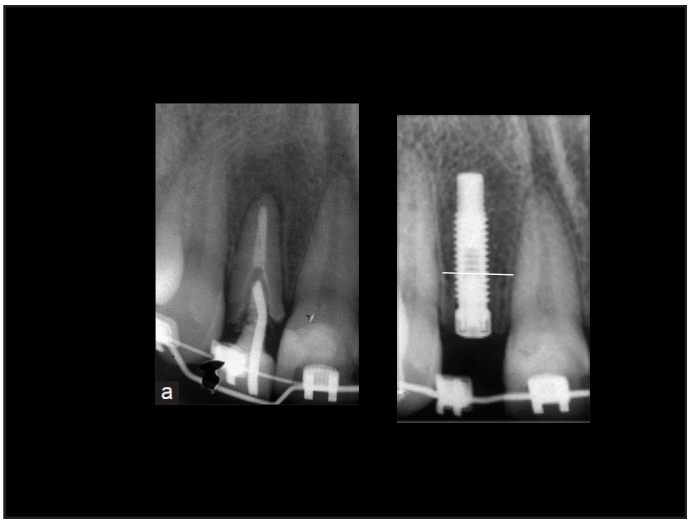






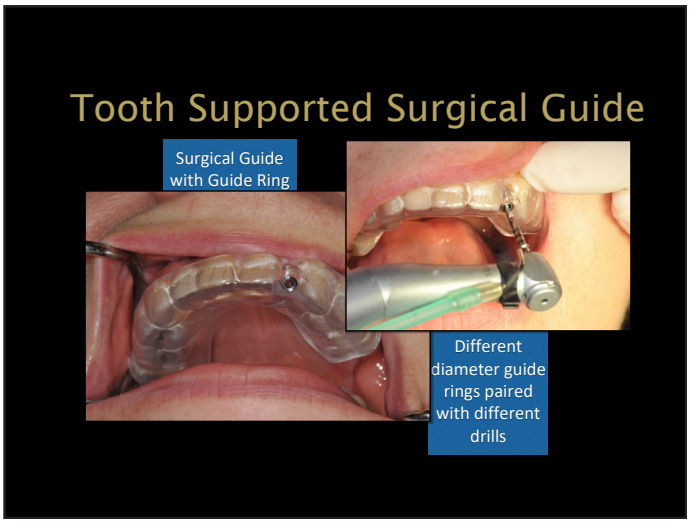


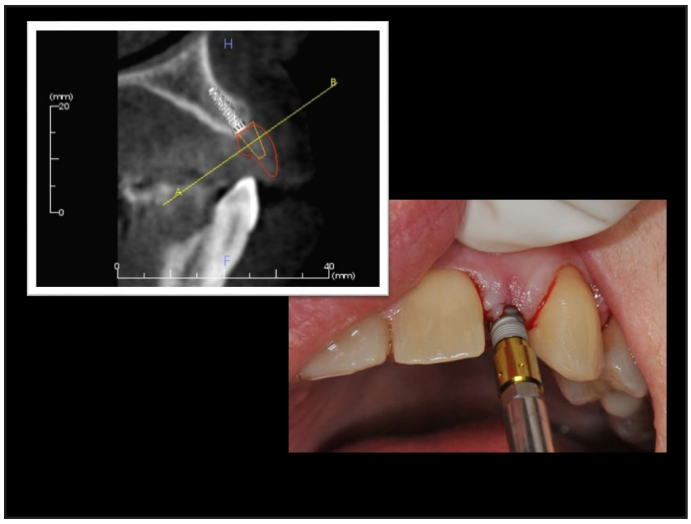


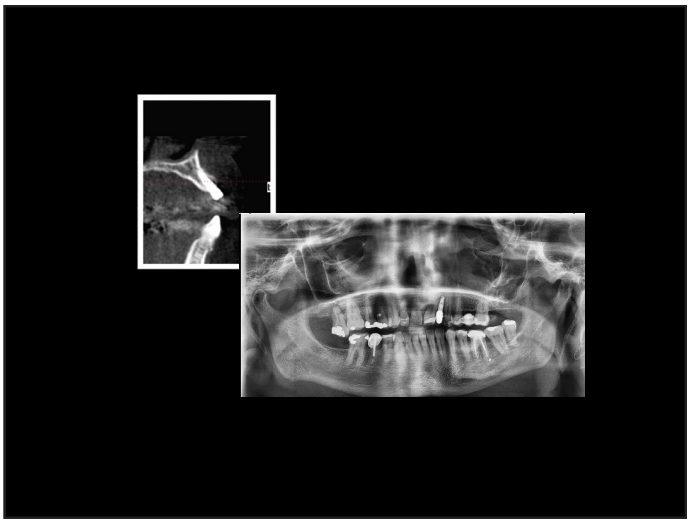


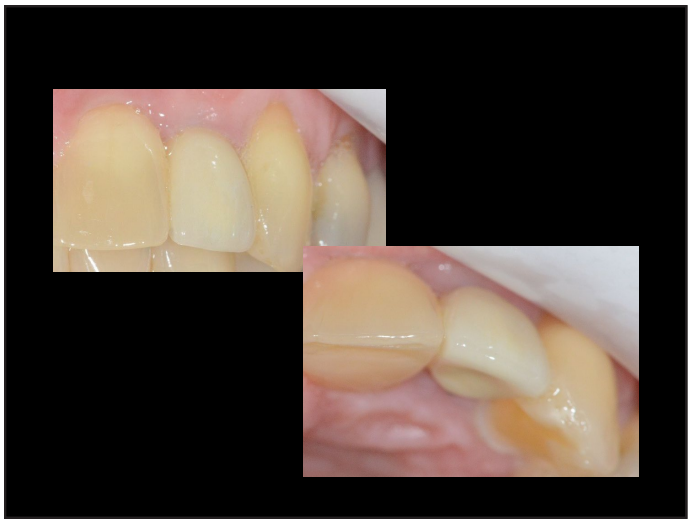
Replace…

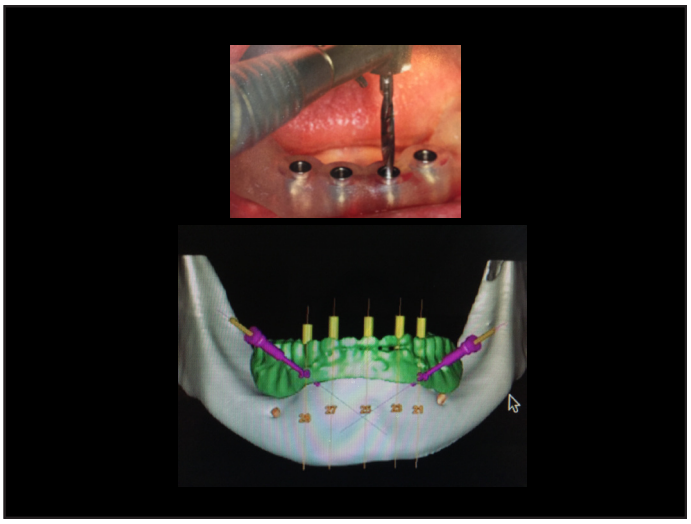
- Endo failure
- Perio failure
- Fracture or caries below crest where Orthodontic Extrusion will result in a poor C/R ratio and/or removal of critical bone for the ideal placement of an implant
- Internal, ***External Root*** resorption in the Esthetic Zone after skeletal growth is completed. Until then intervention can serve as a space maintainer.

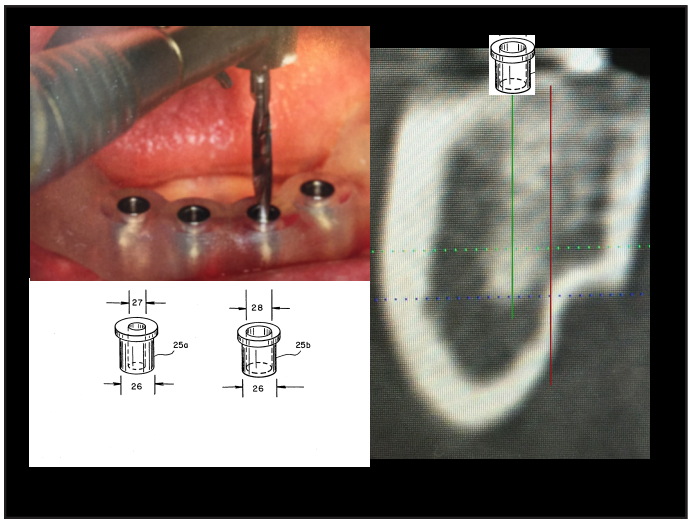












Anterior Mandibular Lingual defect as a possible cause of near-fatal bleeding during routine Dental Implant Surgery: A Retrospective Study*

- Schnetler, Todorovic, van Zul
- Implant Dentistry, Vol 27, Number 2: 2018

*24 Publications on this occurrence

Diabetic Patients and Implants..

- Consideration for not placing immediate implants or immediately loading protocol
- One common finding with DM patients is an incidence of up to 27% Peri-implantitis*

Use of CGS can lower that to less than 3%, average is 10%

*Eskow CC, Oates TW: ClinImpDentRes:Dec.2016

Diabetic Patients and Implants..

- All recent studies do not show a correlation with implant failure and DM Type 1 or Type II however:
- Consideration should be given to allowing a prolonged integration period before restoration to allow for healing

*Eskow CC, Oates TW: ClinImpDentRes:Dec.2016

Finding did show w/r/t Diabetes..

- Earlier failures and a higher % failure with Immediate Placed Implants and Immediate Loaded Implants than non Diabetic patients.
- Finding of Peri-Implantitis up to 27% in DM patients.

Carr A Revuru V, JOMI:Vol 32; Number 5, 2017

Retrospective Analysis on Survival Rate and Prevalence of Peri-implantitis when using Computer Guided Surgery (Guided Implant Placement)*

- 10 Year follow up with 97.4% Success (694 Implants)*
- Previous study with same authors at 7 years shows a 99.1% success rate with Guided Implant Placement**
- Additional finding - Peri-implantitis occurrence of 1.7% - 2.8% at 10 years.

**Tallarico,Meloni, JOralImpant,2016;42:265-271

*Tallarico, Meloni,JOMI:Vol 32, Number 5, 2017

Advantages of CT Generated Surgical Guides

- Precise placement maximizing the available bone and implant length to the exact position for maximal surface area achievement
- Reported Reduction in Peri-Implantitis for patients with Diabetes
- More ideal path of insertion for the prosthesis

Advantages of CT Generated Surgical Guides

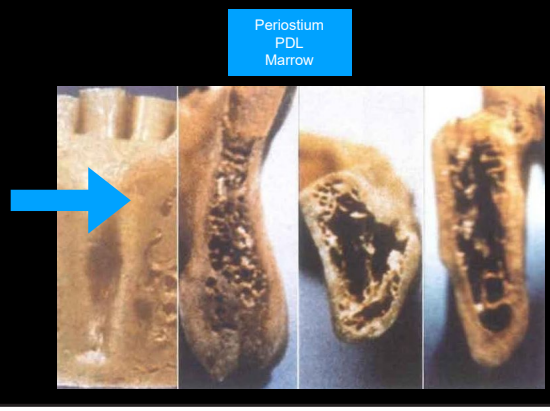
- Avoid perforation thru undercuts in the anterior and posterior mandible
- Avoid contact of the implant to surrounding vital structures - ie: the inferior alveolar nerve and or redirecting the osteotomy lingually in the area of the mental foramen

Advantages of CT Generated Surgical Guides

- When placing immediate implants - will give a precise path of palatal direction via the guide ring or sleeve (since the bur will want to follow the walls of the socket)
- When adequate zone of Attached Keratinized gingival tissue - will allow for a flapless approach thereby allowing for less crestal resorption and giving a better blood supply to the bone and soft tissue*

*Especially with Type I

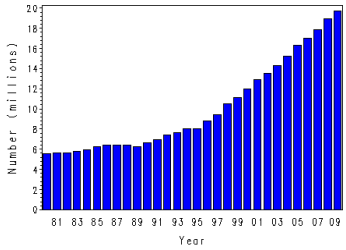
Type 1



DM is now classified (WHO) as a

- ***PANDEMIC***=A disease that is prevalent over a whole country or the world.

Number (in Millions) of Persons with Diagnosed Diabetes in the U.S., 1980-2009



www.cdc.gov/diabetes

CONFIDENTIAL AND PROPRIETARY

Periodontal Changes:

- ***"Evidence suggests that periodontal changes may be one of the first clinical manifestation of diabetes"***
- Lamster, Lalla, **JADA,** Vol 139, Supp 5, Oct **2008** pp19-24
- Since >33% of patients with DM don't know they have it and since more people see their DDS vs. their MD - (up to 70% vs. 40% of U.S. Population) ideally we should be on the forefront for screening for the disease and make the appropriate referral.

An ideal Periodontal and Maintenance Program

- Can reduce the A1c level by 0.4% - 0.6% this is equal to loosing 20+ lbs.
- As of January 2018: New ADA code:
  D0411 = HbA1c in-office point of service testing

Diabetic Patients and Implants..

- All recent studies do not show a correlation with implant failure and DM Type 1 or Type II however:
- Consideration should be given to allowing a prolonged integration period before restoration to allow for healing

*Eskow CC, Oates TW: ClinImpDentRes:Dec.2016

Finding did show w/r/t Diabetes..

- Earlier failures and a higher % failure with Immediate Placed Implants and Immediate Loaded Implants than non Diabetic patients.

Carr A Revuru V, JOMI:Vol 32; Number 5, 2017

Finding did show…

- Diabetes did NOT reduce survival rates
- *Presence of Coronary Artery Disease was associated with decreased implant failure*

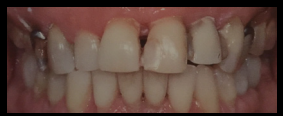
Carr A Revuru V, JOMI:Vol 32; Number 5, 2017

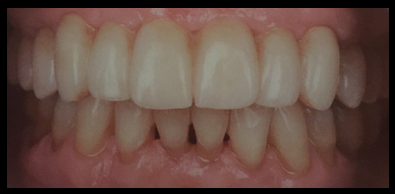
JOMI:

Vol 32 Number 3, 2017

- *Efficacy of Local and Systemic Statin Delivery on the Osseointegration of Implants: A Systematic Review*
- Findings: "Results of 18 Studies showed that statin administration enhanced new bone formation around implants and bone/implant contact."

Uses of Guided Implant Placement today…





Medication induced Bone changes

- *PPI's (Proton Pump Inhibitors)
- *Anti Depressants (SSRI's) 11% of people in the U.S. take them = Lexapro, Prozac, Celexa, Zoloft, and Paxil will double the risk of fractures with side effect of Xerostomia plus direct effect on osseointegration
- *Calcium Channel Blockers
- *Statins
- *Immunosuppressants
- *Birth Control Meds (DMPA)
- *Steroids (for Asthma and COPD)

PPI (Proton Pump Inhibitors)…

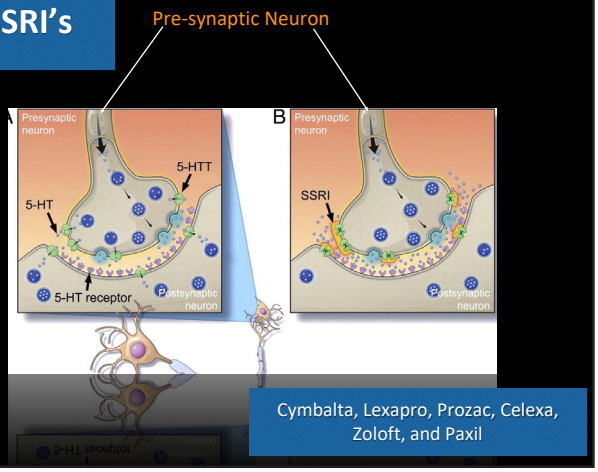
- 3559 Implant placed:
- For PPI uses - failure was 12% vs.
- 4.5% failure for non users of PPI
- Hypothesis is that the reduced acidity in the stomach impairs calcium absorption

Chrcanovic, Kish, Albrektsson, JOMI:Vol 32; Number 5, 2017

Common PPI's:

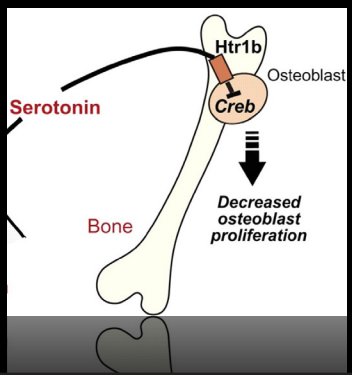
- Nexium
- Protonix
- Prevacid
- Prilosec
- Dexilant
- Kapidex
- Zegerid

SSRI's



Cymbalta, Lexapro, Prozac, Celexa, Zoloft, and Paxil

5HT-(Serotonin) binds to Htr1b in osteoblasts and inhibits **Creb** (Cyclic AMP response element binding) protein resulting in **reduced osteoblast proliferation**



Calcium Channel Blockers

- Amlodipine (Norvasc)
- Diltiazem (Cardizem, Tiazac, others)
- Felodipine
- Isradipine
- Nicardipine
- Nifedipine (Adalat CC, Afeditab CR, Procardia)
- Nisoldipine (Sular)
- Verapamil (Calan, Verelan)

B Blockers, ACE Inhibitors and Angiotension II Receptor blockers all do not have an effect on mineralization

Major Risk Factors (% Failure)

*Immunosuppressives	13.5%
Bruxism	12.5%
*Proton Pump Inhibitors	12.0%
Smoking	11.6%
Implant length	10.0%
*Antidepressants (SSRI's)	9.3%

Chrcanovic, Kish, Albrektsson, JOMI:Vol 32; Number 5, 2017

It's more about the Meds and Habits, than the actual Disease

Risk Factors resulting in Poor Outcomes

- Defects of the Facial bone
- Thin Facial bone
- Thin Soft Tissue Biotype
- Malposition of the implant

- Thin Biotype is 3X more likely to develop recession
- Thin Facial Bone (<1mm) can result in 3.5X more bone loss than Thick Facial Bone (>1mm)

64% of patients with < 1 mm

Thin tissue = < 2.5mm

- can be associated with up to 1.45 mm of bone loss in the first year of function*

*Linkevicius, T, Clinical Implant Dentistry:2015;17(6):1228-1236

Levine, R, Ganeles, J, Kan, J, Fava, P Sept. 2018 Compendium Vol 39, Number 8 pages 522-529

Careful with two adjacent implants in the Esthetic Zone

- Especially in the 6,7 or 7,8 or or 9,10 or 10,11 positions. Can have less trouble with positions 8,9 but it is often easier to have one or both as a pontic(s) in the case from 6 -11 or every other as a Tooth/Implant thereby maintaining better support for interproximal papillae relationship.

Toronto Study*

In summary, 4 – 6 years after endodontic initial treatment, 86% of teeth healed, and 95% remained asymptomatic and functional. Addition of Phase 4 of the Toronto Study did not identify additional significant outcome predictors to those identified in Phases 1–3.

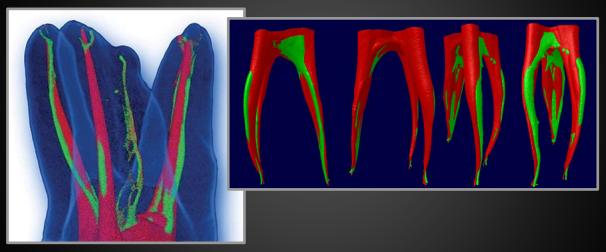
- Teeth retreated without PAP = healing rate of 94%
- Teeth retreated with PAP = healing rate of 80%

*Treatment Outcome in Endodontics: The Toronto Study—Phase 4 JOE - Volume 34, Number 3, March 2008

RCT: Re-treatment all things considered:

- Without PAP = 89% - 95% T Study = 90%
- With PAP = 69% - 85% T Study = 80%

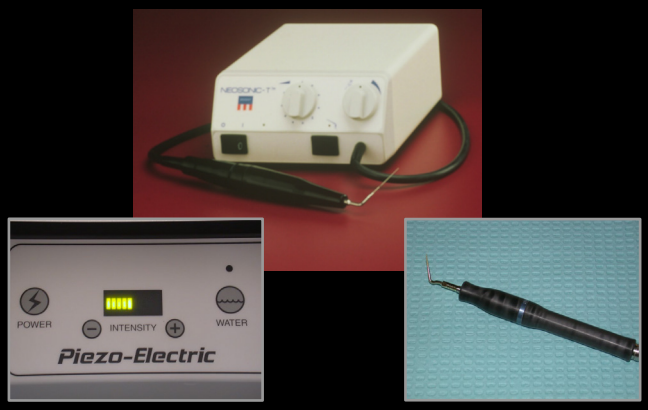
Ove Peters studies: untouched canal anatomy spaces , depicted here in green, following instrumentation, may harbor bacteria that can lead to persistent apical periodontitis



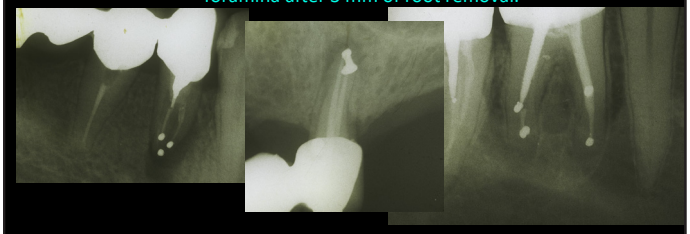
Apical Surgery: Success

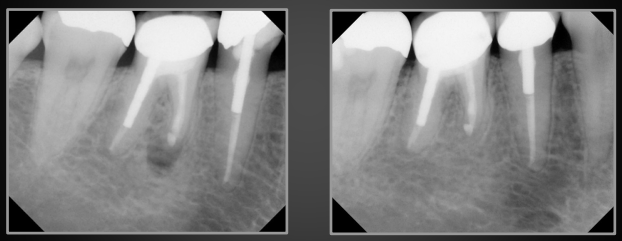
- Success rate dramatically improved with the use of: -
  Ultrasonic Retropreparation, -
  MTA fill and use of -
  Magnification now 94% - 98%
- Setzer FC, Shah S, Kohli M. J of Endo 2010;36:1757-1765

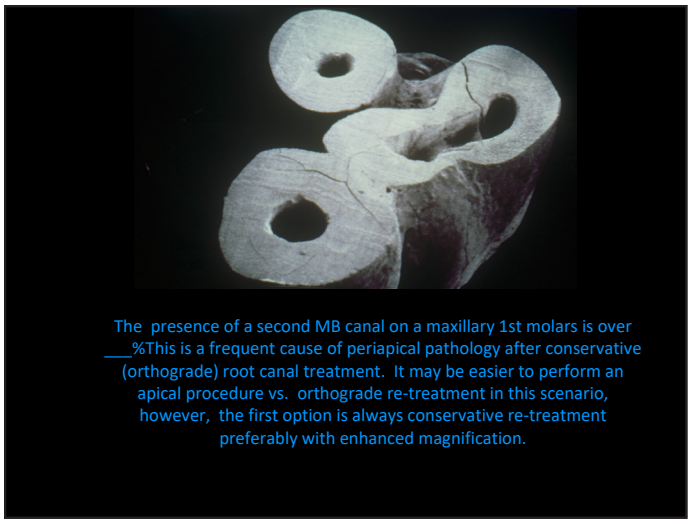
1997 - Present
Ultrasonic Retro Preparation



Enhanced magnification, used to achieve better results, along with ultrasonic retro-preparation can identify accessory apical foramina after 3 mm of root removal.

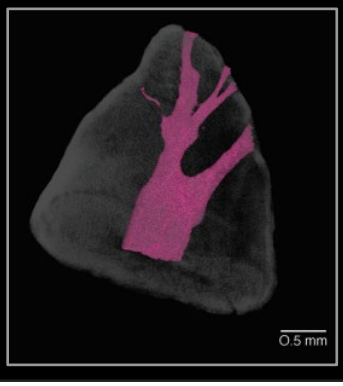


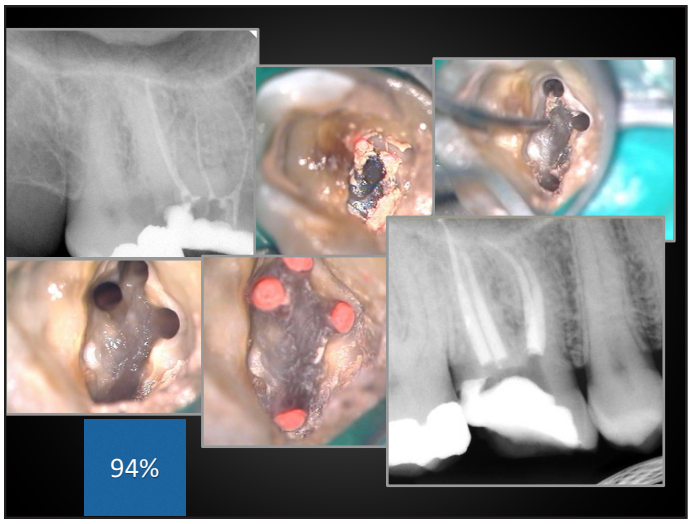


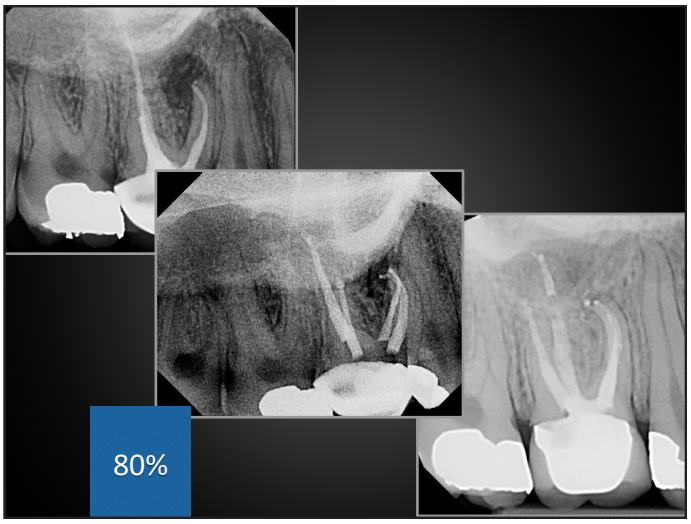


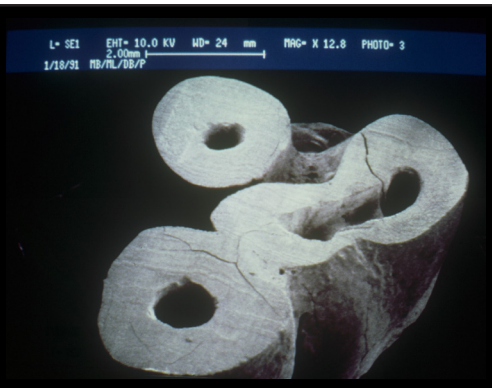
The presence of a second MB canal on a maxillary 1st molars is over ___%This is a frequent cause of periapical pathology after conservative (orthograde) root canal treatment. It may be easier to perform an apical procedure vs. orthograde re-treatment in this scenario, however, the first option is always conservative re-treatment preferably with enhanced magnification.

Apical Section of an MB Root of a Max Molar



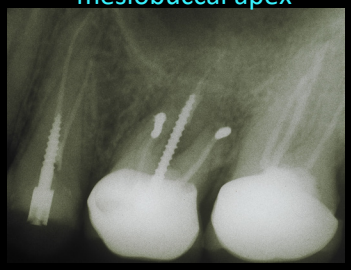


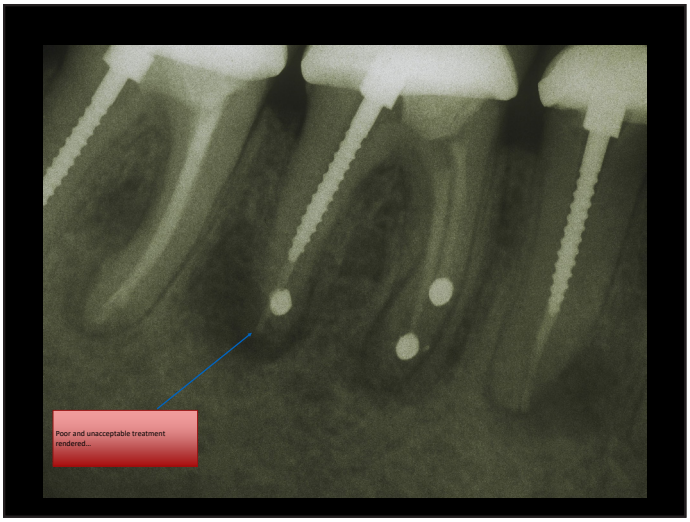




Operating Microscope at 12.8X

Note: the biconcavity of the retro fill at the mesiobuccal apex





Unsuccessful Apicoectomy

- Re-treat Apico
- Extraction (with bone graft)
- Hemi-section
- Root Resection
- Implant
- X No treatment

Three-year outcomes of Apicoectomy: Mining an insurance database

A total of 93,797 teeth in 77,636 patients could be traced after apicoectomy. The cumulative 3-year survival rate was 81.6%. Anterior teeth showed a significantly higher survival rate of 84.0% compared to premolars (80.4%) and molars (80.2%).

M. Raedel et al. / Journal of Dentistry 43 (2015) 1218–1222

Traditional Endodontic Surgery Versus Modern Technique: A 5-Year Controlled Clinical Trial

Silvia Tortorici, MD,* Paolo Difalco, DDS, PhD,* Luigi Caradonna, MD,* and Stefano Tete`, MDÞ

73% 90% 96%

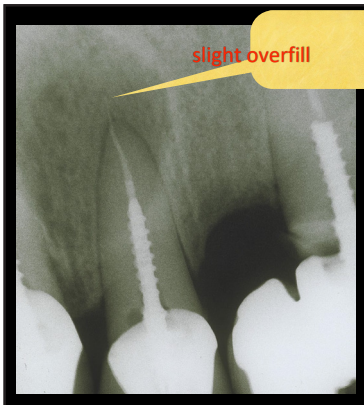
Traditional Apico / Apico & MTA / Apico & MTA & US & Mic

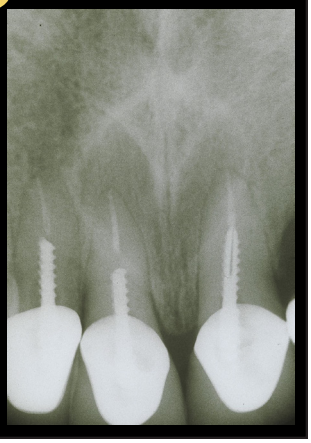
*Now "Use of GTR and CBCT"

The Journal of Craniofacial Surgery Vol. 25, Number 3, May 2014

Periapical Surgery:
When is it indicated and when is it not...

- Non-surgical conventional orthograde Root Canal Treatment (RCT) is the indicated treatment option for any periapical dental infection
- Periapical Surgery is an adjunct to RCT after a workup and treatment plan indicates periapical surgery is recommended to maintain the tooth in question.



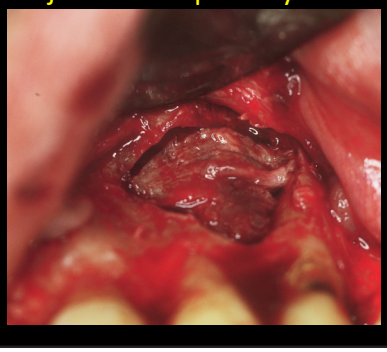


Periapical area or not?

Absolute Indication for Apical Surgery

Apicoectomy (and retrograde filling) is indicated in teeth where ***disassembly is not possible, coronal leakage is not present, and the disease process is confined to the apex of a periodontally non compromised tooth***.

Biopsy indicated with a medical history indicating a possible metastatic lesion to the jaw from a primary tumor...



Findings for PAP

Sullivan M, Gallagher G, JADA: 2016, August

- Periapical Granuloma 60.0%
- Radicular Cyst 36.7%
- Odontogenic Keratocyst 1.8% (KCOT)
- Fibro Osseous Lesion .9%
- Periapical Fibrous Scar .27%
- Ameloblastoma .03%

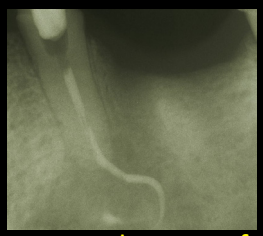
Relative Indications for peripaical surgery:

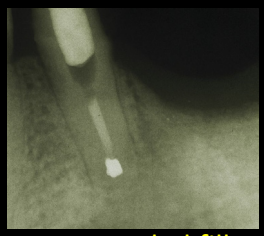
- Grossly overfilled canals
- Broken instruments protruding through apex

"How we say something is as important as what we say"

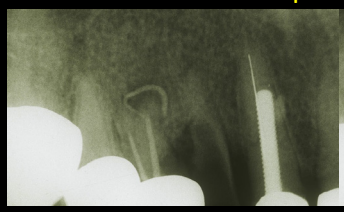
Grossly overfilled canals = Extended root canal

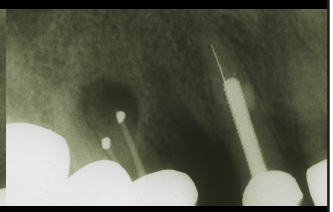
Broken files = Separated instrument

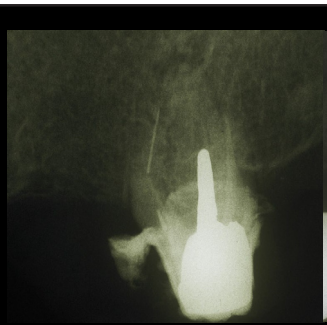


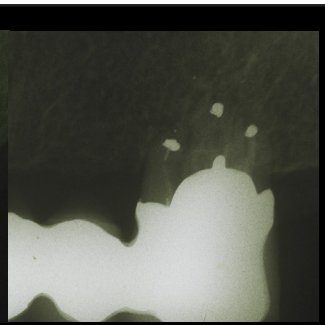


Pre and Post op for overextended fills







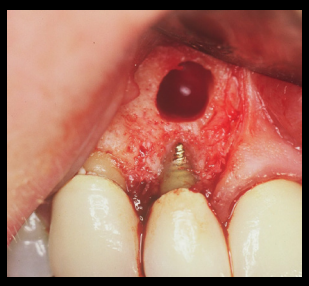


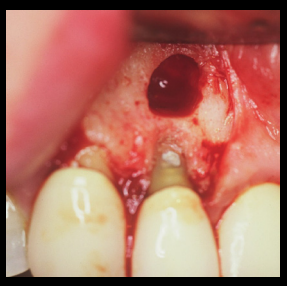
Symptomatic "separated instrument" through apex. Note: other roots with pathology, all treated and resolved. Once osseous healing was achieved the tooth was used as a terminal abutment.

Relative Indications for peripaical surgery:

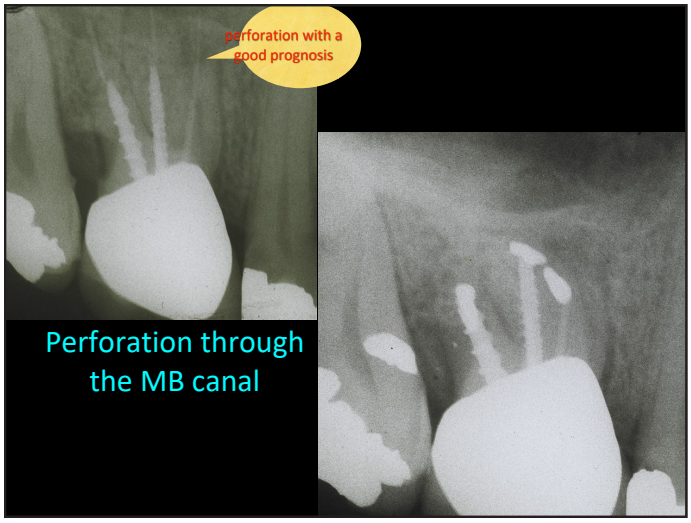
-Perforation through the root
-Calcified canal with increasing PAP

Most perforations occur with maxillary laterals and mesial roots of maxillary and mandibular 1st molars.





Note: prognosis is poor with the above and good to excellent with molar perforations at an apical curvature (except if the perforation is located in the molar furcation or floor of the chamber)

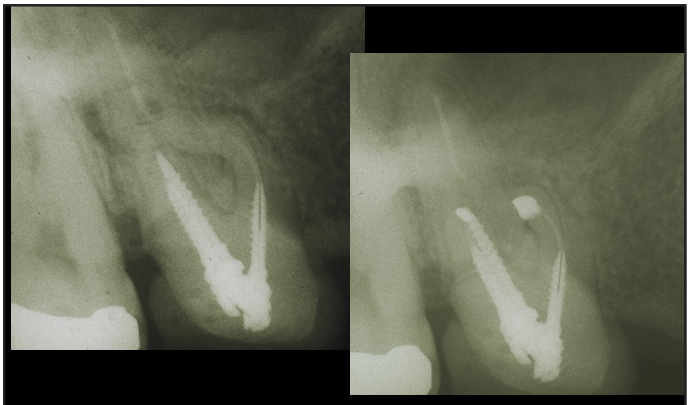


Perforation through the MB canal

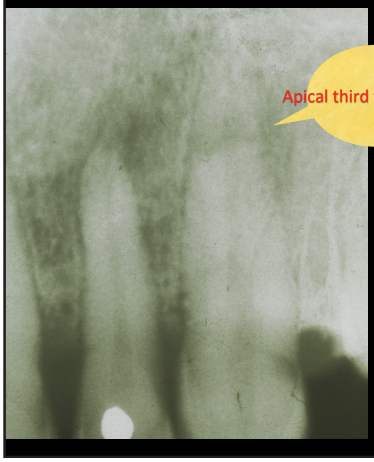
Relative indications continued:

-Severely curved root with a non-negotiable canal and increasing PAP

-Traumatic fracture of apical 1/3 of root with increasing PAP



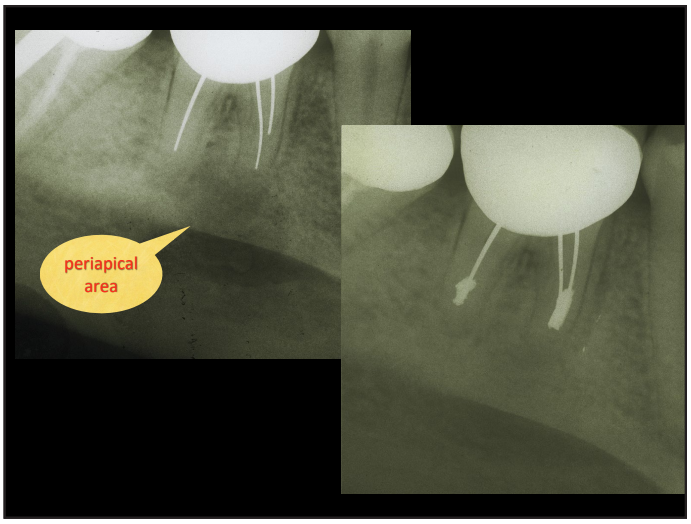
Severely curved root, with perforation and increasing PAP



This type fracture, if limited to this location, has a good prognosis. Conservative RCT can be performed, then followed up with apical surgery to remove the fractured apex

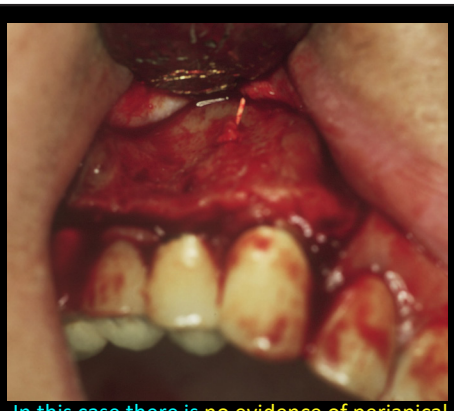
Relative indications continued....

-Silver points wedged firmly within canals, when ultrasonic instrumentation is not able to dislodge the points.

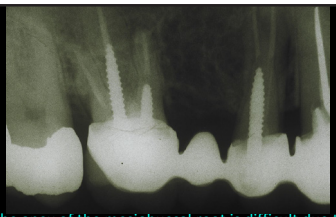


Relative Indications

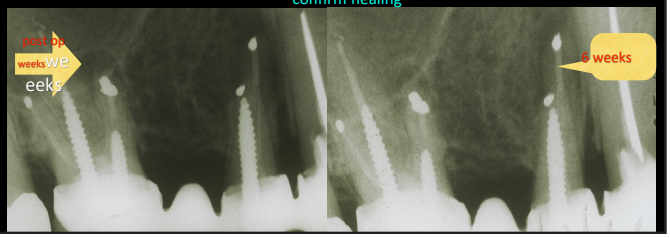
-When an overfill exists on a bucally fenestrated canal



In this case there is no evidence of periapical pathology on X-rays **as the problem is extrabony**, here the extended point can be palpated and visualized through the mucosa



Access to the apex of the mesiobuccal root is difficult due to permanently cemented post and bridge on #3. There is also pathology lateral to the root on #5. Apical surgery performed showing post op and 6 week radiograph to confirm healing

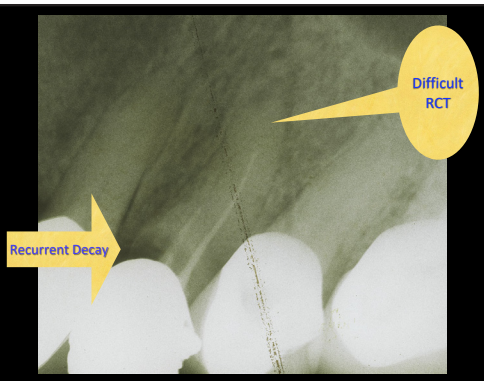


Check list for referral or performing Apical Surgery:

- Get a periapical radiograph at more than one angle to verify adequate condensation and to rule out a possible fracture.
- Verify that the adjacent teeth have an intact lamina dura, are pulp tested and are not involved in any pathology that could be mistaken for the tooth in question

Check list for referral or performing Apical Surgery continued...

- Check for traumatic occlusion as a source of pain
- Probe the tooth in question and the adjacent teeth for perio-endo lesions or perio breakdown not evident radiographically (mesio-palatal of maxillary molars and the lingual of mandibular molars are frequently problem areas that show evidence of small sinus tracts)
- Check all restorative margins for recurrent decay



Although an apical procedure can be performed, it should first be determined if the tooth is restorable, considering the recurrent decay at the crown margin. Re-treatment would be the first option if the tooth is restorable.

As a general rule---If the endodontic fill is less than ideal then the result of the periapical surgery will most likely be less than idea.

When is periapical surgery indicated?

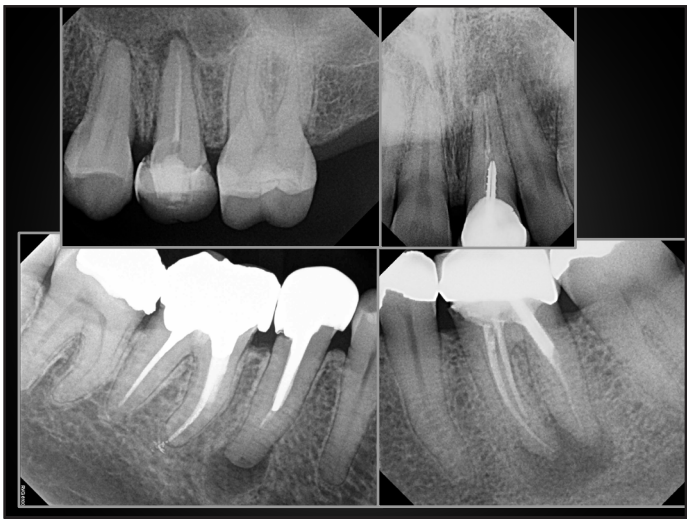
- Non-surgical RCT, if possible, is very effective for the re-treatment of endodontic failures (technical, procedural, pain, swelling, fistula)
  - High success rates with non-surgical tx

……Periapical surgery is not indicated for endodontic failures when orthograde treatment is possible

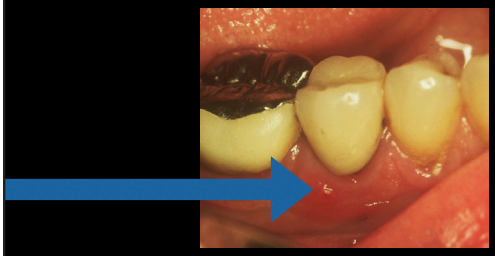
*Sjren, J. Endo (1990)

Apical Surgery should not be used to correct inadequate or poor RCT. Nor should extraction and replacement with an implant be the only option for a failed RCT.

Apical Surgery should be an adjunct to Endodontic procedures performed as best as possible.



Causes for a Sinus Tract (Fistula) in Attached/Keratinized Gingiva

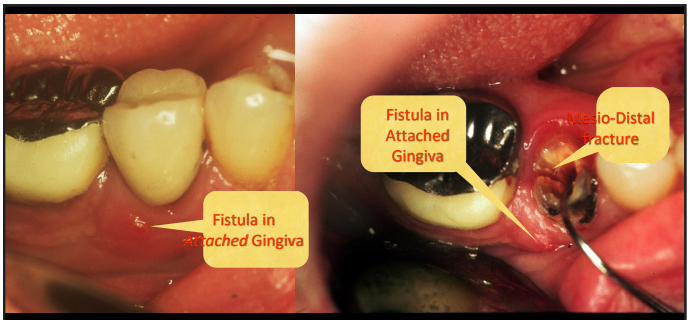


1) Coronal or high root fracture

2) Cement in the gingival sulcus

3) Tri/Bifurcation Perio etiology

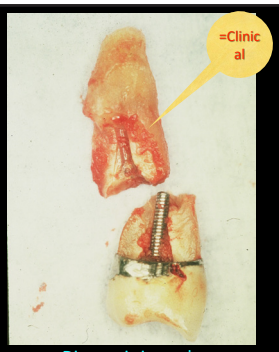
4) Periodontal Infection



The Fistula (Sinus Tract) Rule

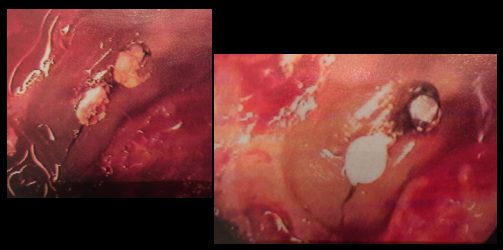
In general the more coronal a fistula (SinusTract) is located the worse the prognosis. The more apical a fistula is located, the better the prognosis. A fistula in the keratinized gingiva usually indicates a coronal or high root fracture, cement in the gingival sulcus, a trifurcation/bifurcation pathology etiology or periodontal infection

Vertical oblique fracture

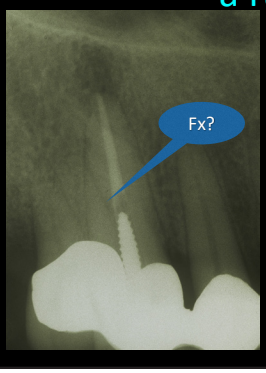


Diagnosis is made:
from the appearance of a lateral area adjacent to the post and the appearance of a fistula that is usually midroot or coronal (rarely apical) - Gutta Percha point

Fracture identified only during surgery approach

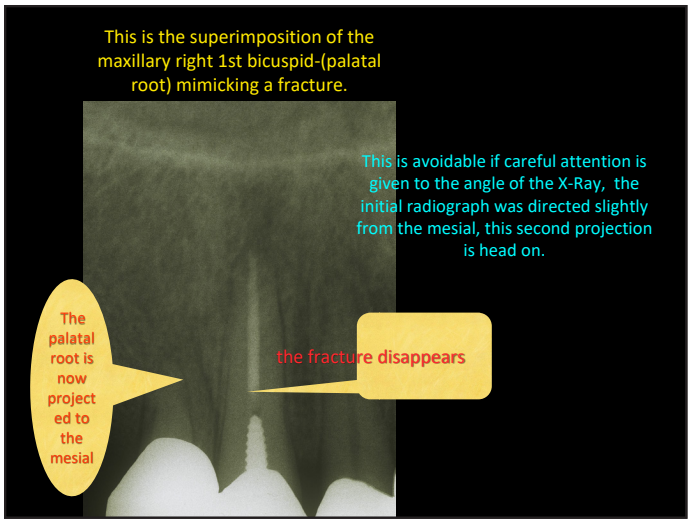


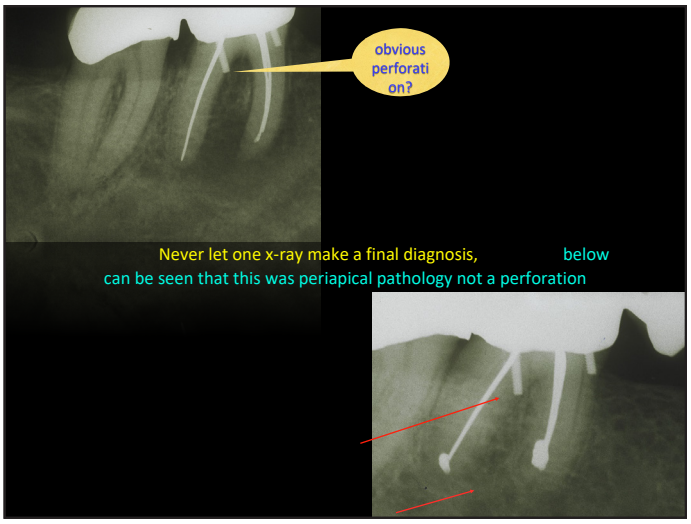
A misdiagnosis can easily be made due to the angulation of a radiograph



Obvious fracture from the post then apically and distally, on the distal aspect of the maxillary right cuspid, #6....

Treatment plan would be removal of the tooth, and removal of #5 and placement of at least one implant... True or False?

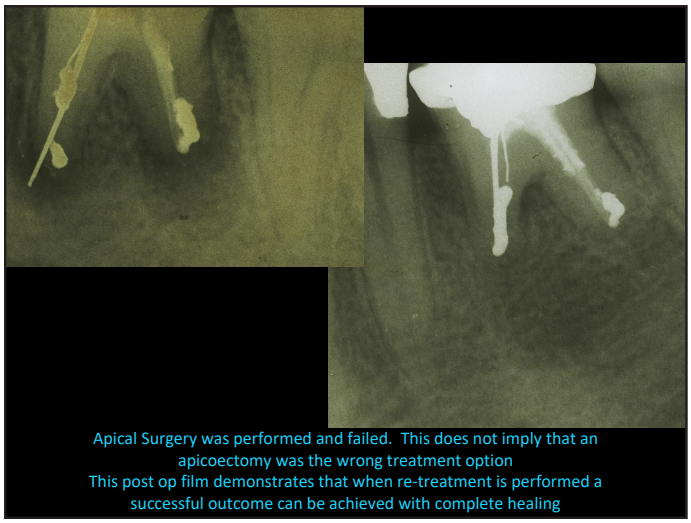




Re-treatment of a failed RCT should be suggested as a treatment option more frequently, as it is frequently successful Toronto Study = 80% - 94% healing rate with functioning rate higher than that.

Re-treatment of a failed apicoectomy is rarely offered as an option, with the patient often being given the frequent option of extraction and replacement with an implant and FPD

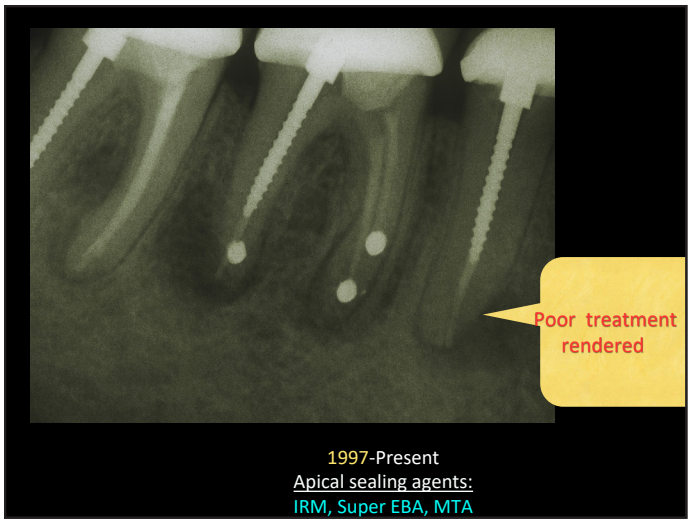
In some cases, maintaining the tooth may be the *best treatment option*



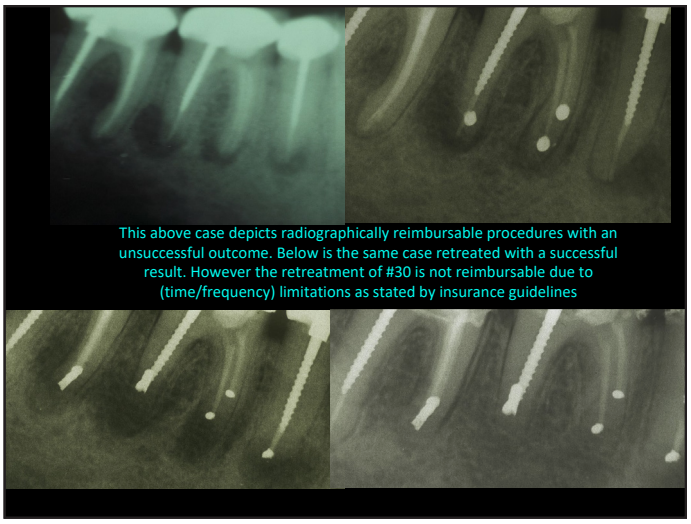
Latest Retrograde Material

- RRM (Root Repair Material) and
- RRP (Root Repair Putty)
- This is a bioceramic material composed of:

zirconium oxide, calcium silicates, calcium phosphate monobasic, calcium hydroxide, filler, and thickening agents.



1997-Present
Apical sealing agents:
IRM, Super EBA, MTA



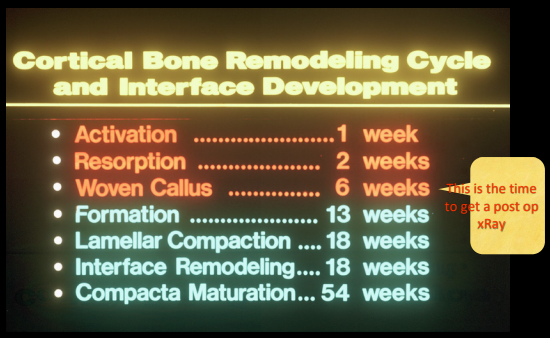
This above case depicts radiographically reimbursable procedures with an unsuccessful outcome. Below is the same case retreated with a successful result. However the retreatment of #30 is not reimbursable due to (time/frequency) limitations as stated by insurance guidelines

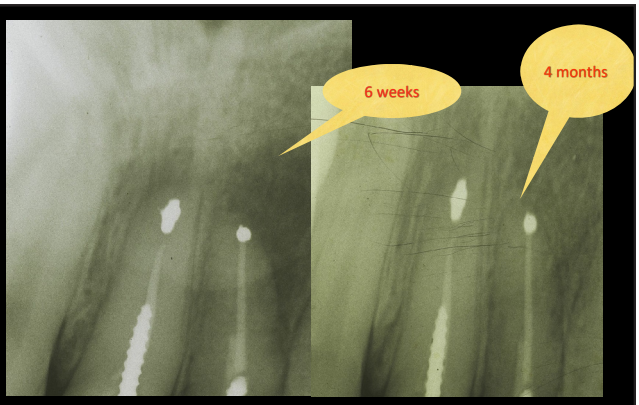
The 6 week follow up X-Ray....

After an apicoectomy is performed the follow up care is the most critical determining factor to allow for long term success:
By taking a post op and *6 week post op* radiograph you can see if osseous healing is occurring.

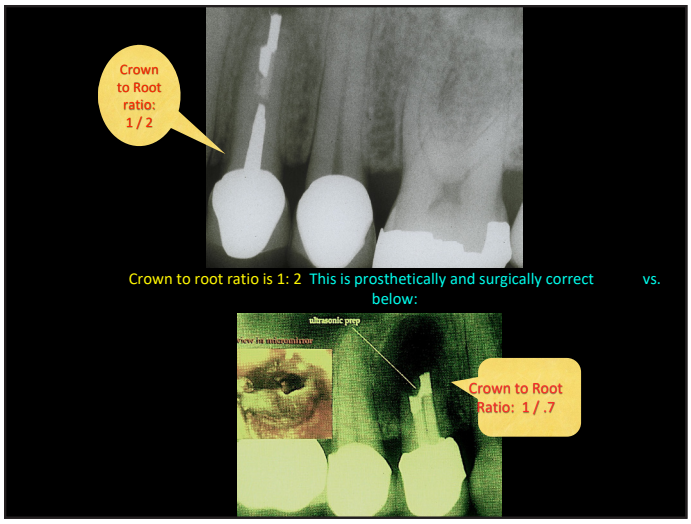
Then if osteoid (woven) bone is not seen a decision is made to either remove or retreat thereby negating the eventual failure
that would likely occur.

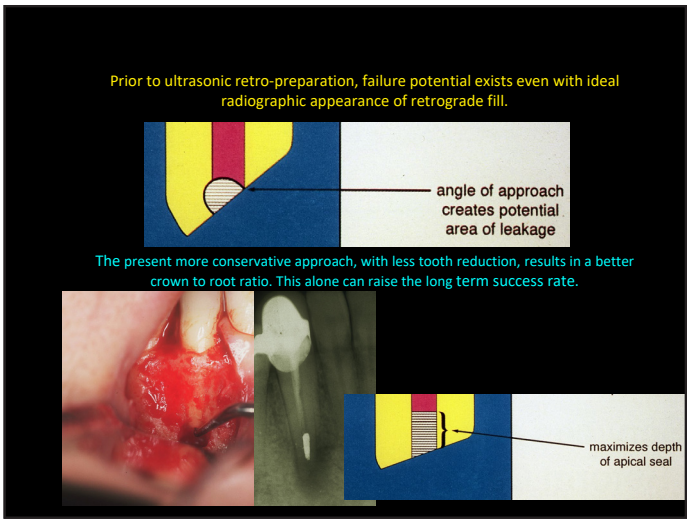
Dr. Eugene Roberts: Orthodontist

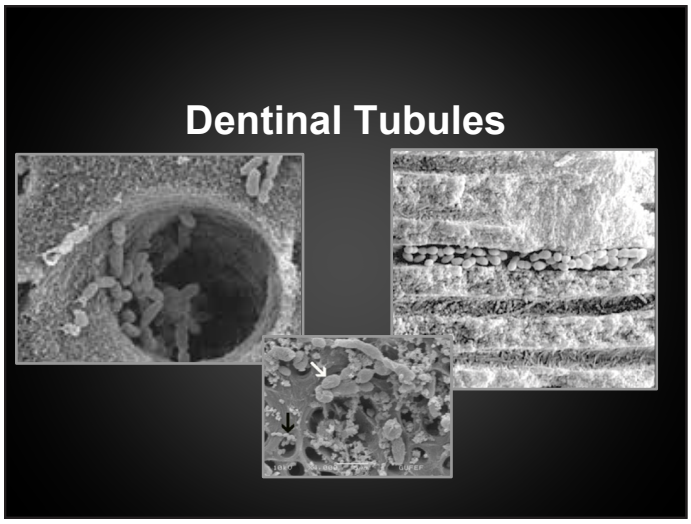


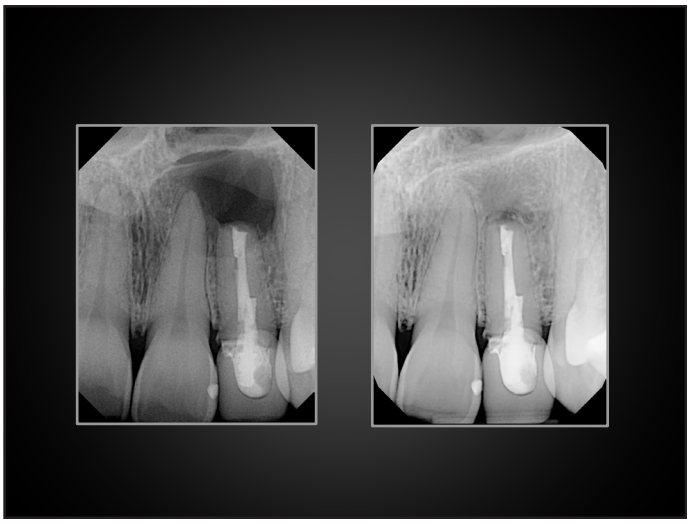


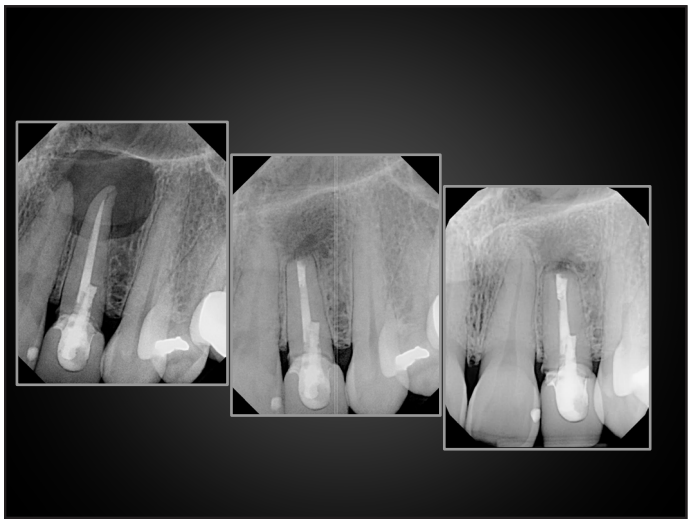
Once initial woven bone formation is confirmed, complete healing is almost certain to occur — at 4 months (18 weeks) you have Lamellar Compaction and Interface Remodeling

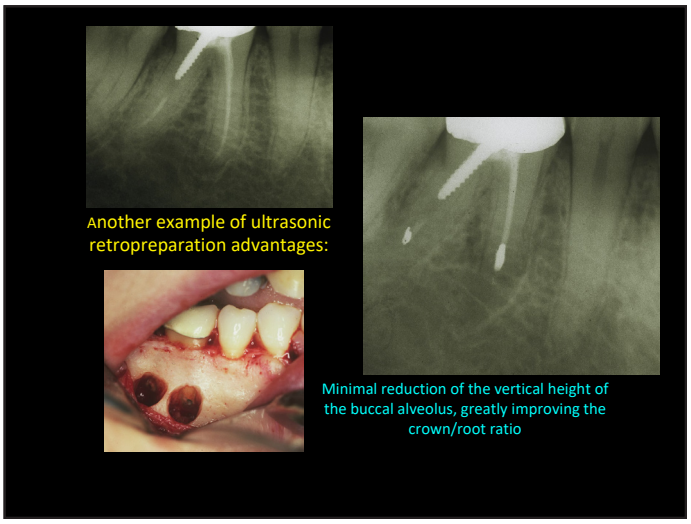

Crown to Root ratio: 1 / 2
Crown to root ratio is 1: 2 This is prosthetically and surgically correct vs. below:
ultrasonic prep
Crown to Root Ratio: 1 / .7

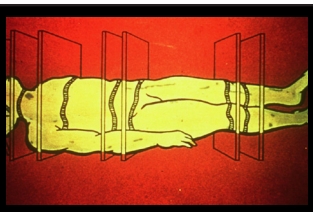

Prior to ultrasonic retro-preparation, failure potential exists even with ideal radiographic appearance of retrograde fill.
angle of approach creates potential area of leakage
The present more conservative approach, with less tooth reduction, results in a better crown to root ratio. This alone can raise the long term success rate.
maximizes depth of apical seal


Dentinal Tubules

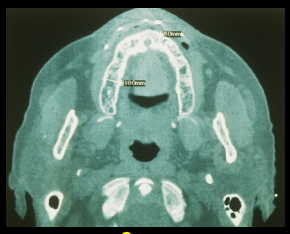


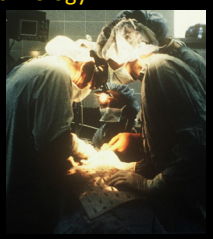



Another example of ultrasonic retropreparation advantages:
Minimal reduction of the vertical height of the buccal alveolus, greatly improving the crown/root ratio

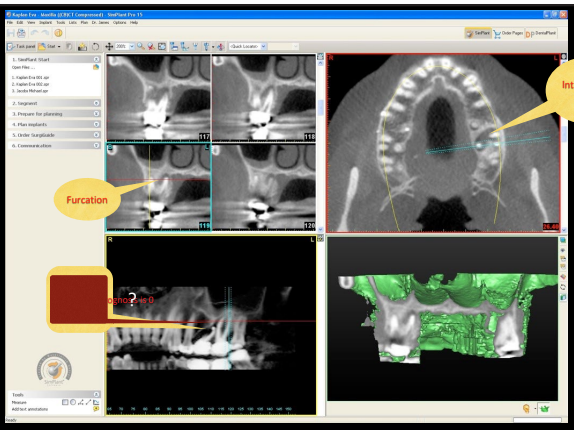


Use of CAT Scan Technology

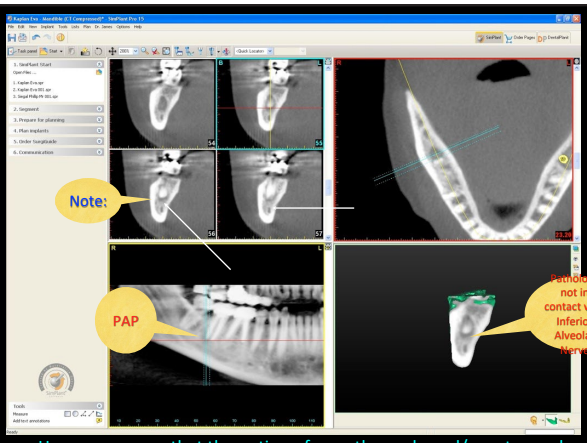




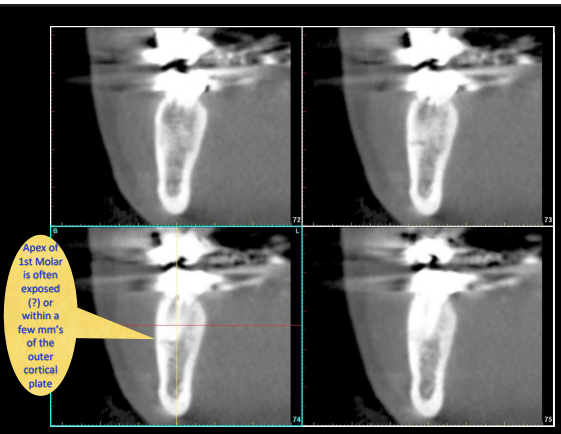
- Cone Beam Computerized Tomography (CBCT)



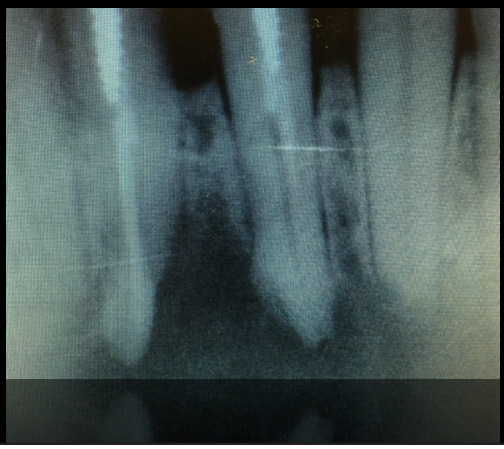
Today with CBCT analysis the risk/benefit prior to surgery clearly shows that periapical surgery is contraindicated

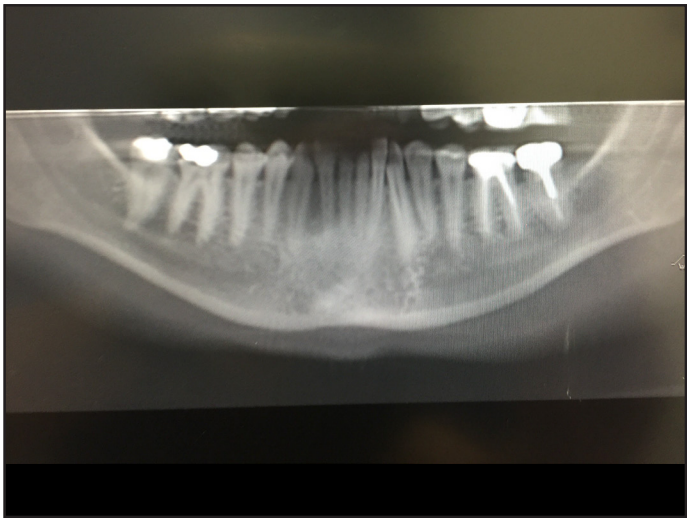


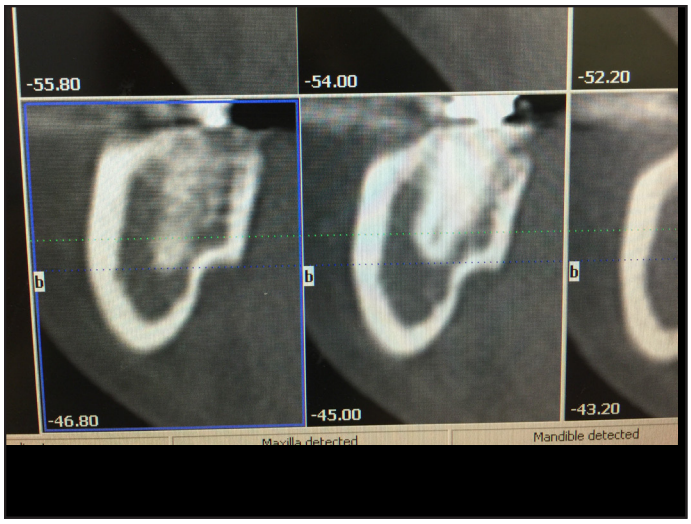
Here we can see that the option of an orthograde and/or retrograde approach is acceptable, AND that the surgical approach has minimal risk of post op paresthesia



The difference in width for the buccal plate at the 2nd Molar vs. the 1st Molar position is both clinically and radiographically significent



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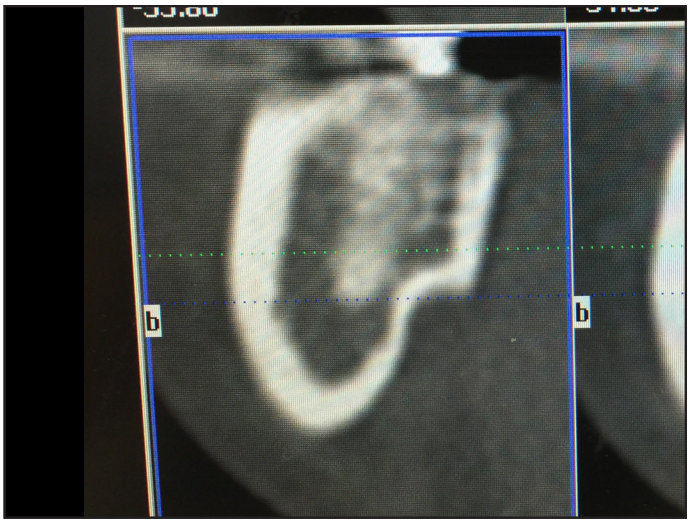
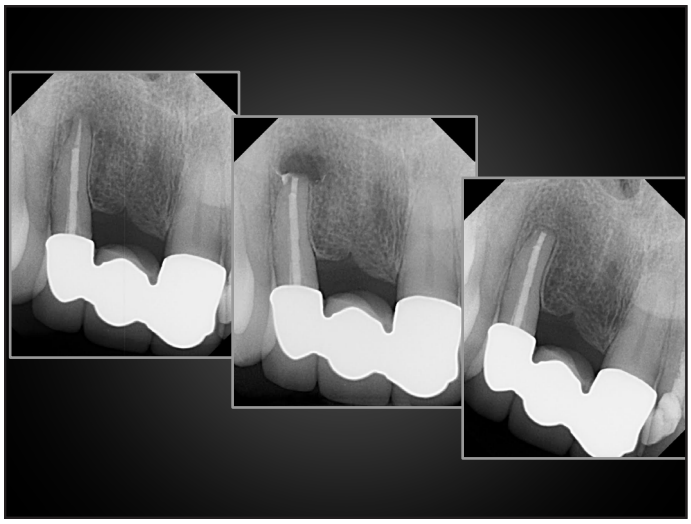
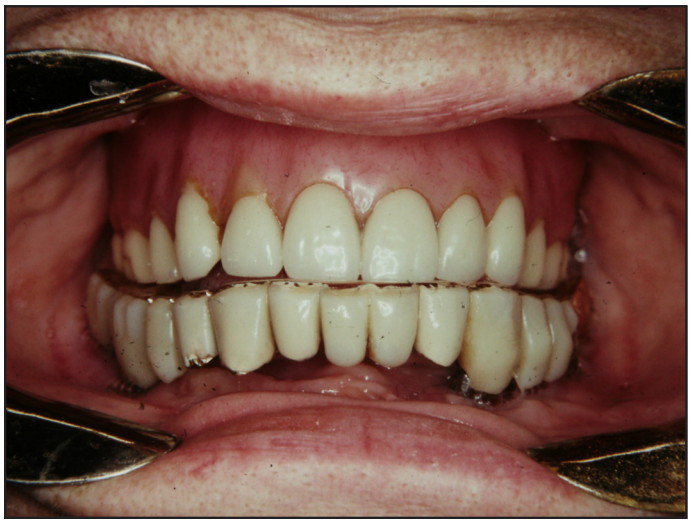
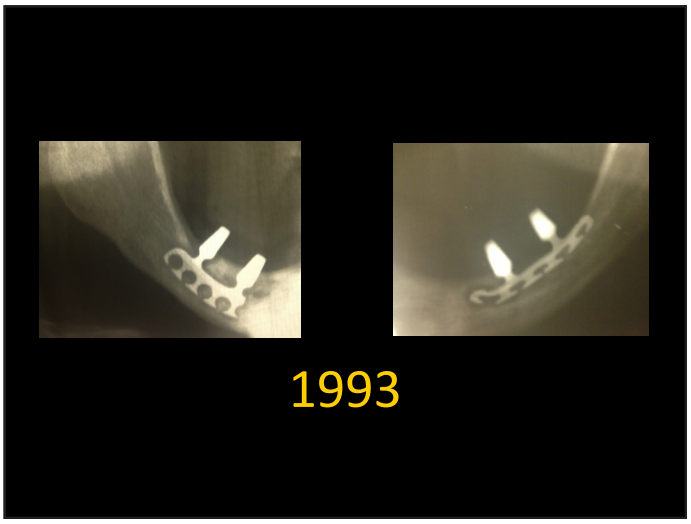





Treatment Option: Removal of failing Implants where the treatment has significant surgical risks..
1992

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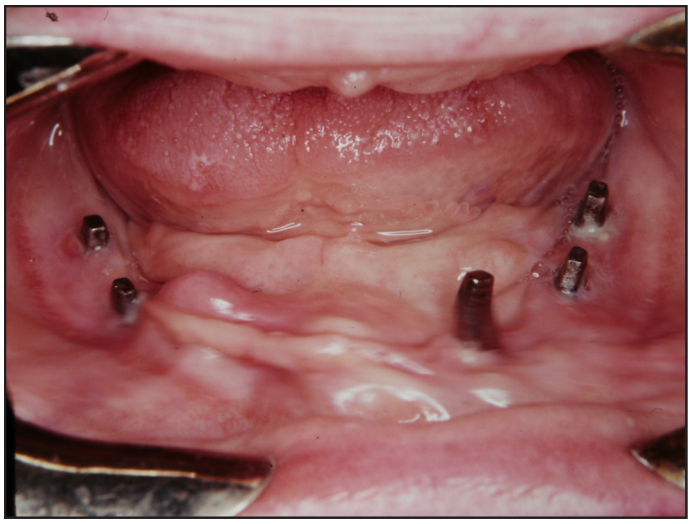

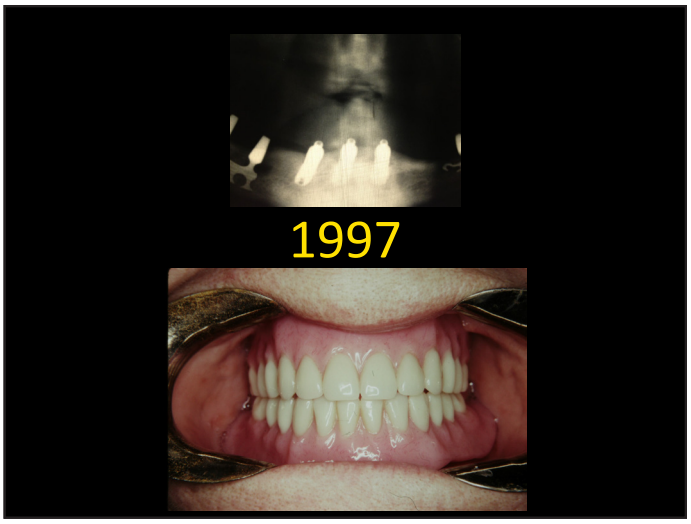
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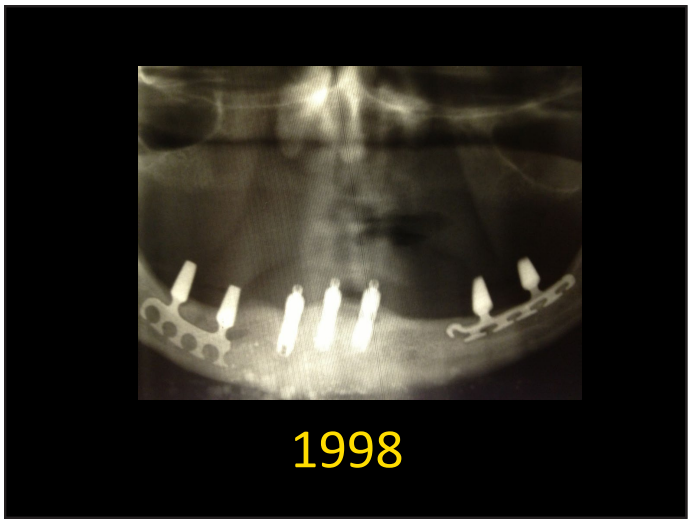
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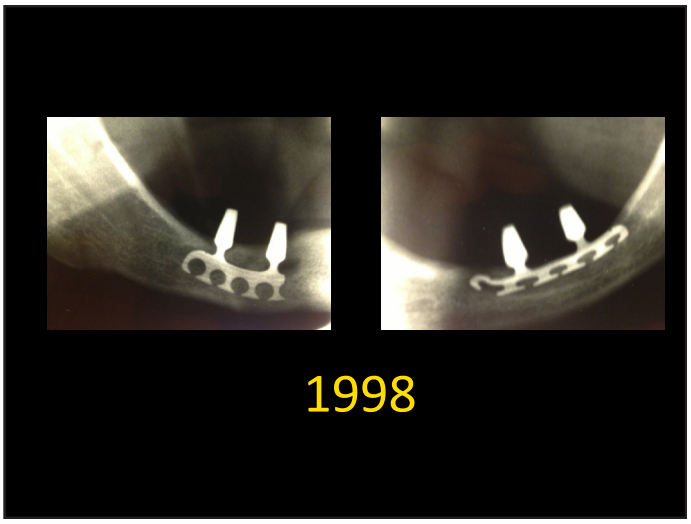
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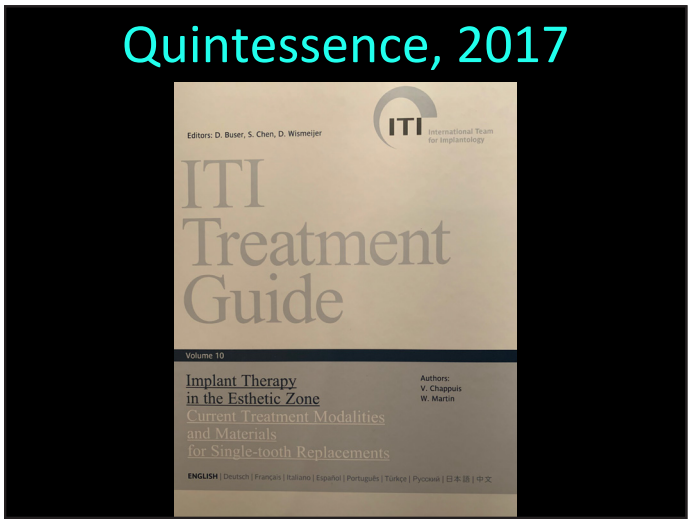
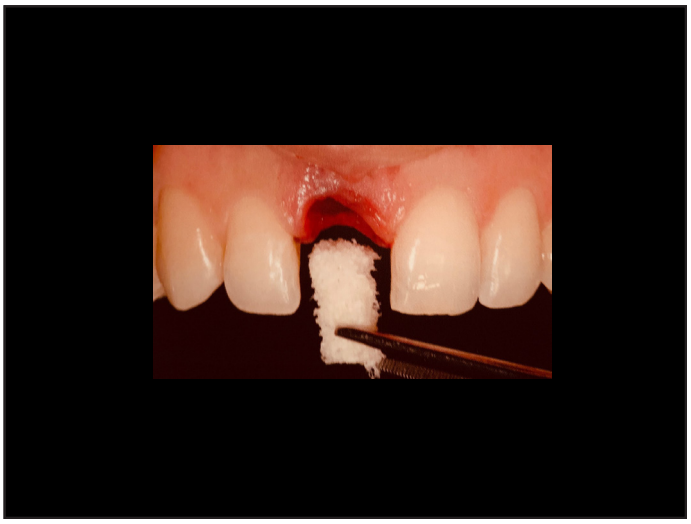
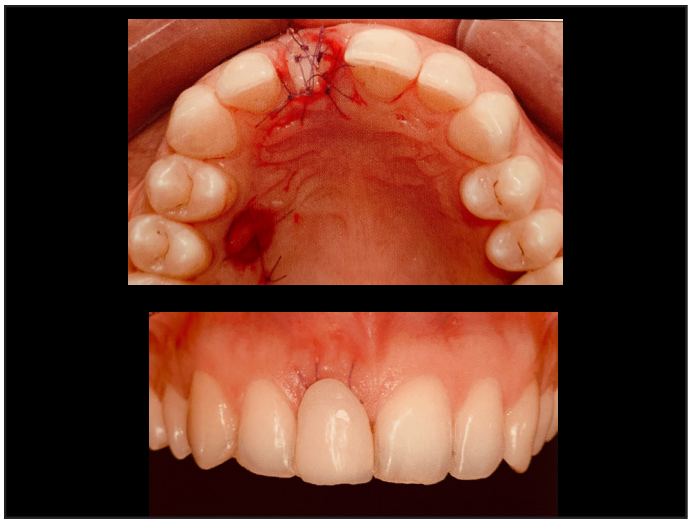
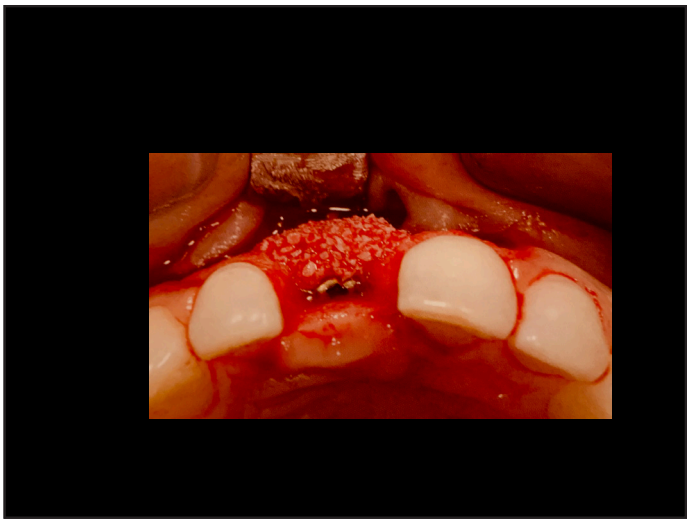
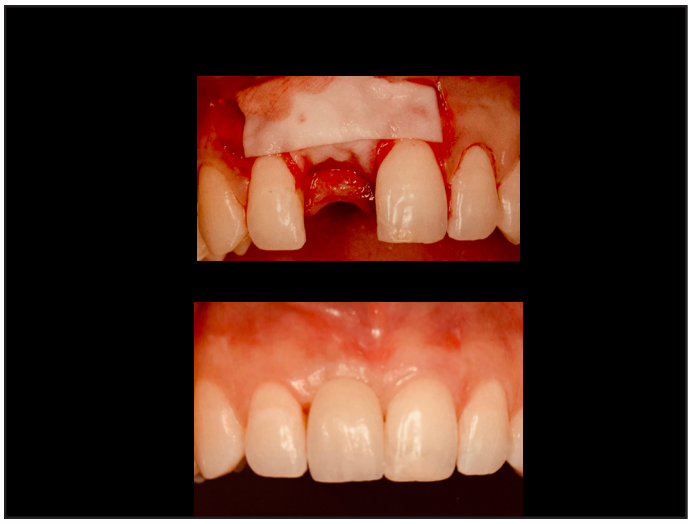
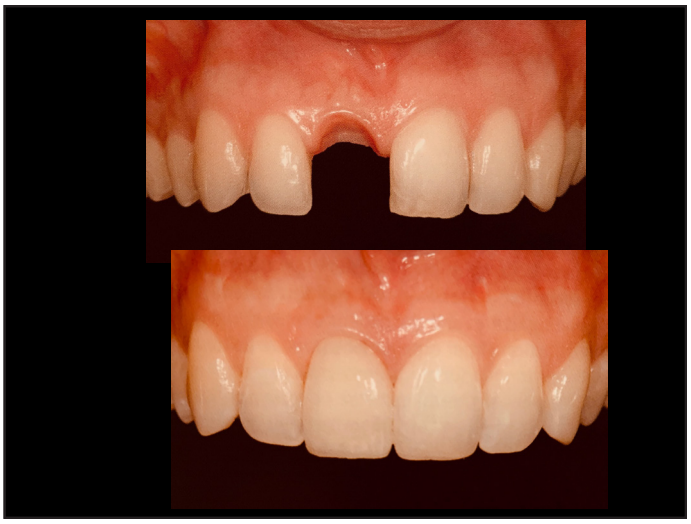

Quintessence, 2017
Editors: D. Buser, S. Chen, D. Wismeijer
ITI
International Team for Implantology
ITI Treatment Guide
Volume 10
Implant Therapy in the Esthetic Zone
Current Treatment Modalities and Materials for Single-tooth Replacements
Authors: V. Chappuis W. Martin
ENGLISH | Deutsch | Français | Italiano | Español | Português | Türkçe | Русский | 日本語 | 中文

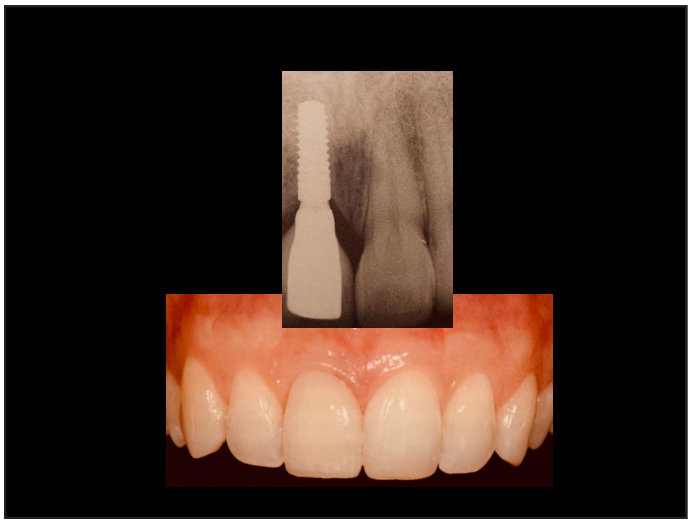


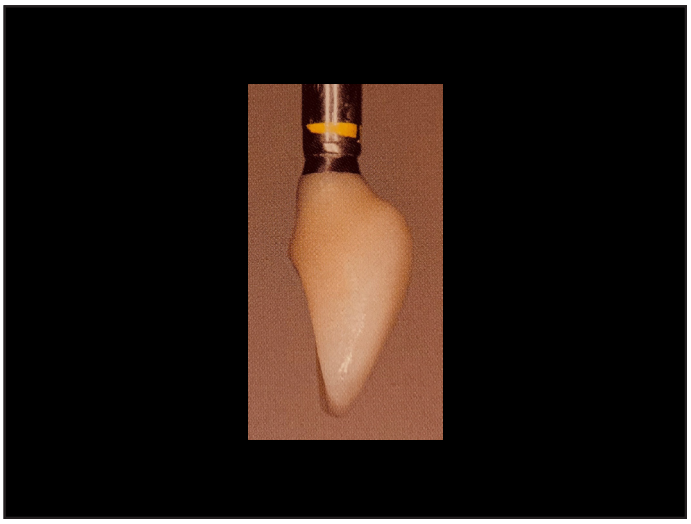


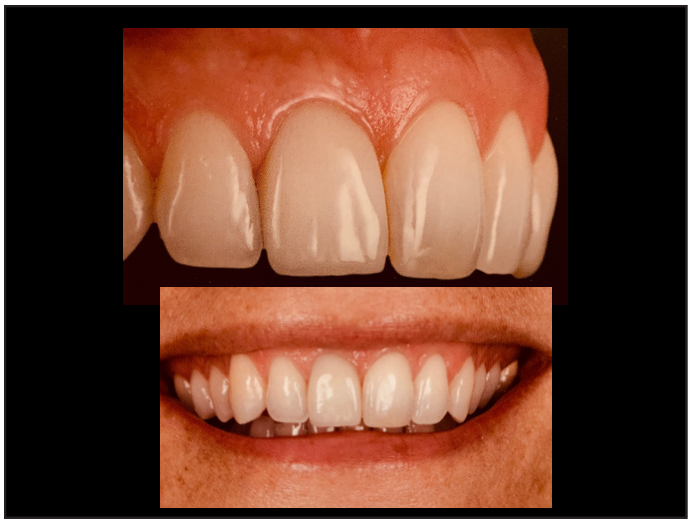






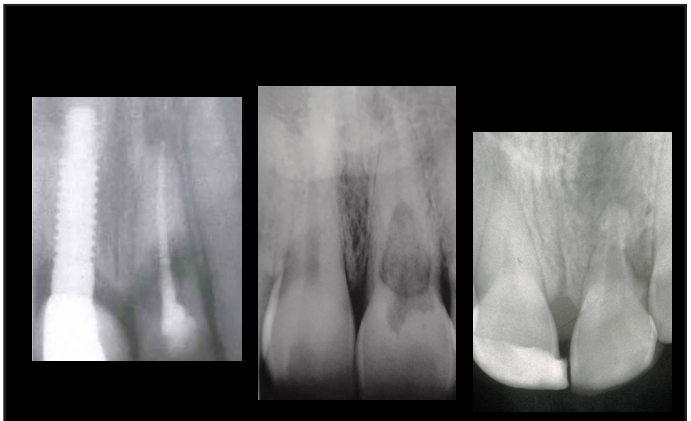


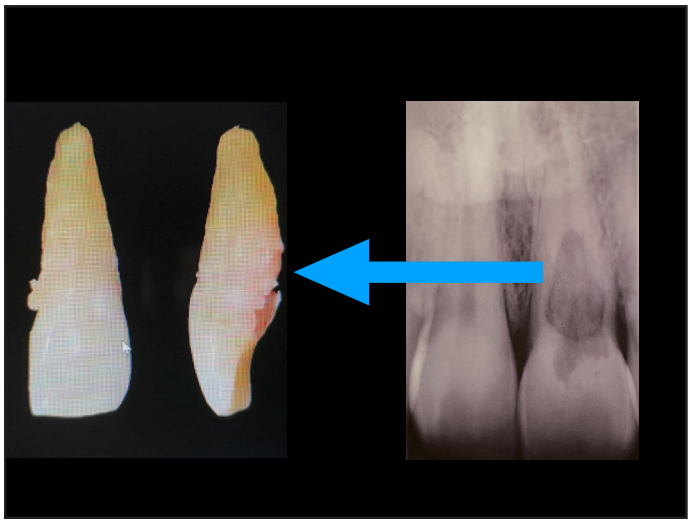




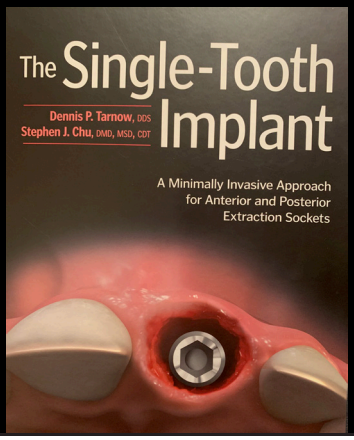
Alternative Approach

Indications for Immediate Implant





Quintessence, 2020

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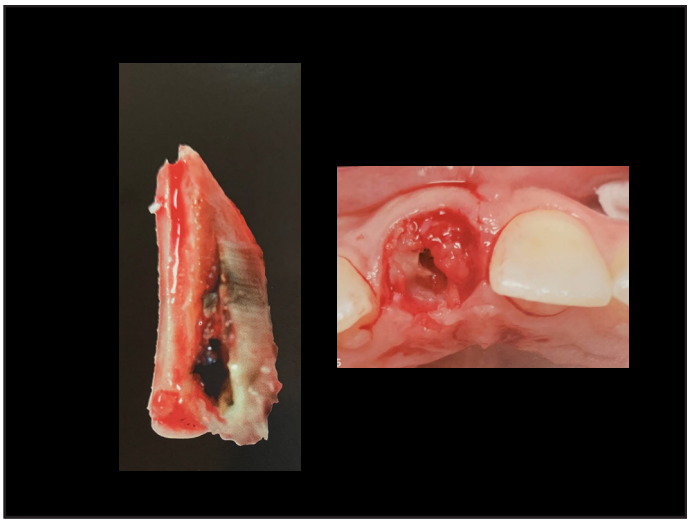

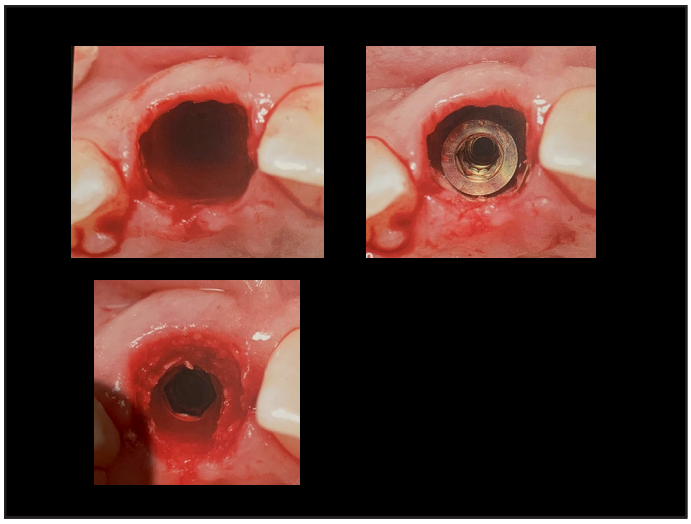

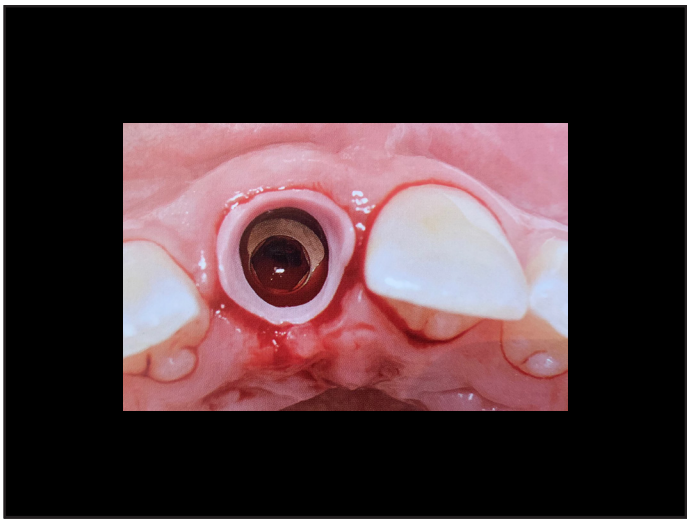

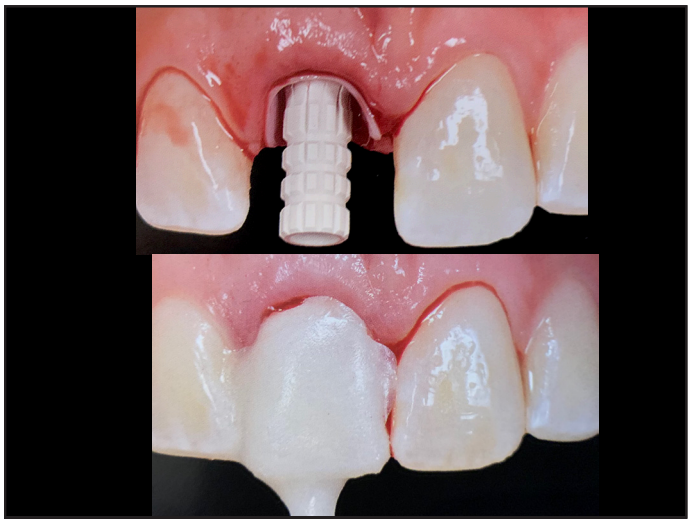

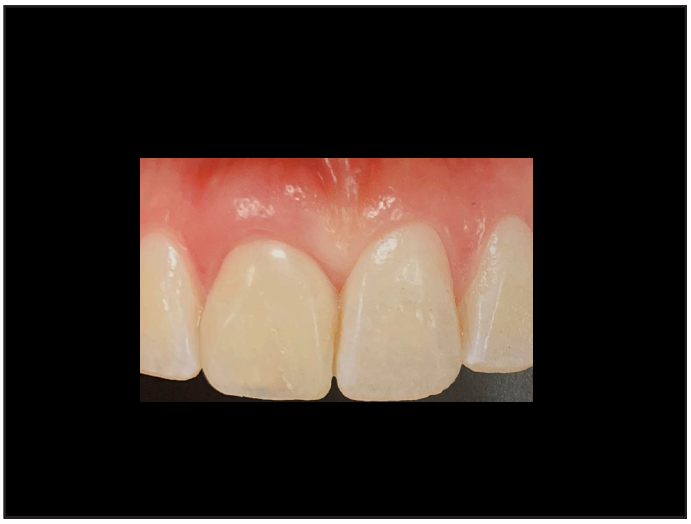


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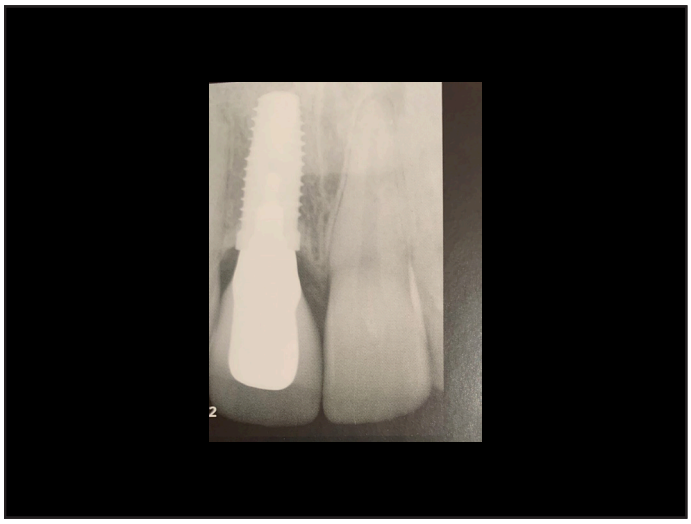
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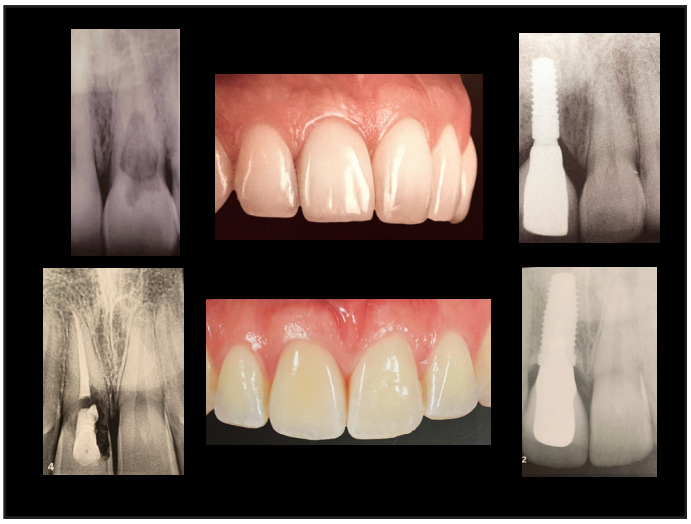
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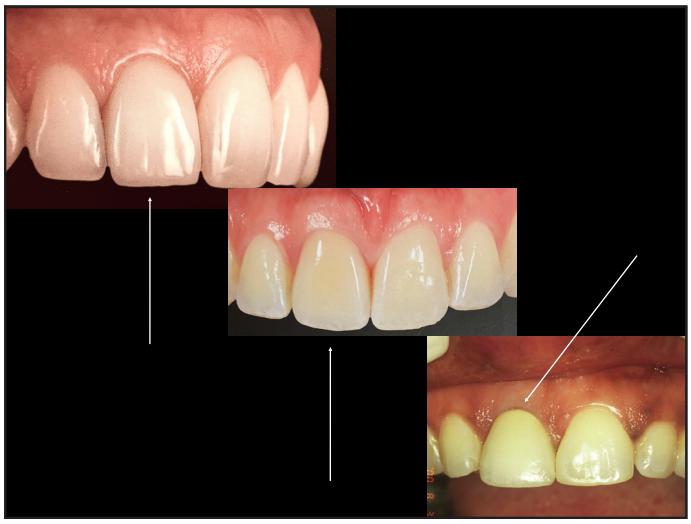
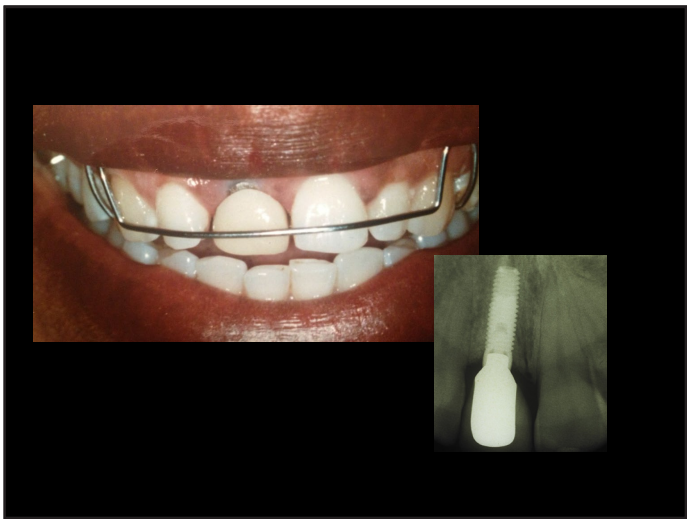
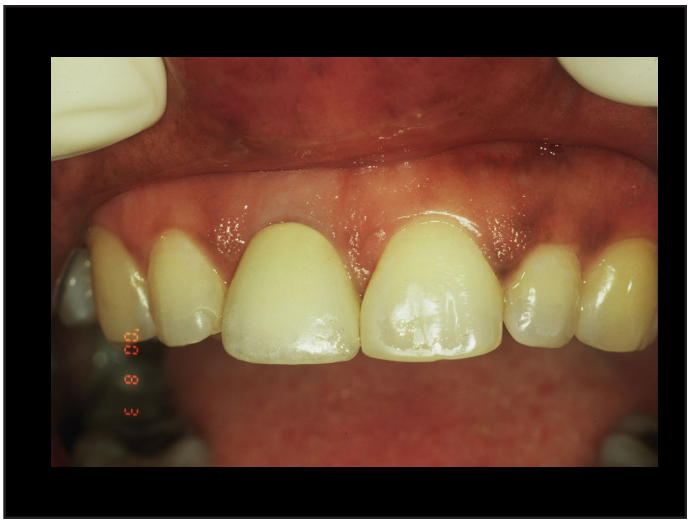


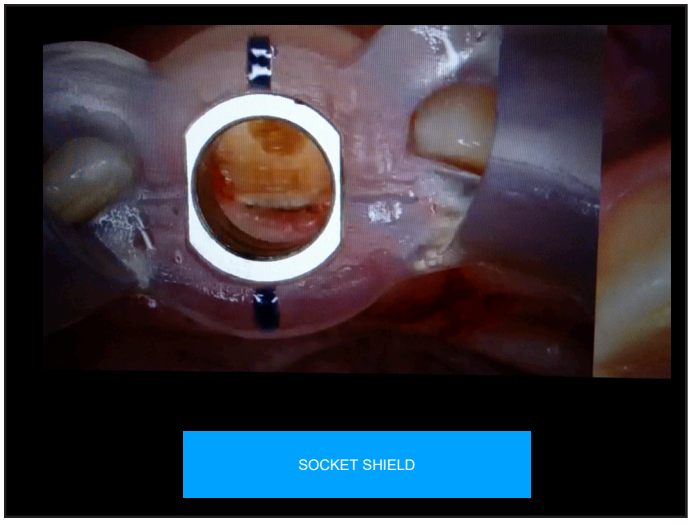


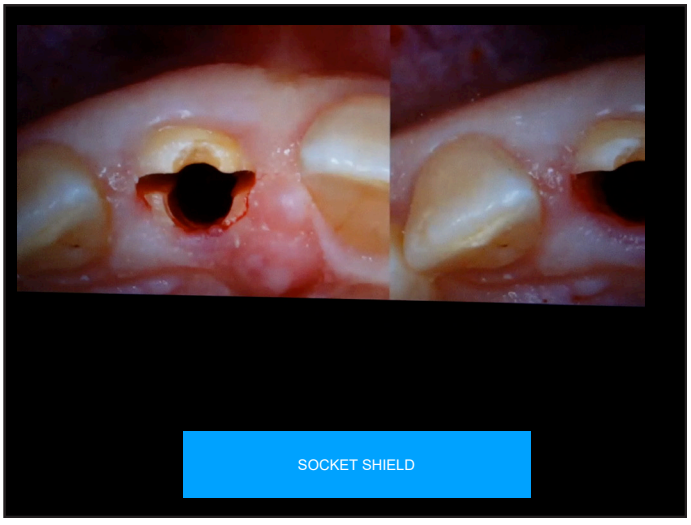


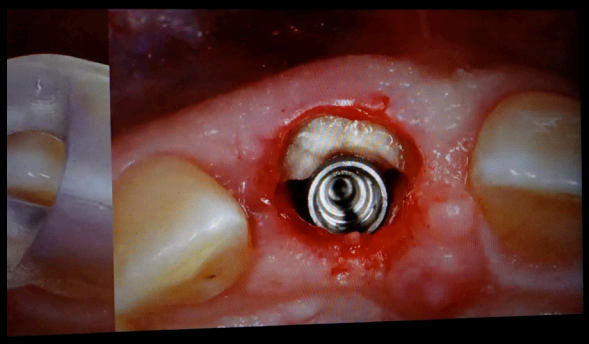
Immediate Placement of Implants:

- Double the bone loss with Thin Biotype vs. Thick Biotype (1.96mm vs. 1.18mm) - this is without bone grafting
- Ideally place a bone graft to fill in the gap! This is more important when placing implants in Thin Biotype
- Ideally perform a bio-conversion prior to implant placement with thin Biotype cases

N. Bittner, J.Da Silva, D.Tarnow. Alveolar Ridge dimensional change associated with implant position and tissue phenotype. Int J Oral Implantol 2019;12(4):469-480







SOCKET SHIELD

10 Ways to not be a "Killer of the Papilla"

- 1) Never put pressure against Papilla during transitional phases - no loading
- 2) Papilla sparing incisions at every stage:
  -Extraction and bone grafting placement
  -Soft Tissue Conversion or Expansion
  -Placement of the Implant
  -Exposure of the implant (if indicated) or if after submerged for Peri-implantitis repair

10 Ways to not be a "Killer of the Papilla"

- 3) Never place a suture over the papilla when repositioning after a FTF and avoid reflecting a FTF inclusive of a papilla which will involve an implant
- 4) Eversion of flap edges if a FTF must be used involving an implant papilla

10 Ways to not be a "Killer of the Papilla"

- 5) Establish a contact point consistent with the inter proximal level of bone
- 6) Convert Thin to Thick Biotype pre-op but if not able to - then use AOT (DA) along with PS.

10 Ways to not be a "Killer of the Papilla"

- 7) Use of PS and AOT (DA) especially with use of short implants in the esthetic zone.
- 8) Do not over-contour provisional abutments (unless you intentionally want to cause recession)

10 Ways to not be a "Killer of the Papilla"

- 9) Maintain a zone of at least 2 mm of KG around the implant
- 10) Place implants 3 mm apart but if you have two implants within 2 mm of each other - consider using only one and not the other, using one as a pontic space. If must use both: consider utilizing PS + AOT for both

10 Ways to not be a "Killer of the Papilla"

- 11) Consider using the PET, SST, RMT approach* when there is a high smile line and you have Thin Biotype (High Scalloped) and a High Smile Line
- 12) Bio-convert Thin to Thick with SCTG

The 10 year follow up is now showing excellent success rates but it is very technique sensitive

*97.3%

Warning: Adjacent implants in the Esthetic Zone

- Especially in the 6,7 or 7,8 or in 9,10 or 10,11 positions. Can have less trouble with positions 8,9 but it is often easier to have pontics in a case form 6 -11 as a Tooth - Implant….thereby maintaining better depth for interpromimal papillae relationship.

Success of Root Canal Treatment….

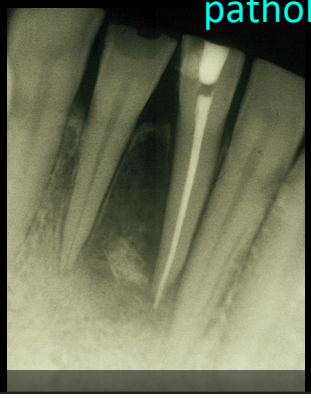
- ….is based not only on the quality of the root canal treatment but also on the
- "Quality of the Restorative Restoration"

Impact of the quality of coronal restoration versus the quality of root canal fillings on success of root canal treatment:
A systematic review and meta-analysis
Gillen BM, Looney SW, Gu LS, Loushine BA, Weller RN, Loushine RJ, Pashley DH, Tay FR. J Endod. 2011 Jul;37(7): 895-902.

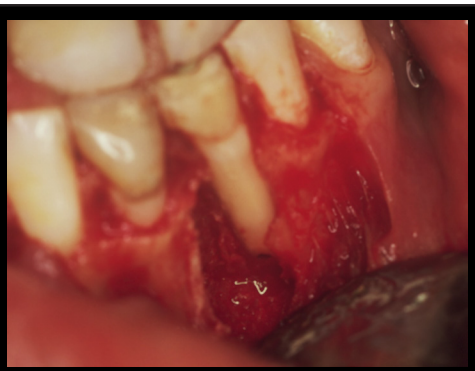
Survival rates of Endo and Single Tooth Implant…..

- Are superior to a FPD=
  Fixed Partial Denture (3 Unit Bridge)

Large interproximal pathology

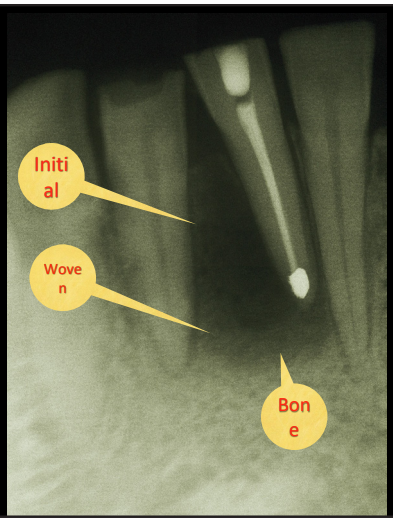


With displacement of the left central to the left lateral incisor
Note: extended RCT and overfill creating foreign body reaction.

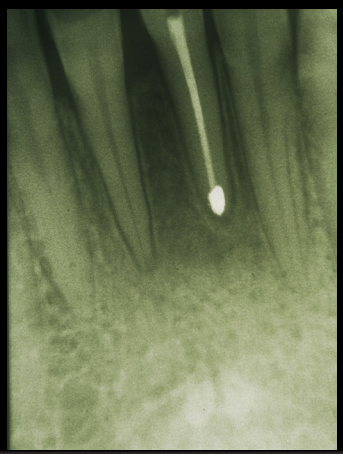


Full thickness flap (for diagnosis and treatment) shows complete apicomarginal defect as well as a loss of interproximal bone

Healing at 6 weeks showing:

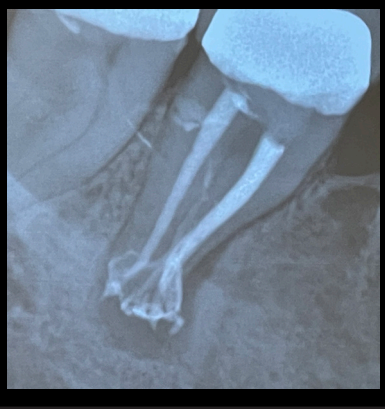


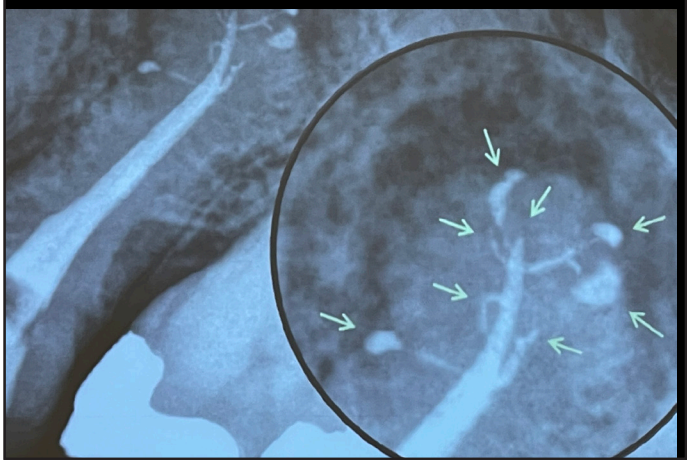
Full healing showing:



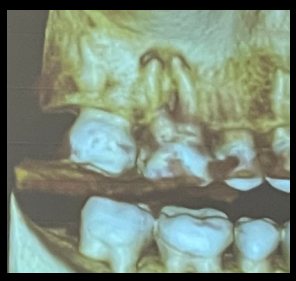
Complete regeneration of lamina dura and the tooth returning to its physiologic position

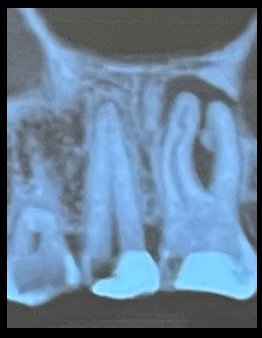
Gentle Wave Technique



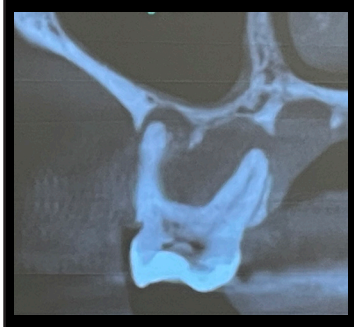


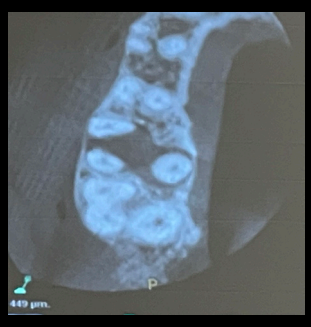
CBCT

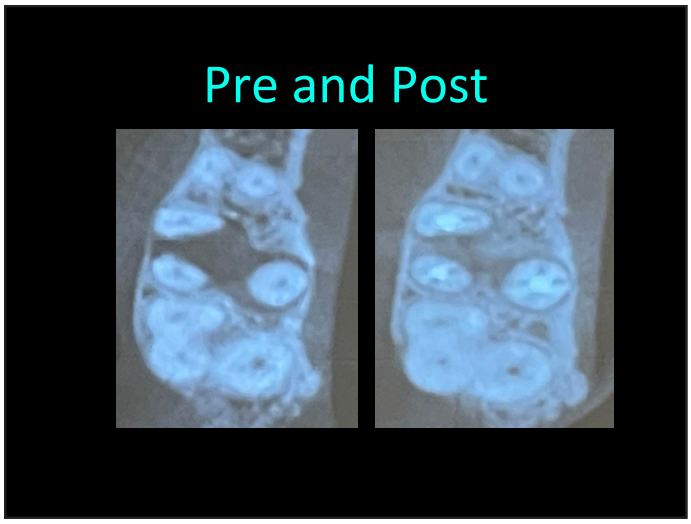


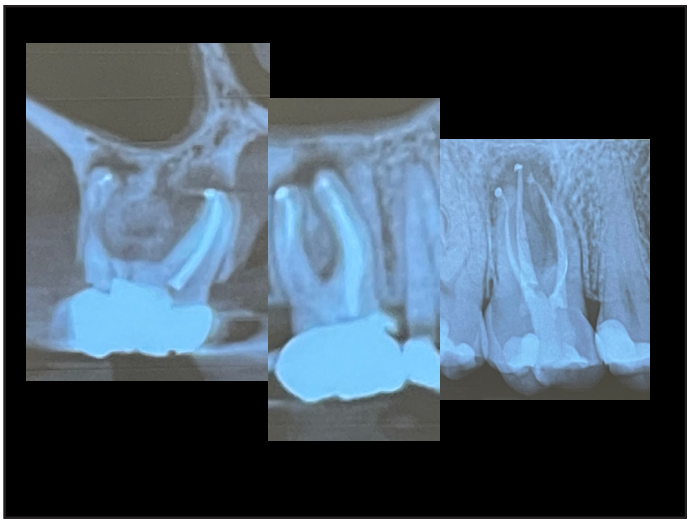


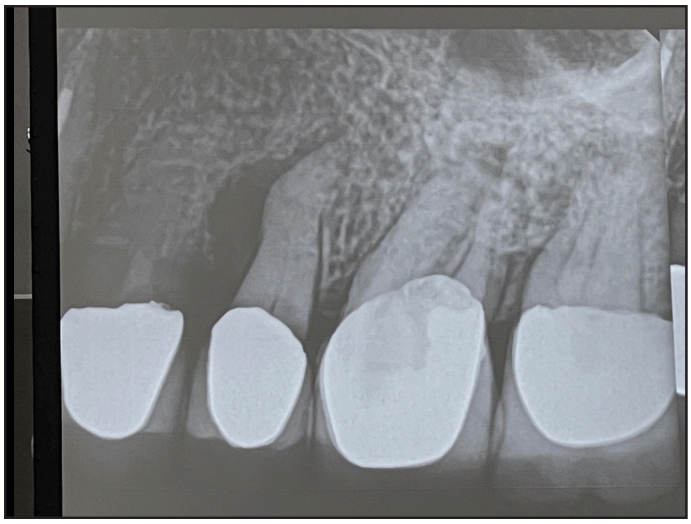
CBCT

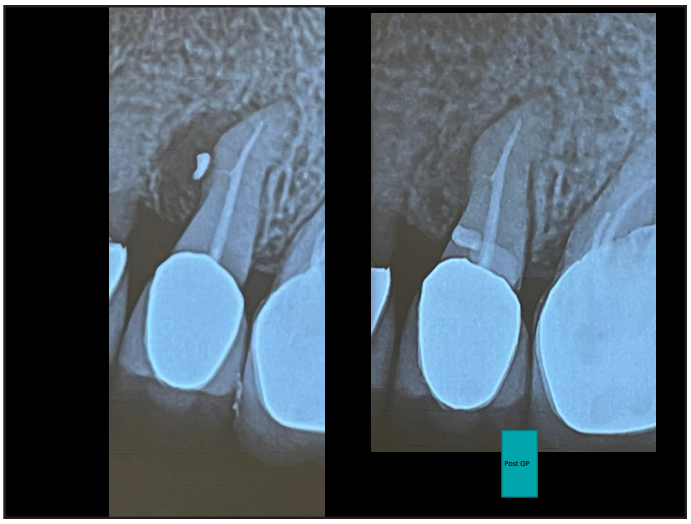


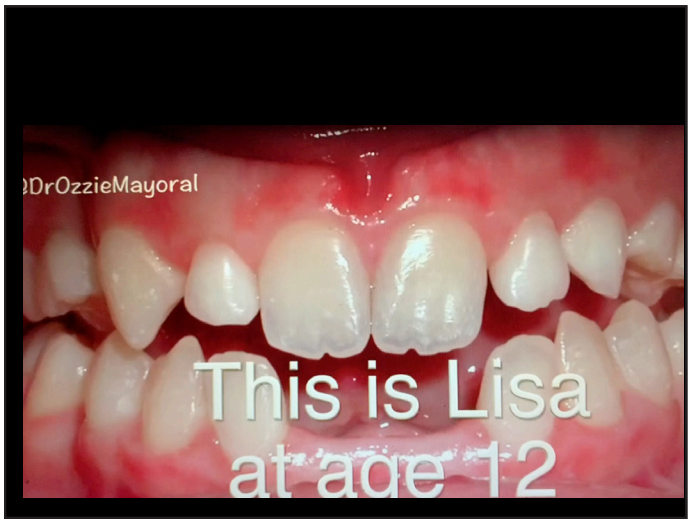


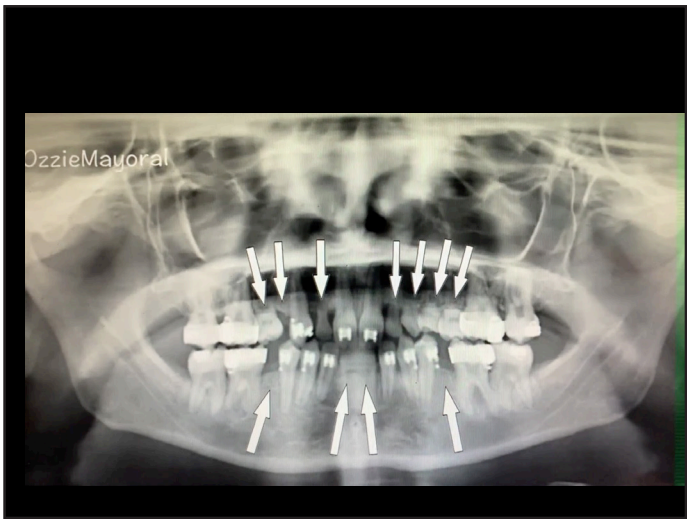

Pre and Post

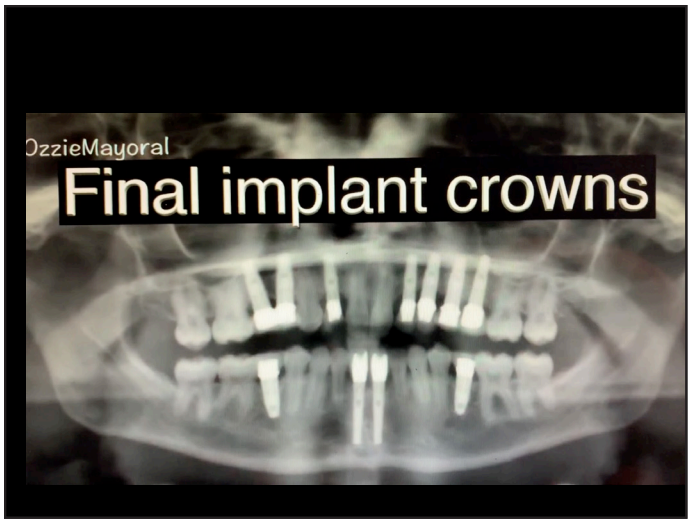


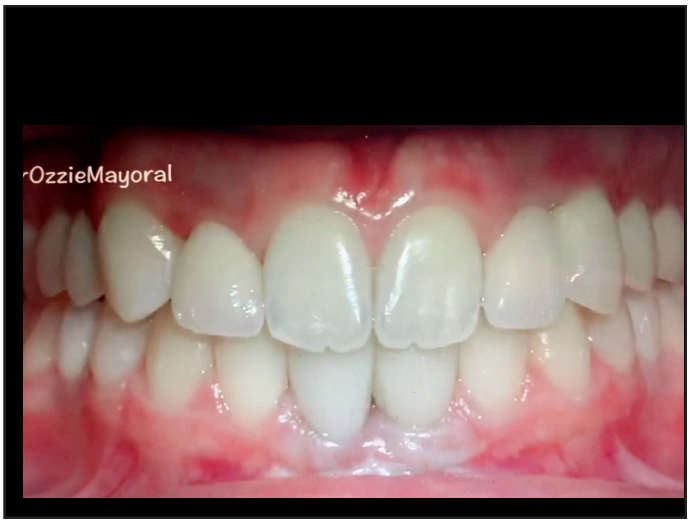





DrOzzieMayoral
This is Lisa
at age 12


OzzieMayoral


OzzieMayoral
Final implant crowns


OzzieMayoral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SELF EVALUATION

To Pull or Not to Pull: Parts 1-3

1. Which of the following principles of Dr. Branemark hold true today?

a. Do not load for 6 months
b. Countersink at crest of ridge
c. Pure Titanium vs. Alloy
d. External hex only
e. No x-rays for 3 months
f. No need for Attached Gingiva
g. All of the above
h. None of the above

2. T/F - The presence of External Resorption in teeth in the Esthetic Zone should be considered for extraction and immediate implant replacement (after full growth has occurred)

3. T/F - A carious and non-restorable tooth can be used to build up a ridge and improve gingival contours.

4. T/F - Immediate Loading can be done in selected cases?

5. Orthodontic Extrusion can:

a. Increases primary stability as there is more bone apical to the implant to stabilize it
b. decreases the gap between the implant body and the extraction socket
c. loosens the tooth - making an easier and less traumatic extraction
d. all of the above
e. only a) and b)

6. T/F - The one-third rule applies to the width and length of a post:

7. T/F - 40% of the population has thin-biotype tissue and as such are more difficult to treat in achieving ideal esthetic outcomes without soft and hard tissue grafting.

8. T/F - Medications (like PPI's and SSRI's) can negatively affect the percentage of successful outcomes for Implant Placement.

9. T/F - Use of a Surgical Guide can reduce the incidence of Peri- implantitis and lessen surgical complications

10. Reasons for a Sinus Tract or Fistula in Keratinized Gingiva include:

a. A coronal root fracture
b. Subgingival cement around a crown
c. Periodontal disease
d. A Furcation defect on a molar
e. all of the above
f. none of the above
g. a and d only
h. b and c only

11. T/F - A fracture on a tooth should never be diagnosed unless it is from multiple angles to confirm its presence

12. Implant success rates have gone up with the advent of:

a. Immediate Placement
b. Use of platform switching
c. Use of CBCT
d. Biotype conversion
e. All of the above

13. T/F - The 1/3 Rule applies to a post that is greater than 1/3 in depth and greater than 1/3 In width of the entire tooth.

14. T/F - Deep Probing Depth is not a predictor of tooth loss or future bone loss (in treated cases).

15. T/F - Many cases of Internal Root Resorption have been now shown to be external root resorption making the long term prognosis poor.

16. Some of the Advantages of a 3 Unit Bridge (FPD) include:

a. Can be fabricated quickly
b. Is less expensive (Initially)
c. Does not involve Surgery
d. All of the above

17. Advantages of a Single Tooth Implant include:

a. Higher Success Rates (over a 3 unit bridge) at 10/15 years
b. Decreased risk of caries of adjacent abutment teeth
c. Decreased risk of Periodontal and Endodontic breakdown of the abutment teeth
d. Improved ability to clean adjacent proximal surfaces.
e. All of the above

18. T/F - Improved maintenance of bone in the edentulous site of what would be a Pontic area for a 3 unit bridge is an advantage in choosing a single tooth implant to replace a missing tooth.

19. T/F - One of the basic factors to consider in treatment planning for implants is the Type of Bone the Implant will be placed in.

20. T/F - Placing implants into the “Maxillary Triangle” can negate the use of Sinus Augmentation, if planned in advance of significant periodontal breakdown and Sinus Pneumatization. Ideally two or three implants can be placed into this location.

21. T/F - A radiolucency within a radiolucency on a radiograph is an indication of a defective x-ray.

22. T/F - An Apico-marginal defect is defined as a complete loss of buccal plate which was once present on the buccal surface of that tooth.

23. Some of the advantages of Orthodontic Extrusion when preparing for implant placement are:

a. Increases primary stability as there is more bone apical to the implant to stabilize it after the extrusion is completed and the tooth is removed
b. Decreases the gap between the implant body and the extraction socket.
c. Loosens the tooth - making an easier and less traumatic extraction
d. Lessens the possibility of a fractured buccal plate while extracting the tooth
e. Can improve both soft and hard tissue prior to implant placement
f. All of the above

24. Advantages of the us of a Surgical Guide include:

a. Precise placement of the implant maximizing the available bone present.
b. Avoid perforation thru undercuts (in the Mandible as well as the Maxilla)
c. Avoid contact with vital structures
d. Allows for a path of insertion that will be more ideal for the Prosthesis
e. All of the above

25. T/F - 90% of people with Pre-Diabetes do not know they have it

26. T/F - A diagnosis of Pre-Diabetes is an opportunity more than a bad omen.

27. A fistula (sinus tract) in Keratinized Attached Gingiva can be indicative of:

a. Coronal or High Root Fracture
b. Cement in the Gingiva Sulcus
c. Periodontal infection
d. Tri/Bifurcaton Perio etiology
e. all of the above

Answer Key: 1. B, 2. T, 3. T, 4. T, 5. D, 6. T, 7. T, 8. T, 9. T, 10. A, 11. T, 12. E, 13. T, 14. T, 15. T, 16. D, 17. E, 18. T, 19. T, 20. T, 21. F, 22. T, 23. F, 24. E, 25. T, 26. T, 27. E

Stuart J. Oberman, Esq.

Stuart J. Oberman, Esq., of Loganville, Georgia, is principle of Oberman Law Firm which focuses on all aspects of commercial law and maintains deep expertise in every facet of healthcare matters from DSO formation, entity structures and mergers, corporate structure compliance and employment law, to contract negotiations, third-party reimbursement, federal and state regulations, and fraud and abuse. Prior to forming his own firm Mr. Oberman was in-house counsel for the Cincinnatti-based insurance company, Berlon & Timmer. He has earned Martindale & Hubbell's Client Distinction Award as a top one percent in the country practitioner and has authored numerous articles on legal issues impacting the practice of dentistry.

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Human Resource Issues in the Dental Practice – Parts 1 & 2

Stuart J. Oberman, Esq.

Table of Contents

TELEDENTISTRY – THE TIME HAS ARRIVED

Teledentistry

- Teledentistry in the United States is expected to explode
  - Teledentistry provides faster care
  - Helps patients avoid hospital emergency rooms
  - State regulations are complex
  - Concerns
    - Compliance
    - HIPAA
    - Licensing
    - Credentialing
    - Technology
    - Malpractice Exposure
- Teledentistry is here to stay

Modalities

- Live video (synchronous):
  - Live, two-way interaction
  - A provider using audiovisual technology
- Store-and-forward (asynchronous):
  - Transmission of recorded health information (X-Rays, photographs, and video)
  - Digital impressions – through a secure electronic communications system to a dentist
  - Evaluate a patient's condition outside of a real-time or live interaction
- Remote patient monitoring (RPM)
  - Personal health and medical data collection from an individual in one location via electronic communication
  - Transmitted to a dentist in a different location
- Mobile Health (mHealth): Mobile communication by cell phones, tablets, and other forms of electronic devices

Is it Time for a Telehealth Strategy?

- Questions to consider before creating a telehealth strategy:
  - What works best for your practice?
  - What are the goals?
  - What is the definition of a successful telehealth program?
  - Consider staffing or schedule accommodations
  - Regulatory matters regarding
    - Federal
    - State

How Employers Mitigate The Risk Of Lawsuits

- Employee manual and policies are up to date
  - Non-Harassment
  - Anti-Discrimination
  - Anti-Retaliation
  - The FMLA
- Prepare a risk management plan
  - Communicating the plan to all employees
  - Ensuring compliance with the plan
  - Investigating and addressing any reported concerns
  - Documenting the investigation process and outcome

FAIR LABOR STANDARDS ACT (NEW GUIDANCE)

Fair Labor Standards Act – IC Update

- January 6, 2021, U.S. DOL issued final rule
- Reaffirms "Economic Reality" Tests
  - IC in business for himself/herself
  - Economically dependent of potential employer for work
- 2 Factors (Core Factors)
  - Degree of control
  - Worker's opportunity for profit or loss
    - Based on initiative and/or investment
- 3 Other Guidepost Factors
  - Amount of skill required for the work
  - Degree of performance of the working relationship
  - Whether the work is part of integrated unit of production

2021 INTERNAL AUDIT AND COMPLIANCE REVIEW

2021 Audit/Compliance

- 2020 COVID-19 changed HR
- Pre-COVID-19 / HR was ignored – now mandatory
- Federal & state law concerns
- Mandatory checklist review
- New employee checklist
- Risk management checklist
  - Employee manual
  - Employee files
  - Practice policies
  - Recruiting/hiring
  - Complaints (Separate employee reporting process)
  - Job Classifications
    - Employee vs. Contractor
  - Benefits
  - OSHA/HIPAA

OVERVIEW OF POTENTIAL EMPLOYER VIOLATIONS

Overview of Potential Employer Violations

- Most common ways that employers violate the law
  - Using prohibited questions on job interviews
  - Not allowing employees to discuss their pay with co-workers
  - Failing to pay overtime
  - Independent Contractors vs. Employee
  - Disciplining an employee for complaining about their employer on social media
  - Failing to prevent a hostile workplace

THREE TYPES OF INTELLECTUAL PROPERTY FOR BUSINESSES

Three Types of Intellectual Property for Businesses

- Copyrights
- Trademarks/Logos
- Trade Secrets
  - Practice Name
  - Practice Logo
  - Website Content
  - Web Developer IP Assignment

HOW TO RESPOND TO NEGATIVE PATIENT REVIEWS ONLINE

How to Respond to Negative Patient Reviews Online

- Before Responding to Patient Reviews Remember…
  - Result of miscommunication between Dr. and patient
  - Don't take complaints personally
  - Don't get defensive or mad

How to Respond to Negative Patient Reviews Online, cont.

- When responding to patient reviews, follow these guidelines
  - Don't ignore negative patient reviews
  - Review the patient experience
  - Respond in private
  - Respond with a phone call
  - Never divulge any patient information online
  - Don't say you're sorry or apologize
  - Avoid excuses
  - Assume your conversation will be recorded
  - Assume your correspondence will go on social media
- How do you respond to allegations of violating sensitive matters involving [Title VI]
  - Race
  - National origin
  - Sex
  - Age
  - Religion

DENTAL BOARD COMPLAINTS

Complaints

- Dentist received a letter from the Board
- Patient has complained
- Shocked, angry, and worried

Preventative Strategies

- A patient who you do not know is more likely to file a complaint
- Patient is unable to pay their bills/problem
- Before a patient leaves your practice:
  - Ask if they understand doctor's directions
  - Do they understand the explanations
- Impossible to predict what patient is thinking or feeling
- Make an additional appointment to discuss concerns
- Give patient some extra time

Responding to a Complaint

- The period to respond to a complaint
- Do not ignore time period
- The Board may request:
  - Updated curriculum vitae
  - Copies of all licenses in-state, or out-of-state
  - Copies of Continuing Education
  - The complete patient records, including x-ray
  - Give Board ALL records

Preparation

- Best defenses to a Board Complaint:
  - Document instructions that are given to the patient
  - Document any concerns or complaints
  - Keep all correspondence
  - Record all accidents or incidents
  - Note all patient problems - attitude

Most Common Complaints

- Unprofessional Conduct
  - Failure to Release Records
  - Unlicensed Practice
  - Substandard Practice
  - Malpractice Claims
- Financial Issues
  - Billing for services not rendered
  - Insurance billing discrepancies

HERE COMES THE GOVERNMENT – ARE YOU PREPARED FOR A MEDICAID AUDIT?

Are You Prepared for a Medicaid Audit?

- Excessive Government crackdown
- The Office of the Inspector General (OIG)
  - Aggressive audits
- State Attorney General's Office (AG)
- Fraud Abuse
- Requires Corporate Integrity Agreements (CIA's)
- OIG agrees not to seek their exclusion from participation in Medicare, Medicaid, or other Federal health care programs.
- A comprehensive CIA generally lasts 5 years, and includes requirements to:
  - Hire a compliance officer/appoint a compliance committee;
  - Develop written standards and policies;
  - Implement a comprehensive employee training program;
  - Retain an independent review organization to conduct annual reviews;
  - Establish a confidential disclosure program;
  - Restrict employment of ineligible persons;
  - Report overpayments, reportable events, and ongoing investigations/legal proceedings; and
  - Provide an implementation report and annual reports to OIG on the status of compliance activities.

ANTI-HARASSMENT COMPLAINT PROCEDURE

Anti-Harassment Complaint Procedure

- Establish a procedure for filing an internal complaint
  - Even if it is not unlawful
- Have multiple points of contact
  - Supervisors or HR
- Detail what constitutes Prohibited Conduct
  - Conduct giving rise to the complaint
  - Company-sponsored business and social events
  - Romantic relationship with a co-worker
    - Calls/texts
  - Harassing behavior from customers, vendors, and suppliers.
  - Harassment via social media, e-mail and text messages are all within the scope of prohibited conduct.

ARE YOU VIOLATING FEDERAL LAW DURING THE INTERVIEW PROCESS?

Are You Violating Federal Law During the Interview Process?

- On April 29, 2021, the EEOC filed suit against Walmart
- Alleging that Walmart violated federal law by failing to provide an American Sign Language (ASL) interpreter for an applicant and failing to hire the qualified applicant because they were deaf.
- The ADA requires that employers:
  - Provide disabled and able-bodied applicants the same opportunities to compete for a job
  - Includes providing a sign language interpreter for deaf applicants at an interview
- The EEOC will hold employers accountable

2021 MUST HAVE EMPLOYER PROCEDURES

Practice Policies

Your Employee Manual should include the following provisions for:

- Sexual harassment
- Bullying
- Dress code (tattoos, hair color and styles, body piercings)
- Privacy in the workplace
- Personal cell phone use
- Internet/computer use policy
- Proper and inappropriate relationships at work
- Drug-Free Workplace Program
- Equal Employment Opportunity policy
- Social media policy that includes a prohibition on visiting social media sites during business hours
- Update all internal resources for the Employee Manual and company policies
- Issue an updated Employee Manual to all employees
- Verify that labor law posters are current

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Employee Complaints

- Procedure to report and file complaints about prohibited activities
- Need a procedure to report and file complaints for
  - Prohibited conduct
  - Prohibited activity
  - Prohibited procedures
  - Retaliation practices regarding:
    - Whistleblower Statute
    - OSHA/HIPPA

32

Management Training Plan

Do you have annual training for your management team, including:

- Performance reviews
- Managing difficult employees
- Preventing sexual harassment and handling harassment allegations
- Terminating an employee
- Keeping a safe workplace

New Employee Checklist

- Application for Employment
- Substance Abuse Policy and Procedure Manual
- Notification and Authorization Form for Employment Investigative/Consumer/Credit Report
- Criminal History Record Information Consent Form
- Background Check Authorization and Release Form
- Employee Direct Deposit Authorization Form
- Employment Reference Check
- Employment Eligibility Verification Form I-9
- Employee's Withholding Allowance Certificate Form W-4
- IRS Wage and Tax Statement Form W-2
- New Hire Reporting Form

Presented by Oberman Law Firm

Thank you!

For more information, please sign up for our newsletters. Text **OBERMAN** to **22828** or contact Stuart Oberman at stuart@obermanlaw.com.

Presented by Stuart J. Oberman, Esq.

SELF EVALUATION

Human Resource Issues in the Dental Practice – Parts 1 & 2

True/False

1.___ Live video is a modality to use for patient communication in order to utilize Teledentistry.

2.___ Non-harassment and anti-discrimination provisions should be included in an employee manual in order to potentially help employers mitigate the risks of a lawsuit.

3.___ The degree of control that an employer utilizes over an associate is a factor to consider in order to determine if an associate is either an employee or an independent contractor.

4.___ Each State solely determines the rules and regulations regarding governmental compliance for the dental profession and not the federal government.

5.___ OSHA and HIPPA compliance are totally regulated by individual States.

6.___ The failure to pay an employee for working overtime is not a violation of federal or state law.

7.___ Three (3) types of intellectual property are copyrighted material, trademarks, and trade secrets.

8.___ It is always proper to disclose a patient's name and treatment information when responding to a negative online patient review.

9.___ When interviewing a potential employee for a job, you should use the guidelines set forth by the Americans with Disabilities Act.

10.___ Failing to provide an American Sign Language (ASL) interpreter during an interview may be a violation of the Americans with Disabilities Act.

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

TOM VIOLA
PHARMACOLOGY DECLASSIFIED

Managing Acute Dental Pain

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

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Program Learning Objectives

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

- Describe the pharmacology and mechanism of action of opioid and non-opioid analgesics, as well as their potential for abuse.
- Explain the intended role of opioid and non-opioid analgesics in the treatment of acute dental pain, as well as situations which may preclude their use.

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Program Learning Objectives

- Describe strategies useful in developing a pain management plan that is individualized for a patient's needs and underlying medical conditions.
- Discuss appropriate prescribing practices for opioid and non-opioid analgesics to utilize in everyday clinical situations.

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The Concept of Pain and Pain Management

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The Concept of Pain

Pain is an unpleasant sensory and emotional experience in which the body is made urgently aware of actual or potential tissue damage.

- Pain Threshold
  - The lowest intensity of painful stimulation at which the patient becomes aware of the pain.

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The Dental Pain Paradox

Pain is a powerful motivator AND de-motivator for patients to seek help from their dental professional.

- Pain keeps some patients from seeking help
  - Fear of a painful procedure
  - Fear of significant post-operative pain

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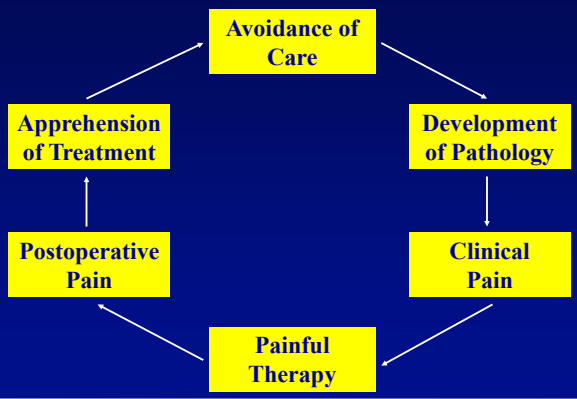
The Concept of Pain



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The Anatomy of Pain

Chemical agents that occur naturally in the environment of pain receptors after acute tissue damage are algogenic substances.

- These include adenosine, adenosine triphosphate, serotonin, histamine, bradykinin, cytokines, and prostaglandins.
- The release of these substances leads to nociceptor activation, producing the pain impulse.

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The Anatomy of Pain

Inflammation promotes the formation of prostaglandins which enhance the effects of the other algogenic substances on nociceptors.

- Traumatic injury may also provoke an initial efferent sympathetic reflex, producing vasoconstriction.
- Decreased microcirculation in the injured tissue, produces ischemia, further amplifying nociceptor stimulation.

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Non-Opioid Analgesics (COX Inhibitors)

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COX Inhibition

Phospholipids
↓ *(phospholipase)*
Arachidonic Acid

(COX-1) Physiologic Prostaglandins	*(COX-2)* Pathologic Prostaglandins
• GI protection	• Pain sensitization
• Renal protection	• Inflammation
• Smooth muscle relaxes	• Leukocytosis
• Regulate blood clotting	

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NSAIDs

- Types
  - –ibuprofen (Motrin, Advil)
  - –naproxen sodium (Anaprox, Aleve)
  - –naproxen (Naprosyn)
  - –etodolac (Lodine)
  - –nabumetone (Relafen)
  - –meloxicam (Mobic)

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NSAIDs

- Types
  - –Other NSAIDs offer no apparent advantage over ibuprofen in the treatment of dental pain
    - diclofenac (Voltaren / Cataflam)
    - diflunisal (Dolobid)
    - ketoprofen (Orudis)
    - meclofenamate (Meclomen)

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NSAIDs

- Pharmacologic effects
  - –Antipyretic
    - Lower body temp if above normal
  - –Analgesic
    - Treatment of mild to moderate pain
    - More effective if administered before pain
  - –Anti-inflammatory
    - Treatment of inflammatory joint disease
    - Treatment of dysmenorrhea

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NSAIDs

- Patient care considerations
  - –Hypersensitivity reactions
    - Cross-sensitivity with ASA and other NSAIDs
  - –Dermatological reactions
    - Stevens Johnson Syndrome (SJS)
    - Toxic epidermal necrolysis (TEN)

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NSAIDs

- Patient care considerations (continued)
  - –Teratogenic effects
    - Premature closures in fetal circulation
    - Prolonged gestation
  - –Iatrogenic disease
    - Not listed as medications on medical history
    - Interfere with cardioprotective effects of once-daily aspirin
  - –Maximum daily dose of ibuprofen: 3200mg

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NSAIDs

- Adverse reactions
  - –Gastrointestinal ulceration
    - Decrease protective mucous
    - Increase gastric acid secretion
    - Nausea and vomiting
    - Gastrointestinal bleeding

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NSAIDs

- Adverse reactions (continued)
  - –Altered bleeding time
    - Reversibly reduce platelet aggregation
      - –Effect lasts only until NSAID is excreted
      - –Normal clotting resumes
      - –Lesser effect than aspirin

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NSAIDs

- Drug interactions
  - –Increased effectiveness of other drugs
    - Mechanism
      - Plasma-protein binding
    - Common Drugs Affected
      - Coumadin (warfarin)
    - Result
      - Increased risk of hemorrhage

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NSAIDs

- Drug interactions (continued)
  - –Increased effectiveness of other drugs
    - Mechanism
      - Decreased renal excretion
    - Common Drugs Affected
      - Lithium
    - Result
      - Increased muscle rigidity

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NSAIDs

- Drug interactions (continued)
  - –Decreased effectiveness of other drugs
    - Mechanism
      - Increase sodium/fluid retention
    - Common Drugs Affected
      - Antihypertensives
    - Result
      - Exacerbated cardiovascular disease

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NSAIDs

- Contraindications
  - –Asthma
  - –Cardiovascular disease with fluid retention
  - –Peptic ulcer/ulcerative colitis
  - –Renal function impairment
  - –Pregnancy
  - –History of hypersensitivity to aspirin

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Acetaminophen (APAP)

- Types
  - –Tylenol, Panadol
- Mechanism of action
  - –Unknown (hypothesized)
    - Elevates overall pain threshold
    - Reduces fever

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Acetaminophen (APAP)

- Pharmacologic effects
  - –Antipyretic
    - • Lowers body temp if above normal
  - –Analgesic
    - • Effective in treatment of mild to moderate pain
    - • Considered the most “safe” analgesic

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Acetaminophen (APAP)

- Adverse reactions
  - –Hepatotoxicity
    - • Converted to a liver-toxic metabolite
      - –Inactivated by gluthathione in liver
    - • Possible liver failure with either:
      - –Acute ingestion of supratherapeutic doses
      - –Chronic ingestion of high therapeutic doses
    - **–Maximum daily dose of APAP: 4000mg**
    - **–Maximum daily dose of Tylenol: 3000mg**

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Acetaminophen (APAP)

- Adverse reactions
  - –Hepatotoxicity (continued)
    - –Exacerbated by liver-enzyme inducers:
      - –Alcohol
      - –Cigarette smoke
      - –Drugs
        - –phenytoin (Dilantin)
    - –Delayed reaction
      - –Peak hepatotoxicity occurs 3 to 4 days after acute intoxication

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Acetaminophen (APAP)

- Contraindications
  - –Hepatitis or other known decreased liver function
  - –Chronic alcohol ingestion
  - –Other liver microsomal enzyme inducing drugs
  - –Impaired renal function

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Opioid Analgesics

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Opioid Analgesics

- Opioid Analgesics used in Dentistry
  - – Codeine
    - • Combination with APAP (Tylenol w/codeine)
  - – Hydrocodone
    - • Combination with APAP (Vicodin, Lortab)
  - – Oxycodone
    - • Combination with APAP (Percocet, Endocet)

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Opioid Analgesics

- Pharmacologic effects
  - –Analgesia
    - • Treatment of moderate to severe pain
  - –Cough suppression
    - • Treatment of severe non-productive coughs
  - –GI hypo-motility
    - • Treatment of diarrhea and traveler's sickness

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Opioid Analgesics

- Patient care considerations
  - –Addiction and dependence
    - • Tolerance develops to most effects
    - • Withdrawal symptoms upon abrupt cessation
  - –Respiratory effects
    - • Respiratory depression leads to death

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Opioid Analgesics

- Adverse reactions
  - – GI effects
    - • Constipation (OIC)
      - –Reduced GI motility
    - • Nausea and emesis
      - –Direct stimulation of the chemoreceptor trigger zone
  - – Hypersensitivity reactions
    - • Dermatological reactions

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Opioid Analgesics

- Drug interactions
  - – Increase risk of additive CNS depression
  - – Increase risk of additive respiratory depression
  - – Increase risk of additive constipation

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Opioid Analgesics

- Contraindications
  - –Chronic respiratory disease (COPD)
  - –Head injuries
  - –Hepatic, renal function impairment
  - –Prostatic hypertrophy, constipation

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Treatment of Opioid Analgesic Addiction

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Treatment of Opioid Analgesic Addiction

- Vivitrol (naltrexone)
  - –Administered once-monthly via IM injection
  - –Blocks effects if opioids are taken
- Sublocade (buprenorphine)
  - –Administered once-monthly via SC injection
  - –Blocks effects if opioids are taken
- Suboxone (buprenorphine plus naloxone)
  - –Taken sublingually by patient
  - –Blocks effects if opioids are taken

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Preventing Opioid Analgesic Diversion

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Preventing Opioid Analgesic Diversion

Since dental offices are potential sources of opioid analgesics, the dental team must take precautions to prevent diversion.

- Preventing opioid analgesic diversion in the dental office requires that the dental team
  - – Recognize drug-seeking behavior
  - – Prescribe opioid analgesics appropriately
  - – Utilize strategies to prevent order alteration

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Identification of Substance Abuse

Review of the Medical History

Patient Interview

Screening Tools For Substance Abuse

Review of the PDMP

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Patient Education of Risks

Adverse Effects

Overdose

Addiction

Alternative Treatment Methods

Why an Opioid is Necessary

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Prescribing Opioids

Is The Analgesia Meaningful?

Are There Any Adverse Effects?

Do Any Aberrant Behaviors Exist?

Is The Patient Aware?

Is The Patient At Risk?

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Prescribing Opioids

Smallest Effective Dose

Smallest Amount of Doses

Shortest Appropriate Period of Treatment

Supplant PRN Dosing

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Preventing Drug Diversion

Prescription Drug Monitoring Program!!!

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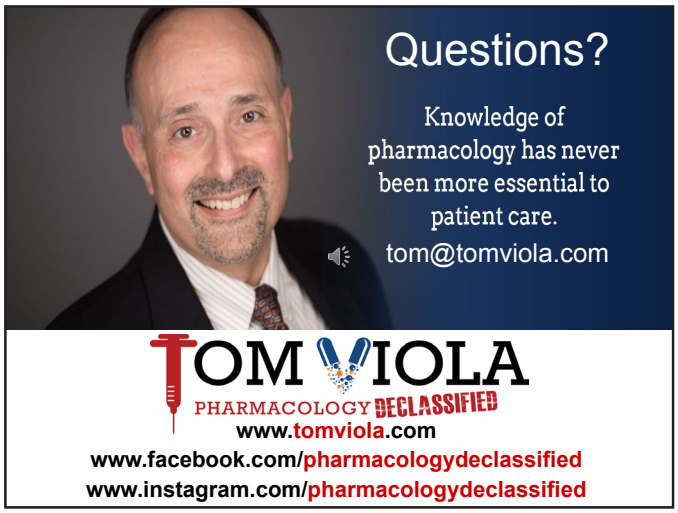

SELF EVALUATION

Managing Acute Dental Pain

1. Due to their effect on the COX-1 enzyme, NSAID's may produce which of the following adverse effects?

a. Increased fever
b. Stomach upset
c. Abnormal fat distribution
d. Improved kidney function
e. None of the above

2. T/F - Ibuprofen may interact with lithium to cause increased muscle rigidity.

3. In acute overdose, acetaminophen adversely affects the :

a. Bone marrow
b. Lungs
c. Heart
d. Liver
e. None of the above

4. T/F - Vivitrol (naltrexone) is a once-monthly injection used to help prevent relapse to opioid dependence after detoxification.

5. Which the following can be considered an adverse reaction associated with the opioids?

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

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

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Obstructive Sleep Apnea – Part 2: Developing a Treatment Protocol

Jonathan A. Parker, DDS

I. OVERVIEW OF ORAL APPLIANCE THERAPY

A. Indications for Use of Oral Appliance Therapy

1. Primary/heavy snoring
2. Mild to moderate OSA (and some cases of severe OSA)
3. Poor tolerance of nasal CPAP
4. Failure of UPPP
5. Use of appliance during travel
6. Use in combination with other treatments (nasal CPAP, etc.)

B. Classifications of Oral Appliances

1. Mandibular repositioning devices
2. Tongue retaining devices

C. Mechanism of Action of Oral Appliances

1. Tongue retaining devices
   - Advances the base of the tongue
   - Actively holds tongue forward to open airway
   - Reduces fluctuations in genioglossus muscle activity
2. Mandibular advancement devices
   - Repositions and stabilizes the mandible, tongue, and hyoid bone (and sometimes the soft palate)
   - Increases baseline genioglossus muscle activity
   - Increases size of the airway in a medial-lateral dimension more than AP dimension

II. TREATMENT WITH ORAL APPLIANCE THERAPY

A. Coordinating Care with the Sleep Medicine Physician

1. Develop protocol with physician in your community

B. Medical Assessment for OSA

1. Physician's evaluation may include:
   - Health history and history of symptoms related to snoring and obstructive sleep apnea
2. Head and neck examination
3. A polysomnogram will be indicated if a sleep disorder is suspected

C. Medical Treatment Options for Snoring and OSA

1. Behavioral treatment and avoidance of risk factors
   - Sleep hygiene
   – Consistent pre-sleep routine
   – Limit daytime naps
   – Minimize light, noise, and extreme temperatures in bedroom
   – Avoid large meals before bedtime
   – Avoid strenuous exercise within 2-3 hrs. of bedtime

  - Avoid caffeine, nicotine, other stimulants within 4 hrs. of bedtime
  - Weight loss
  - Body positioning
  - Avoidance of CNS depressants (ie. valium, alcohol, etc.)
  - Avoidance of upper airway irritants (ie. smoking)
2. Over-the-counter (OTC) snoring treatments
3. Continuous positive airway pressure (or bi-level; auto-set)
4. Oral appliance therapy
5. Surgery
   - Tracheotomy
   - Tonsillectomy/adenoidectomy
   - Nasal surgery
   - Uvulopalatopharyngoplasty (UPPP)
   - Laser-assisted Uvulopalatoplasty (LAUP)
   - Maxillofacial surgery

D. Protocol for Oral Appliance Therapy

Dental Evaluation and Consultation (including informed consent)
⇩
Impressions and Bite Registration
⇩
Insert Oral Appliance
(include instructions on care and use of device)
⇩
Follow-up Evaluation(s)
(may recommend home unattended sleep test)
⇩
Referral to Sleep Physician & Titration Polysomnogram with Oral Appliance
(if patient has moderate or severe OSA)
⇩
6-month Follow-up Evaluation

E. Protocol for Adjustable Mandibular Advancement Device (MAD)

1. Informed consent (refer to sample)
2. Impressions and bite registration
   - Use of George Gauge
   - Other bite registration techniques
3. Insertion of appliance
   - Post-insertion instructions
4. Follow-up evaluation
   - Update progress
   – Change in symptoms
   – Compliance
   – Side effects
   – Change in Epworth Sleepiness Score
   - Examination
   – Fit of appliance
   – Occlusal evaluation
   – TMJ/muscle evaluation
   - Next follow-up evaluation

SELF EVALUATION

Obstructive Sleep Apnea – Part 2 - Developing a Treatment Protocol

1. Standard sleep hygiene recommendations usually include all of these EXCEPT:

a. Keep the television or other programming on screens playing in the bedroom to help you fall asleep and stay asleep more easily
b. Limit daytime naps to about 20 minutes or less
c. Minimize light, noise, and extreme temperatures in the bedroom
d. No electronics or screen time within 1 hour of bedtime

2. T/F - CPAP is the most effective treatment for snoring and obstructive sleep apnea, but compliance with the device is only about 50-60%.

3. Prior to moving forward with use of oral appliance therapy for patients with snoring or obstructive sleep apnea it is standard protocol for the dentist to:

a. Complete MRIs of the TMJs
b. Have any erupted 3rd molars extracted to avoid complications with fitting and idealizing occlusion on the appliance.
c. Have confirmation of the patient's diagnosis and a written recommendation for oral appliance therapy from their physician
d. Be certain that the patient has had their tonsils removed in order to confirm that this is not the cause of the airway problem.

4. T/F - Studies show a significant association between moderate-severe periodontal disease and the risk of obstructive sleep apnea.

5. Mandibular advancement devices are effective in improving breathing during sleep by:

a. Opening the airway most in a lateral dimension and at the level of the nasopharynx
b. Opening the airway most in an anterior-posterior dimension and at the level of velopharynx
c. Opening the airway most in an anterior-posterior dimension and at the level of nasopharynx
d. Opening the airway most in a lateral dimension and at the level of the velopharynx

6. Periodic long-term follow-up evaluations for your patients using a mandibular advancement device are critical to:

a. Assess the patient's snoring, quality of the sleep, improvement in daytime sleepiness and other symptoms
b. Confirm patient's comfort with appliance and identify any fractures or other issues with the device
c. Identify any side effects (ie. bite changes, TMD symptoms, etc.) that the patient may be experiencing
d. All of the above

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

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Eric J. Morin, MBA, of Kennesaw, Georgia, is the founder and CEO of Tower Leadership, a dental practice optimization consulting firm. As a national speaker, author, consultant and thought leader he specializes in educating dentists on how to achieve financial freedom by investing in their own practices. Mr. Morin's expertise has improved the work environment, impact and bottom lines of hundreds of practices by equipping dentists with the knowledge and tools they need to grow and improve their operations in a way in which everyone on the team benefits. He is also a wealth and business coach and a Forbes Speaker and presents regularly across the country.

You may contact Mr. Morin with your questions and comments at Eric@TowerLeadership.com, or by phone at 678-200-6261.

TOWER LEADERSHIP

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Understanding and Maximizing Practice Valuation

THERE ARE 2 TYPES OF PEOPLE TUNING IN

1. Someone that isn't thinking about selling their practice any time soon and only wants to increase the valuation
2. Someone that wants to sell in the next couple of years and wants to know what that will mean to them financially

TOWER LEADERSHIP

YOU WILL DISCOVER

- The 5 key ways to increase valuation for your practice
- The value of timing when it comes to selling your dental practice
- Why holding your practice and increasing scalability could be your best financial strategy

TOWER LEADERSHIP

3 CHOICES

1. Keep doing what you are doing
2. Avoid the truth, maybe even get upset
3. Dramatically change your practice and financial life

TOWER LEADERSHIP

3 PROBLEMS

1. Information you've been given is wrong and designed on getting other people wealthy
2. You're not sure the most effective way to calculate and increase the value of your practice, which ultimately affects your financial life
3. You don't have an advisor focused on the value of your practice and what happens after you sell

TOWER LEADERSHIP

3 PROMISES

1. You will have tangible tools to increase the value of your practice
2. You will walk away realizing the true valuation of your dental practice
3. You will know the financial implications of selling your practice

TOWER LEADERSHIP

LET'S BE HONEST, PEOPLE WANT MORE MONEY

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"

If you want something you have never had then you have got to do something you have never done.

-Zig Ziglar

TOWER LEADERSHIP

PROBLEM 1

Information you have been given is incorrect and designed around making other people wealthy

TOWER LEADERSHIP

TOWER LEADERSHIP

TIME IS THE ENEMY

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THE FINANCIAL ADVISOR, THE TRANSITION SPECIALIST, AND THE BANKER ARE ALL BENEFITING FROM THE SALE OF YOUR PRACTICE.

WHY SHOULD YOU KEEP IT?

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"

Diversification is protecting against ignorance. It makes little sense if you know what you are doing.

- Warren Buffett

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UNDERSTANDING THE VALUE OF YOUR DENTAL PRACTICE

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ECONOMIC VALUE

VS.

MARKET VALUE

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ECONOMIC VALUE

Cost to replace a given asset

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$1,000,000 at 30%= $300,000

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MARKET VALUE

The price the market will support for a given asset

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$6,000,000 X 5%= $300,000

Therefore, it would take $6 million in investment savings to duplicate the economic value of a $1,000,000 practice.

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WHAT HAPPENS AFTER THE SALE

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LET'S ASSUME

- In collections $2,000,000
- Sold 80% of collections $1,600,000
- Pay 30% TAXES $1,120,000
- Invest in Stock Market, after taxes and fees 5%
- Total Annual Income $56,000

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WHAT HAPPENS IF WE ADD IN BROKER FEE AND ASSUME WE HAVE DEBT

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ANOTHER EXAMPLE WHAT HAPPENS AFTER YOU SELL?

- $2,000,000 Sold For 80% of collections ($1,600,000)
- $160,000 Brokerage Fee (10%)
- X 30% Tax ($480,000)

After brokerage fee and tax, you would have:
$960,000

TOWER LEADERSHIP

LET'S ALSO ASSUME DEBT WHICH IS LIKELY

- $960,000
- - $450,000 Debt Service
- = $510,000 Total funds after broker, tax and debt
- $510,000 x .05 Rate of return = 25,500

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ALL ASSETS HAVE TO BE MANAGED

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KEEP YOUR PRACTICE

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PUT SYSTEMS & TEAMS IN PLACE

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LEVERAGE YOUR TEAM

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HIRE OTHER DOCTORS:
YOU DO NOT HAVE TO GIVE UP OWNERSHIP

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NOT HAVING TO WORK CLINICALLY

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15%= $300,000

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ANNUAL INCOME IF YOU:

- Sell = $30,000-60,000
- Keep = $300,000-$600,000

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WHO DOES KNOW THIS MATH?

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SO IF WE SELL WE NEED TO MAKE 3 KEY MOVES

1. Increase the valuation to the maximum so you get the most for your asset
2. Reduce or eliminate the brokerage fee
3. Utilize increased cash flow to reduce debt service

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SO WHY ARE WE NOT MAXIMIZING OUR ASSETS?

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ADVISORS IN THE DENTAL MARKETPLACE HAVE TURNED YOUR PRACTICE INTO AN INCOME STREAM AND HAVE NOT FOCUSED ON IT AS AN ASSET

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HERE'S AN EXAMPLE:

What does a typical doctor's financial advisor tell them to do first?

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INVESTING IN YOUR 401K

- Net Income $100,000
- Invested into 401k $40,000
- Taxable Income $60,000
- Rule of 72- In 10 Years $80,000

TOWER LEADERSHIP

WHAT'S THE OPPORTUNITY COST

TOWER LEADERSHIP

INVESTING IN YOUR PRACTICE

• Net Income	$100,000
• Invested into Marketing	$40,000
• Taxable Income	$60,000
• A.C.	$115
• Avg. Rev/New Patient	$1,700
• 1 Year 348NP X $1,700	$591,600
• 1 Year Take Home	$177,400

TOWER LEADERSHIP

I WILL SHOW YOU HOW TO PUT MONEY INTO YOUR 401K AND PRACTICE IN THE SAME YEAR

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CHOICE 1: Have $40,000 in your 401k

CHOICE 2: Invest in your business first, grow revenue, grow net worth, grow income, and still be able to put $40,000 into your 401k

Choice #2 Allows you to accomplish both

TOWER LEADERSHIP

IT IS HARD TO JUSTIFY TAKING MONEY OUT OF AN ASSET PERFORMING AT 30% AND MOVE IT INTO AN ASSET PERFORMING AT 5% AND PAY A FEE TO DO THAT.

TOWER LEADERSHIP

THIS ONLY MAKES SENSE ONCE WE HAVE MAXIMIZED THE RETURN AND VALUATION OF THE DENTAL PRACTICE.

TOWER LEADERSHIP

PROBLEM #2

> You are not sure of the most effective way to calculate and increase the value of your practice, which ultimately affects your financial life

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FIRST WAY TO LOOK AT THE VALUE OF YOUR PRACTICE IS COLLECTIONS

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Practice Value Matrix

		95%	$950,000
		90%	$900,000
		85%	$850,000
Collections	$1,000,000	80%	$800,000
		75%	$750,000
		70%	$700,000
		65%	$650,000

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WHY IS THE VALUE DEPRECIATED?

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THE REASON IS A LARGE PORTION OF THE VALUE IS THE DOCTOR

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2ND WAY IS TO LOOK AT EBITDA: THIS IS WHAT THE MARKET IS TRENDING TOWARDS

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WHAT IS EBITDA?

TOWER LEADERSHIP

Practice Value Matrix

		6x	$1,200,000
		5.5x	$1,100,000
		5x	$1,000,000
EBITDA	$200,000	4.5x	$900,000
		4x	$800,000
		3.5x	$700,000
		3x	$600,000

TOWER LEADERSHIP

IT IS CRUCIAL TO LEARN THE BALANCE BETWEEN GROWTH AND PROFITABILITY

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UNDERSTANDING REDUNDANT SYSTEMS

- With regard to Systems / Scalability
- With regard to Associates
- With regard to Team
- With regard to Finance
- With regard to Marketing

TOWER LEADERSHIP

WITH REGARD TO SYSTEMS / SCALABILITY

TOWER LEADERSHIP

WITH REGARD
TO ASSOCIATES

TOWER LEADERSHIP

WITH REGARD TO
TEAM

TOWER LEADERSHIP

WITH REGARD TO
FINANCE

TOWER LEADERSHIP

WITH REGARD
TO MARKETING

TOWER LEADERSHIP

PROBLEM #3

You don't have an advisor focused on the value of your practice and what happens after you sell

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FIRST NEED TO DETERMINE
YOUR EXIT STRATEGY

How much cash do you need?

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IT TAKES APPROXIMATELY 20 YEARS TO SAVE A MILLION DOLLARS

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12 TO 24 MONTHS= INCREASE IN VALUATION OF $1,000,000

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IT IS MUCH QUICKER GROWING YOUR NET WORTH UTILIZING YOUR PRACTICE VALUE VS SAVING

- 20 years = 1 million
- 12-24 months = 1 million
- Which would you prefer?

TOWER LEADERSHIP

THIS IS WHY IT IS MUCH MORE EFFICIENT TO HAVE A FINANCIAL PLANNING PROCESS THAT PLACES YOUR NUMBER ONE ASSET AS YOUR DENTAL PRACTICE

FINANCIAL ADVISORS AND CPAs ARE NOT TRAINED TO DO THIS

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CAN'T I JUST GROW AND NOT HAVE A PLAN AROUND THIS?

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"GROWTH WITHOUT PROFIT IS NOTHING MORE THAN AN EGO TRIP"

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IT'S NOT ENOUGH TO GROW

- Believe it or not you can grow and reduce your valuation and have less cash.

TOWER LEADERSHIP

FUNDAMENTAL PROBLEM

- Then you need to know where to invest that growth to get the best return and that is not in your investment account
- We need to invest those funds back into your practice to increase valuation which will give you the most return

TOWER LEADERSHIP

YOU NEED A TEAM THAT IS GOING TO WALK YOU THROUGH, STEP-BY-STEP, THE FINANCIAL PROCESS BEFORE AND AFTER YOU SELL

TOWER LEADERSHIP

THE CORRECT ADVICE AROUND THE VALUATION OF YOUR PRACTICE IS CRUCIAL

TOWER LEADERSHIP

REMEMBER THERE ARE 2 TYPES OF PEOPLE THAT ARE TUNING IN

1. Someone that isn't thinking about selling their practice any time soon and only wants to increase the valuation
2. Someone that wants to sell in the next couple of years and wants to know what that will mean to them financially

TOWER LEADERSHIP

WE'VE COVERED A LOT OF TERRITORY

- Awareness
- Information
- Opportunity

TOWER LEADERSHIP

WHAT I HAVE LEARNED IN MY CAREER

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STAGE 1: THE DREAMER

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STAGE 2: THE SETTLER

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STAGE 3: THE RISK TAKER

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STAGE 4: THE MANAGER

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STAGE 5: THE HUMANITARIAN

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2 ADDITIONAL PROBLEMS

1. Memorization (Repetition)
2. How we process ideas and information (immersion)

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4 LEVELS OF CONSCIOUSNESS

1.) Unconscious Incompetence
2.) Conscious Incompetence
3.) Conscious Competence
4.) Unconscious Competence

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For more information about Tower Leadership

Email: **INFO@TOWERLEADERSHIP.COM**

With the Subject Line: "Your Practice Name"

and a Tower Team member will reach out to you promptly

TOWER LEADERSHIP

Thank you

TOWER LEADERSHIP

SELF EVALUATION

Understanding and Maximizing Practice Valuation

1. T/F - Time is your enemy

2. What is the economic value of a dental practice?

a. How much money someone will give you your practice
b. What the marketplace says your practice is worth
c. The cash value of your practice
d. The cost to replace your dental practice

3. What are the key moves to make when you sell your practice?

a. Reduce or Eliminate the brokerage fee
b. Increase the valuation to the maximum so you get the most for your asset
c. Utilize increased cashflow to reduce debt service
d. All the above

4. T/F - The best place to put your money first is your 401K

5. What is the best way to calculate the value of your practice?

a. Production
b. Collections
c. EBITDA
d. Active Patients

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

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Obstructive Sleep Apnea – Part 3 - Choosing the Right Appliance

Jonathan A. Parker, DDS

I. SUMMARY OF RESEARCH ON ORAL APPLIANCE THERAPY

A. Summary of research:

Severity of OSA	Responders
Mild OSA	*70-80%*
(5-15 events/hour)	
Moderate OSA	60-70%
(15-30 events/hour)	
Severe OSA	40-50%
(>30 events/hour)	

- Success rates vary from about 40% for severe OSA to 76% for mild OSA
- Success rates increase by 30% if the patient has a titration polysomnogram with the oral appliance
- Must advance the mandible to achieve a successful outcome in most patients
- More advancement of the mandible results in more effective outcomes
- Success rates are higher in women than men
- Prefabricated (boil & bite) appliances are not recommended as a therapeutic option or a screening for OSA
- MADs can have a significant positive effect on high blood pressure
- A non-custom TRD (TSD) may be a simple inexpensive although somewhat less effective treatment option
- CPAP is more effective than a MAD in managing OSA, but there is only a 8-12% difference in treatment success
- MADs are significantly more successful than UPPP after 12 months of treatment
- Maxillary occlusal appliances may increase severity of OSA

- **Key Article: Ramar, et al. Clinical practice guideline for treatment of OSA and snoring with oral appliance therapy: An update for 2015. J Clin Sleep Med 2015; 11(7): 773-827.**

Recommendations:

1. Sleep MD should prescribe OA for primary snoring rather than no treatment
2. Use a custom-made appliance instead of a non-custom device
3. Sleep physician should prescribe OA rather than no treatment for patients with OSA who are intolerant of CPAP or prefer alternative therapy
4. Qualified dentists should follow patients long-term to monitor potential side effects
5. Sleep physicians should conduct follow-up sleep testing after OAT
6. Sleep physicians and qualified dentists should follow-up with OSA patients on a long-term basis

II. OVERVIEW OF PATIENT'S CHARACTERISTICS AND FEATURES OF ORAL APPLIANCES

A. Appliance Design Variations

1. Materials (patient comfort)
2. Retention (clasps or other)
3. Patient response (time to adapt)
4. Adjustability (ability to change mandibular position--A-P/vertical)

5. Position and type of adjustment mechanism
6. Freedom of jaw movement
7. Lab vs. in-office fabrication
8. Chair time for insertion and adjustment
9. Tongue space
10. FDA acceptance

B. Patient's Characteristics and Selection Criteria

1. OSA severity
2. Number of teeth
3. Nasal or oral breathing
4. Occlusal scheme
   - Overbite and overjet
   - Angulation of teeth
5. Bruxism
6. Periodontal health
7. Size of mouth
8. Gag reflex
9. Patient apprehension
10. Mandibular range of motion (opening)
11. Appliance needed ASAP

C. Who are Good Candidates for Oral Appliance Therapy?

1. Clinical predictors
   - Younger age
   - Lower BMI (thinner)
   - Smaller neck size
   - Lower AHI (milder OSA)
   – Moderate and severe OSA patients can have moderately good success
   - Positional OSA
   - Good ability to advance mandible

D. Possible Contraindication for Mandibular Advancement Devices

1. Patient unable to advance mandible more than 6 mm
2. Active TMD symptoms
   - Painful opening or chewing
   - Painful TMJ noise or locking episodes
3. Insufficient teeth to support device
4. Severe periodontal disease and/or tooth mobility

Note: It is recommended that all restorative, periodontal, and TMD treatment be completed prior to appliance therapy

III. CATEGORIES OF APPLIANCES AND SELECTION CRITERIA

A. Bilateral Interlocking (Dorsal style)

1. Good candidates include patients with:
   - All levels of OSA
   - Smaller mouths (since it is a 2 piece appliance)
   - Narrow dental arches

- Heightened gag reflex

2. Less ideal for candidates with
   - Lateral bruxing
   - Deviation of jaw on protrusion

B. Bilateral Compression (Herbst style)

1. Good candidates include patients with:
   - Lateral bruxing
   - All levels of OSA
   - Need for moderate cost device
   - Deviation of jaw on protrusion
   - Medicare (Medicare approved device)
2. Less ideal for candidates with:
   - Tissue sensitivities (Screws may rub against buccal mucosa)
   - Narrow dental arches (Metal on lingual aspect limits contouring for tongue space)
   - Metal-reinforced model is higher cost

C. Bilateral Traction (Straps style)

1. Good candidates include patients with:
   - History of jaw pain (Flexibility of straps provides forgiveness for jaw comfort)
   - Lower cost (Flexible strap style only)
   - Heavy clenching or bruxing (Rigid strap style only)
   - All levels of OSA (Rigid strap style only); (For snoring or mild OSA the flexible strap style is fine)
2. Less ideal for candidates with:
   - Need for lower cost device (Rigid strap style only)
   - Plans for a bit of dental restorative work (Cannot reline nyloappliance with acrylic—Rigid strap style)
   - Straight teeth (Retention will likely be a problem)

D. Midline Traction (Anterior screw style)

1. Good candidates include patients with:
   - A need for greater interincisal opening (6 mm or more)
   - Need for a moderate priced device
   - All levels of OSA
   - Medicare (Medicare approved appliance)
2. Less ideal for candidates with
   - Narrower or shorter dental arches (Screw in anterior limits tongue space)
   - Heavy bruxers
   - Who would be best treated at an interincisal opening of 3-5 mm

E. Tongue retaining device (TRD style)

1. Good candidates include patients with:
   - Edentulous arches
   - Significant tooth mobility
   - Mild or mild-moderate OSA
2. Less ideal for candidates with
   - Clenching or bruxing
   - Nasal obstruction

SELF EVALUATION

Obstructive Sleep Apnea – Part 3 - Choosing the Right Appliance

1. Oral appliance therapy is most successful in patients who have:

a. Severe obstructive sleep apnea (OSA)
b. Had their tonsils removed
c. Mild or mild-moderate OSA
d. Had Inspire neurostimulator surgical treatment

2. T/F - Research studies on oral appliance therapy clearly show that the Bilateral Traction appliance design is the most effective design available

3. All of these are key features that a dentist needs to consider when deciding which oral appliance design will be best for the patient EXCEPT which one below:

a. The material that is used to construct the device
b. The uvula lifting component of the device
c. The amount of mandibular advancement available and ability to allow for jaw movement
d. The warranty and cost of the device

4. Which appliance design would likely be most durable and effective in a patient with heavy lateral bruxism?

a. A reinforced bilateral compression (Herbst mechanism) device
b. A hard acrylic bilateral interlocking (with wing on lower portion and block with screw on upper portion) design
c. A midline traction (screw mechanism on the anterior) device
d. Tongue retaining device

5. The patient characteristics that will provide important information when making a decision about which appliance design may fit the patient's situation best includes:

a. The number of teeth in the mouth
b. Presence of bruxism
c. Angulation of teeth
d. All of the above

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

David B. Mandell, JD, MBA

David B. Mandell, JD, MBA, of Ft. Lauderdale, Florida, is a practicing attorney in The Law Offices of David B. Mandell, PC and a principal of the wealth management firm OJM Group, LLC. He specializes in risk management, asset protection, and financial planning and has authored a number of books for doctors including, *Wealth Planning for the Modern Physician: Residency to Retirement*. Mr. Mandell also created the Category 1 CME monograph, *Risk Management for the Practicing Physician*. His articles have appeared in over 100 publications, including over 30 medical specialty journals, and he has addressed many of the nation's leading medical conferences.

Mr. Mandell holds a bachelor's degree from Harvard University from which he graduated with honors, a law degree from the UCLA School of Law where he was awarded the "American Jurisprudence Award" for achievement in legal ethics and earned his MBA from UCLA'S Anderson School of Management.

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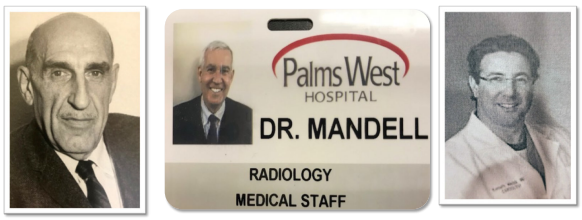
Protecting Personal and Practice Assets from Professional and Business Risk

David B. Mandell, JD, MBA

ABOUT ME



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TODAY'S PRESENTATION

1. Background on physician financial stress
2. Asset protection fundamentals
3. Shielding physicians' & dentists practice and personal assets
4. Recent developments in statutes and cases

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PHYSICIANS STRESSED ABOUT LIABILITY

- 87 percent of respondents said they are moderately-to-severely stressed/burned out on an average day.*
- Concern about liability and lawsuits are a motivating force behind the skyrocketing costs associated with "defensive medicine"**
- 2016 PubMed study: "Exploring Physicians' Dissatisfaction and Work-Related Stress: Development of the PhyDis Scale"

*Of 2,000 physicians as reports by Bouchard, Stephanie, "Impact of Physician Stress Underestimated," *HealthCare Finance News*, December 2, 2011

**Peter Ubel, "Do Malpractice Fears Cause Physicians To Order Unnecessary Tests?" Forbes.com, October 22, 2013

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TYPES OF LIABILITY FACING PHYSICIANS & DENTISTS

- Medical/dental malpractice
- Employer liability
  - Sexual harassment ("hostile work environment"); Wrongful termination (protected classes); Violation of fiduciary duty (qualified plans)
- Billing issues
  - Over-billing, improper billing, fraud, violation of anti-kickback rules, Stark rules, etc.
- HIPAA
- Premises liability
- Personal liability

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ASSET PROTECTION FUNDAMENTALS

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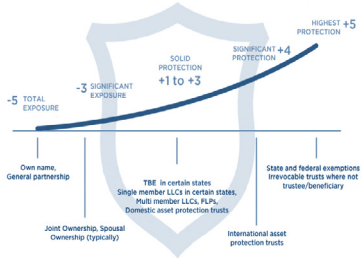
ASSET PROTECTION "SLIDING SCALE"



*The scale presumes tools are created and utilized properly and when fraudulent transfer rules will not apply.

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BEST ASSET PROTECTION NOT AP

- Why wealth protection MUST be tied to wealth creation: timing
- Like tax planning: economic substance
- Top (+5) tools are primarily not AP tools
- AP must be implemented in a multidisciplinary approach

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PRACTICE ASSET PROTECTION

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PRACTICE/ANCILLARIES PROTECTION

- Insurances
- Choice of entity
- LLC lease-backs
- Qualified retirement plans
- Non-qualified plans
- Advanced tools

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INSURANCES AS FRONT-LINE PROTECTORS

- Types of policies
  - Medical or dental malpractice
  - General Liability
  - Cyber
  - Landlord
  - Other
- Be aware of coverage limitations, deductibles
- Review and get second opinions

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CHOICE OF ENTITY FOR NON-PRACTICE BUSINESSES

	Corporation	LLC
Inside Protection	Yes. General corporate law principles.	Yes. General corporate law principles.
Outside Protection	**None, unless licensure for professional corporations.**	Charging order protections available. (+2)

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PROTECTING EQUIPMENT & REAL ESTATE

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MAXIMIZE PROTECTIVE BENEFIT PLANS

- **Shields #1 asset – cash flow**
- Qualified retirement plans (QRPs): state exemption laws vary
  - Most states also protect QRPs to an unlimited value
  - Some states: value limitations
  - Some states: timing claw-backs
- Non-qualified plans – depends on funding mechanism
  - COLI – about 20 states provide (+5) exemption
  - Other states: can use trusts or LLCs

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PERSONAL ASSET PROTECTION

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TITLING ASSETS: DOES IT PROTECT?

- Spousal
- Basics: Tenancy in common, joint tenancy
- Tenancy by the Entirety (TBE)
- Community Property

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START WITH EXEMPT ASSETS (+5)

- (+5) Federal or state exempt asset
- No gifting, compliance, accounting fees or special taxes
- Protection cannot be matched by any other planning
- Federal bankruptcy exemptions for QRPs and IRAs
- States vary widely
  - Homestead
  - QRPs, IRAs
  - Life insurance and annuities

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LLCs (+2): IDEAL FOR MOST ASSETS BEYOND EXEMPTIONS

- Inside Creditors
- Outside Creditors Isolates their lawsuit damage only to LLC property
  - Creditors can only get "charging order" against the LLC interest (+1 to +3) depending on use, compliance
  - Should tie into your estate plan
- "Building blocks" of asset protection
- *Control and Access*

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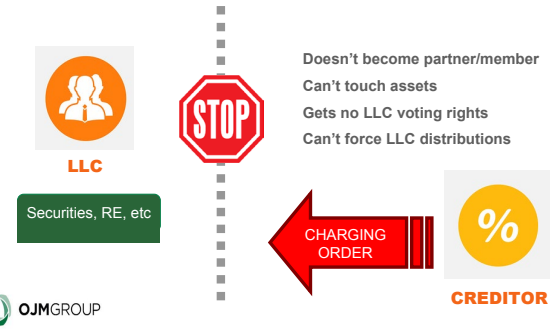
WHAT A "CHARGING ORDER" MEANS



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KEYS TO PROTECTION: LLCs

- Proper operating agreement
- Compliance with annual formalities
- Non-asset protection purpose: estate planning/gifting
- Jurisdiction: use the best state, when you have options
- Many LLCs are lacking in 1 of the 4 elements above: vulnerable
- Key: experienced attorney who has annual monitoring/gifting plan

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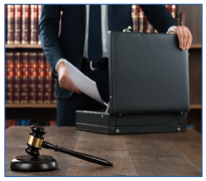
USING TRUSTS TO SHIELD ASSETS

- Revocable trusts
  - "Family," "living," "loving trusts"
  - Valuable for probate avoidance, in event of incapacity
  - No asset protection while you are alive
- Irrevocable trusts
  - Many types, including ILITs, GRATs, CRTs and DAPTs
  - Because they are irrevocable, strong asset protection
  - **DAPT is most innovative, newest**
    - 20 states
    - "Hybrid" version for other states
    - Different than LLCs



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PROTECTING THE HOME

- Homestead protection is best
- Tenancy by the entirety (TBE) in those states that protect TBE well
- Next best option:
  - Usually debt shield

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NEW STATUTES & CASES IN ASSET PROTECTION

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NEW STATUTES

- Exemption improvements
  - CA homestead
    - From $75,000-$150,000
    - To $300,000- $600,000
- DAPT adoption
  - Latest states: Indiana and Connecticut
- LLC & DAPT improvement
  - Ohio LLC: expressly in statute -- no foreclosure or equitable remedies and no right to retain possession (already a non-"blank check" charging order statute)
  - Ohio: Allows a family-owned LLC to be a DAPT trust company

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CASE 1:
MANICHAEAN CAPITAL, LLC v. EXCELA TECHNOLOGIES, INC.

- Delaware LLC case
- Court allowed "Reverse Piercing"
- Unique facts not common for doctors
  - $60 million statutory merger remedy
  - Parent-subsidiary where sub under-capitalized
  - Court allowed sub creditors to penetrate up to parent
- Does this impact viability of Delaware LLCs for outside protection?

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CASE 2:
EARTHGRAINS BAKING CO. v. SYCAMORE

- 10th Circuit Court of Appeals Case
- Court has authority to order the assets held by an LLC to be liquidated and the proceeds to be transferred to a managing member's creditor to satisfy a charging order (reach into the LLC to its assets)
- However, appears to be the case when there have been distributions from the LLC that should have gone to the creditor anyway as well as other egregious conduct
- Does this impact viability of LLCs to shield assets in the 10th Circuit? (WY, UT, CO, KS, NM, OK)
- Is it limited to states that allow a Court a "blank check" power to expand/innovate the "charging order" remedy?

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ABOUT OJM GROUP

- Unique, fee-based wealth management firm
- 1,000 physician clients in 48 states
- Multidisciplinary; three divisions
- Corporate and personal planning
- Goal: Reducing physician financial stress

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HOW WE WORK WITH PHYSICIANS

- **Investing**
  - RIA
  - Fiduciary, independent custodian
  - Tax-focused
- **Insurance and Benefits**
  - Life, disability, long term care insurance
  - Through partner firm, P&C coverages
  - Qualified and non-qualified plans
- **Consulting**

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PERSONAL WEALTH PLANNING

DIAGNOSTIC vs. TREATMENT

ADVICE & EXPERTISE FOR A FLAT FEE

BUILDING A RELATIONSHIP

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CONTACT THE PRESENTER

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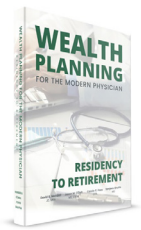

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SELF EVALUATION

Protecting Personal and Practice Assets from Professional and Business Risk

1. According to the Healthcare Finance News survey referenced in the talk, the percentage of physicians surveyed who felt moderately-to-severely stressed was:

a. 17%
b. 37%
c. 47%
d. 87%

2. T/F - Medical malpractice is one of many potential liability sources for most doctors.

3. Which of the following asset protection tools generally get the top (+5) protective rating:

a. Family limited partnerships
b. Community property
c. Spousal ownership
d. State or federally exempt assets

4. Which are often called the “building blocks” of asset protection:

a. Non-qualified plans
b. Limited liability companies (LLCs)
c. Irrevocable trusts
d. Revocable trusts

5. T/F - Revocable trusts do not provide asset protection to you as the grantor while you are alive.

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

David Schwab, PhD

David Schwab, PhD, of Orlando, Florida, is principal of David Schwab & Associates, Inc. a marketing consulting firm providing in-office seminars, online training and consulting, customized patient education videos, and other practice management services. He speaks, writes and consults on helping dentists grow their practices, educate their patients, and train their teams to optimize practice profitability through practice management and marketing approaches for the entire dental team by developing brand identity, leveraging social media, revving up internal marketing, communications and team leadership, improving and growing referral relationships, and increasing case acceptance.

Dr. Schwab's articles have appeared in numerous publications, including *The Journal of the American Dental Association, Dental Economics, The Seattle Study Club Journal,* and *The Journal of the Canadian Dental Association*. His website, www.davidschwab.com, features blogs, articles, and videos.

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Practice Transition: Looking Beyond the Deal

David Schwab, Ph.D.

What the Buyer Should Know

- You may start out as an associate with option to buy.
- A buy-in can be done over time or as a complete practice purchase in one transaction.
- Tips for hitting the ground running.

David Schwab, Ph.D.

Be Ready on Day One

- Broadway show: when the curtain goes up, you have to be ready.
- Don't buy the practice and then start thinking about how to run it.

David Schwab, Ph.D.

Be Ready on Day One

- Broadway show: when the curtain goes up, you have to be ready.
- Don't buy the practice and then start thinking about how to run it.
- You need a calendar and to-do list—work backwards from the closing date.
- Have a plan for branding and communications.

David Schwab, Ph.D.

Advice to Buyers

- Buying a practice is the biggest financial transaction of your life.
- Bank will lend you a large sum of money.
- Don't be intimidated—be prepared!

David Schwab, Ph.D.

Establishing Your Team of Professional Advisors

1. Attorney
2. Accountant
3. Practice Management/Marketing Consultant

David Schwab, Ph.D.

Establishing Your Team of Professional Advisors

1. Attorney
2. Accountant
3. Practice Management/Marketing Consultant
4. IT Consultant
5. Financial Advisor
6. Insurance Agent
7. Real Estate Agent
8. Vendors

David Schwab, Ph.D.

More Items on Your To-Do List

1. Practice Name and Website
2. Signage/Logo
3. Practice Management Software
4. Equipment
5. Social Media Accounts

David Schwab, Ph.D.

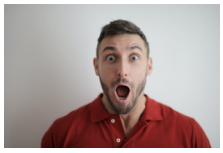
More Items on Your To-Do List

1. Practice Name and Website
2. Signage/Logo
3. Practice Management Software
4. Equipment
5. Social Media Accounts
6. Letters to Patients
7. Letters to Referring Dentists (for specialty practices)
8. Marketing Plan
9. News Release
10. Photos/Videos

David Schwab, Ph.D.

Expectations—Avoid Surprises

1. Moving target.



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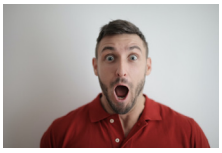
Expectations—Avoid Surprises

1. Moving target.
2. How long will seller stay?



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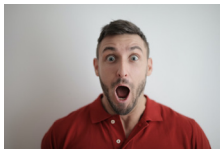
Expectations—Avoid Surprises

1. Moving target.
2. How long will seller stay?
3. Buyer should judiciously use seller as mentor.



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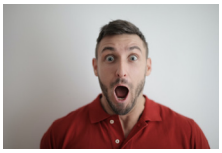
Expectations—Avoid Surprises

1. Moving target.
2. How long will seller stay?
3. Buyer should judiciously use seller as mentor.
4. Can the seller accept the role as someone who works in the practice?



David Schwab, Ph.D.

Expectations—Avoid Surprises

1. Moving target.
2. How long will seller stay?
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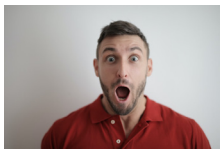

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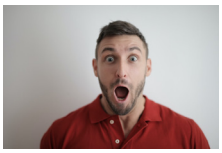

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Expectations—Avoid Surprises

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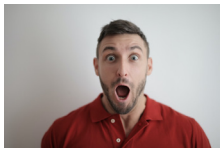
6. In specialty practices, will referring dentists send patients to buyer?
7. Talk about practice numbers at least weekly.



David Schwab, Ph.D.

Team Management

1. You need enough oars in the water—many practices in transition are understaffed.
2. Resist temptation to reduce/change staff right away.

David Schwab, Ph.D.

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3. Talk to an attorney before making staff decisions.
4. Don't fall into the gossip trap.

David Schwab, Ph.D.

Team Management

1. You need enough oars in the water.
2. Resist temptation to reduce/change staff right away.
3. Talk to an attorney before making staff decisions.
4. Don't fall into the gossip trap.
5. Develop/review job descriptions.
6. Criticize in private; praise in public.
7. Team craves leadership.
8. Communicate: morning huddles/frequent meetings.

David Schwab, Ph.D.

Final Tips for Buyers

- Stay positive.
- Don't get overwhelmed.

David Schwab, Ph.D.

Final Tips for Buyers

- Stay positive.
- Don't get overwhelmed.
- Break it down into manageable steps.
- Work ON the practice, not just IN the practice.

David Schwab, Ph.D.

Advice to Sellers

- The practice is only worth what a willing buyer will pay.

David Schwab, Ph.D.

Advice to Sellers

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- Take the emotion out of the valuation.

David Schwab, Ph.D.

Advice to Sellers

- The practice is only worth what a willing buyer will pay.
- Take the emotion out of the valuation.
- Corporate buyers may pay more—but there are tradeoffs.

David Schwab, Ph.D.

20 Questions Sellers Need to Ask

1. What marketing strategies should a new dentist use to build a patient following?
2. Which of these will you personally implement and how much time will you spend on them?
3. How many people have you ever fired, hired, or supervised?

David Schwab, Ph.D.

20 Questions Sellers Need to Ask

4. What is your management philosophy?
5. What is the funniest thing that ever happened to you?
6. If this opportunity at this practice does not work out, what are your alternative plans?

David Schwab, Ph.D.

20 Questions Sellers Need to Ask

7. How strong are your ties to this community?
8. Everyone enters dental school with preconceived ideas. What surprised you most about the reality of dental school?

David Schwab, Ph.D.

20 Questions Sellers Need to Ask

9. A senior in high school with excellent grades asks you whether he should set a goal of dentistry as a career. What would you tell that person? What pros and cons would you bring up?

David Schwab, Ph.D.

20 Questions Sellers Need to Ask

10. What aspects of dentistry do you like the least?
11. Putting aside the cost factor, how many hours of continuing education courses would you like to take in your first year with us?
12. What are your clinical strengths and weaknesses?

David Schwab, Ph.D.

20 Questions Sellers Need to Ask

13. What are your interpersonal strengths and weaknesses?
14. If you had not become a dentist, what career path would you have chosen?
15. Describe a high-pressure situation you dealt with in the past. How did you cope with it?

David Schwab, Ph.D.

20 Questions Sellers Need to Ask

16. Who has been the most important person in your own self-development?
17. If you could, with my permission, wave a magic wand and instantly change anything at all in this practice, what would it be?
18. Why do you have a passion for dentistry?

David Schwab, Ph.D.

20 Questions Sellers Need to Ask

19. A new patient comes in to see you and needs (give one example, such as a crown, several restorations, dental implants, etc.). Let's say I am that person. Talk to me as though I am the patient. Tell me why I need this treatment and answer the questions I pose to you.

David Schwab, Ph.D.

20 Questions Sellers Need to Ask

20. There are always interpersonal issues between professionals. When issues arise, how do you think we should work through them?

David Schwab, Ph.D.

Messages to Prepare the Team

1. Dr. Newcomer is an outstanding individual who will take over the practice and continue my legacy.
2. This person will help me run the practice on day one.

David Schwab, Ph.D.

Prepare the Team

1. Dr. Newcomer is an outstanding individual who will take over the practice and continue your legacy.
2. This person will help me run the practice on day one.
3. When the practice is sold, Dr. Newcomer will be your boss.
4. Don't expect Dr. Newcomer to do everything the same as always.

David Schwab, Ph.D.

Communicate and Reassure Patients

- If you are not leaving immediately, tell patients, "I am not going anywhere."

David Schwab, Ph.D.

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- If you are not leaving immediately, tell patients, "I am not going anywhere."
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David Schwab, Ph.D.

Communicate and Reassure Patients

- If you are not leaving immediately, tell patients, "I am not going anywhere."
- State that you will remain in the practice for "the foreseeable future."
- Assure patients that they can trust Dr. Newcomer with their dental needs.

David Schwab, Ph.D.

What To Ask When Checking References

1. Clinical ability—not just academic achievements.
2. Maturity
3. Character
4. Work Ethic

David Schwab, Ph.D.

What To Ask When Checking References

1. Clinical ability—not just academic achievements.
2. Maturity
3. Character
4. Work Ethic
5. Interpersonal Skills
6. Management Ability
7. Leadership Ability
8. Judgment

David Schwab, Ph.D.

Your Relationship with Buyer Will Change

1. Expectations and goals will evolve.
2. You will go from the boss to the employee.
3. You will be viewed differently the closer you get to leaving the practice.

David Schwab, Ph.D.

Your Relationship with Buyer Will Change

1. Expectations and goals will evolve.
2. You will go from the boss to the employee.
3. You will be viewed differently the closer you get to leaving the practice.
4. You need to be proud of your life's work and the person you picked to succeed you.
5. Secret to success is continual open communication.

David Schwab, Ph.D.

It's Your Turn

- Confidential phone call with me—national perspective.
- Goal: Help you train the team, attract and educate patients, and help you become more profitable.
- Topics: new patient acquisition, case acceptance, team training or management, transitions, etc.
- As a courtesy, there is no charge.

SELF EVALUATION

Practice Transition: Looking Beyond the Deal

1. T/F - The buyer's team of advisors should include vendors.

2. T/F - It is generally advantageous for the buyer if the seller remains with the practice for a period of time after the sale.

3. The course recommended that during the transition, the buyer and seller should meet to talk about practice numbers:

a. Weekly.
b. Monthly
c. Quarterly
d. Every six months.

4. T/F - One disadvantage of selling a dental practice to a corporate buyer is that these types of organizations generally make lower offers than independent buyers.

5. T/F - Many practices in transition are overstaffed.

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

SNORING & SLEEP APNEA
DENTAL TREATMENT CENTER

7225 Ohms Lane Suite 180 Edina, MN 55439
P 952.345.0290 F 952.920.0105
info@snoringandsleepapneamn.com
www.snoringandsleepapneamn.com

Obstructive Sleep Apnea – Part 4: Appliance Side Effects & Growing a Sleep Practice

Jonathan A. Parker, DDS

I. POTENTIAL SIDE EFFECTS AND COMPLICATIONS OF ORAL APPLIANCE THERAPY

A. Short-term Side Effects with Mandibular Advancement Devices (MADs)

1. Excessive salivation or dry mouth
2. Discomfort/pain in teeth or jaw
3. Discomfort/pain in jaw
4. Temporary change in occlusion
5. Perception of tooth mobility
6. Soft tissue irritation
7. Allergic reactions

B. Long-term Side Effects with MADs

1. Jaw Pain
2. Permanent occlusal changes
3. Tooth movement
4. TMJ noise or restricted jaw range of motion

C. Prevalence of Side Effects and Complications

1. Doff, et al. *Clin Oral Invest* 2012; 16: 689-697
2. Doff, et al. *Clin Oral Invest* 2013; 17: 475-482
3. Pliska, et al. *J Clin Sleep Med* 2014; 10: 1285-1291
4. Sheats, et al. *J Dent Sleep Med* 2017; 4: 111-125
5. Minagi, et al. *J Clin Sleep Med* 2018; 14: 119-125

D. Understanding and Managing Side Effects

1. Why do TMD symptoms occur?
   - Inflammation in the TMJs
   - Muscle pain
2. Causes of *unilateral* jaw pain
   - Asymmetrical jaw position on appliance
   - Uneven occlusal contact
   - Appliance is not seating completely
   - Pressure on jaw while sleeping on side or stomach
3. Causes of *bilateral* jaw pain
   - Mandibular advancement beyond tolerance of jaw muscles and TMJs
   - Vertical dimension not within jaw tolerance
   - Appliance is too tight or too loose
4. Managing jaw pain—Unilateral and Bilateral
   - Self-care program of moist heat, soft diet, NSAIDs, managing clenching/bruxing
   - Adjust the appliance to resolve the underlying cause (listed above)
5. Why do occlusal changes occur?
6. Preventing occlusal changes

- Jaw exercises
- Morning positioner program

7. Managing occlusal changes
   - Use of morning positioner 3-4x/day
   - Discontinuing MAD and trial of CPAP

II. GROWING YOUR DENTAL SLEEP MEDICINE PRACTICE

A. Integrating Dental Sleep Medicine into Your Practice

1. Staff training is vital
2. Set aside half-day in schedule for snoring/OSA patients
3. Develop systems in office specific for snoring/OSA patients
4. Medical insurance reimbursement is different than dental insurance but it is not difficult—Have insurance person get training

B. Guidelines for Insurance Reimbursement

1. Polysomnogram confirming OSA diagnosis
2. Letter or notes from MD recommending appliance
3. Letter from treating dentist
4. Medical insurance claim form
   - Diagnosis code for OSA (ICD# G47.33)
   - Oral appliance code (Custom appliance = E0486)

III. SUMMARY

SELF EVALUATION

Obstructive Sleep Apnea – Part 4: Appliance Side Effects & Growing a Sleep Practice

1. The most common side effects that occur in the first few weeks of using the oral appliance include:

a. Cough, chest tightness, mouth dryness
b. Soreness in the teeth, jaw soreness, increased salivation (drooling)
c. Plugged sensation (moderate hearing loss) in the ears, tooth mobility, nasal obstruction
d. Cough, increased salivation, tooth mobility

2. The first step in managing aching or pain in the jaw area after using the oral appliance includes:

a. Fabricating a flat plane splint (occlusal appliance) to resolve the pain
b. A referral to a pain specialist for a comprehensive pain evaluation and treatment
c. Use of palliative therapy including moist heat, softer diet, tools for managing clenching/bruxism, and non-steroidal anti-inflammatory medications
d. Remaking the mandibular advancement device

3. The most frequent reasons for unilateral jaw pain after using the mandibular advancement device is:

a. Occlusal contact is heavier on one side or the jaw treatment position on the device is set-up asymmetrically
b. The jaw treatment position is too far forward or the vertical dimension is closed down too much
c. The vertical dimension is opened too much or the screw mechanism is rubbing on the buccal mucosa on the affected side
d. The jaw treatment position is not advanced far enough or the screw mechanism is rubbing on the buccal mucosa on the affected side

4. Research studies show that it is possible for a patient to have tooth movement as a result of using a full-coverage mandibular advancement. The most common changes in tooth position after using the device for a long period of time are:

a. Lingual tipping (retroclination) of the upper and lower cuspids
b. Posterior inclination of the lower bicuspid/premolar teeth
c. Anterior tipping/inclination of the upper molars
d. Lingual tipping (retroclination) of the upper anterior teeth and labial tipping (proclination) of the lower incisors

5. Which of the following statements are accurate based on the research information related to potential changes in occlusion associated with using a mandibular advancement device:

a. The overbite and overjet tend to change slightly each year with ongoing use of the device
b. Over 40% of patients will have an improvement in their maxillomandibular relationship and bite
c. Most patients will have no jaw soreness or functional problems with their jaw (chewing, etc.) associated with the bite changes
d. All of the above are true

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

Barry A. Franklin, PhD

Barry A. Franklin, PhD, of West Bloomfield, Michigan, serves as Director, Preventive Cardiology and Cardiac Rehabilitation, at Beaumont Health, Royal Oak, MI, as well as Professor, Internal Medicine, Oakland University William Beaumont School of Medicine. He is past president of the American Association of Cardiovascular and Pulmonary Rehabilitation and the American College of Sports Medicine. Currently he serves on the Board of the American Society for Preventive Cardiology.

Dr. Franklin is past editor in chief of the *Journal of Cardiopulmonary Rehabilitation and Prevention* and currently serves on the editorial boards of 15 other journals. He has written or edited more than 700 scientific and clinical publications, including 103 book chapters and 27 books including his latest, "*GPS for Success*" and has given over 1000 invited presentations worldwide. In 2015, he was listed in *The World's Most Influential Scientific Minds* (Clinical Medicine).

You may contact Dr. Franklin with your questions or comments at Barry.Franklin@Beaumont.edu, or through his website: www.drbarryfranklin.com.

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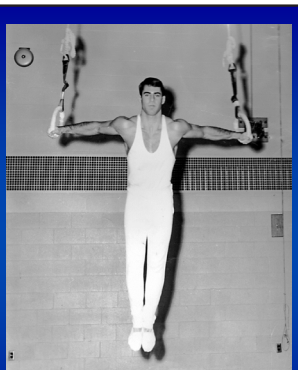
Barry A. Franklin, PhD
Director of Preventive Cardiology and Cardiac Rehabilitation

The 9 Strategies of Highly Successful and Effective Leaders

Life Aspirations ?



Kent State University, October 12, 1967
My Goals at the time ?

A Simple Question?

More than four decades ago, I became fascinated with a simple question: "Why do some people thrive while others seem to tread water and merely survive ?" After years of formal education, I realized that virtually no college course had prepared me for the "real life" career challenges I'd begun to experience. To find out, I began reading everything I could on leadership and success strategies, and carefully studied the "stars" in their respective fields. Were there common behaviors they exhibited on a daily basis ? You bet there were ! The "take home message" ? Leadership and professional opportunities don't just happen. YOU CREATE THEM, by demonstrating certain ACTIONS and behaviors on a regular basis.

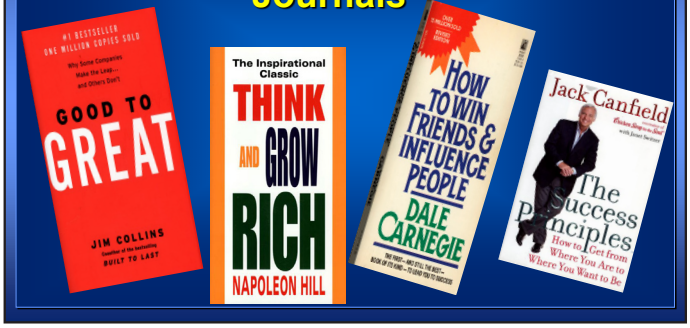
"YOU ARE YOUR OWN FORTUNE COOKIE"---Car Bumper Sticker

Top of the Hierarchical Order of Human Needs ?

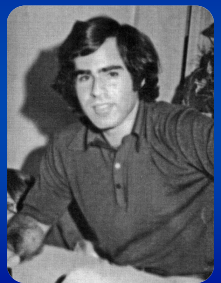
"The meaning of life is to find your gift. The purpose of life is to give it away."

Pablo Picasso

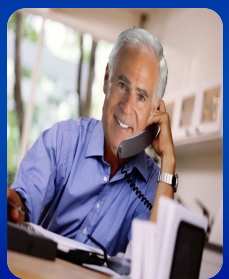
For Starters, Expand Your Library…Beyond Medical/Clinical Journals



Share Some Personal Experiences/Inspirational Stories I Learned Along the Way About Leadership & the 'Setback-Lined' Road to Success…*



4+ decades of work/association experience

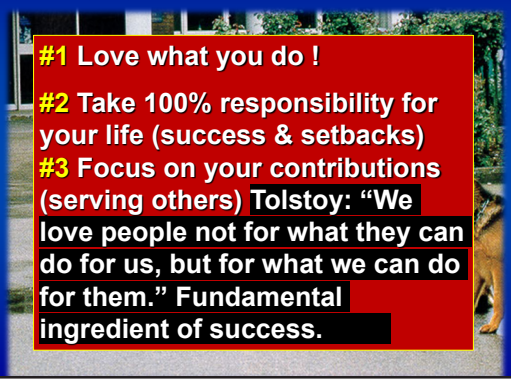


"If you want the rainbow, you've got to put up with the rain." ----Dolly Parton

Outline

- Foundational factors
- Nine strategies for success
- Intangibles: heighten your visibility, commit to never-ending improvement, exceed people's expectations, strive for greater rewards, organizational membership
- Some final thoughts….

Setting Yourself Apart from the Crowd : Foundational Factors for Success---The Big "3"



#1 Love what you do !

#2 Take 100% responsibility for your life (success & setbacks)
#3 Focus on your contributions (serving others) Tolstoy: "We love people not for what they can do for us, but for what we can do for them." Fundamental ingredient of success.

"The only way to do great work is to love what you do. If you haven't found it yet, keep looking." *Steve Jobs (1955- 2011)*

Take 100% Responsibility for Your Life:

The "10" Most Powerful Two Letter Words

If It Is To Be, It Is Up To Me.

My Thailand Trip & the Universal 'Secret" to Success

Making a Difference: Serving Others*

"You can get anything you want in life, if you help enough other people get what they want."

Zig Ziglar


Steve Jobs


Ray Kroc

Henry Ford


Walt Disney

Our Rewards Equal Our Contributions

Outline

- Foundational factors
- Nine strategies for success
- Intangibles: heighten your visibility, commit to never-ending improvement , exceed people's expectations, strive for greater rewards, organizational membership
- Some final thoughts….

Be an Optimist — Look for the "Good" in People and Situations

#1

Happiness + Optimism → Future Success

Look for the 'Good' in Everything that Life Throws at You…

An American shoe company sent two salesmen to the Australian outback. They wanted to find out whether there was any market for shoes among the Aborigines. They received telegrams from both salesmen. The first said, " No business here. The natives don't wear shoes." But the second telegram proclaimed, "Great opportunity here. The natives don't wear shoes."

The Common Question I Ask during my Interviews: How do You Read This ?

OPPORTUNITY

IS NOWHERE

The Unique Mindset of a True Super-Achiever in Life

W. Clement Stone, a self-made millionaire who mentored countless others in the fundamental principles of success, believed that every person he met or circumstance he encountered was meant to better or enrich him. He emphasized that every negative event in life contains in it the seed (e.g., opportunity) of an equal or greater benefit. Accordingly, he viewed life as a series of "Ups" and "Camouflaged Opportunities."

W. Clement Stone

When the latter occurs, you simply have to find the seed or opportunity the event provides and transition it to an "Up."

Be a Goal Setter — Program Your GPS

#2

Classic Study*

- 1,528 gifted children (IQ-genius)
- Relationship between IQ and achievement

- **Major Findings**
  - IQ was NOT the major ingredient for success
  - Three predictors of success
    - Self-confidence
    - Perseverance
    - Tendency to set goals in writing (#1)

** Dr. Lewis Terman, Stanford University, 1921*

The Single Idea For Which A Man Was Paid $25,000

"Write down the 6 most important things you had to do tomorrow. Prioritize them. Cross each one off once you've completed it. Complete unfinished items first the next day, and start the next 6." *Ivy Lee**

** Summoned by Charles M. Schwab, president Bethlehem Steel, 1918*

First Things First*

Make this one change in how you spend your day -- work on what is most important to you before you take care of everything else. Figure out the most important thing for you to be doing right now. **Do it!**

** Steven Covey*

Be a Goal Setter: Program Your GPS

A classic Volvo advertisement stated, "On the road of life there are passengers and there are drivers." The most successful people in the world are drivers – they know exactly where they are going. Moreover, they write (or digitalize) their goals and look at them often.

"Writing your goals is a gateway for transforming the world of conceiving (ideas) and believing to a world of achieving. Until it's on paper, it's vapor."
--Sir John Hargrave

Big Rocks: Scheduling Your Activities*

Big Rocks

Plus Gravel

Plus Sand

Plus Water

*Your "Hour of Power"

Be Proactive — Just Do It!

"Your life is a direct result of what you DO—not necessarily what you say you're going to do." –Art Williams

#3

THE STORY ABOUT FIVE PENGUINS: PICTURE THIS .....

Contemplators Personified

Take Action: The # 1 Success Strategy

"Inertia is the single greatest barrier to success. It's also the easiest to overcome. All you have to do is act. Any action you take, no matter how trivial, will do the trick. The easier you make it on yourself to act, the easier it is to overcome inertia. Focus on a single step, the smallest step you can think of. The moment you take action -- any action -- you will conquer inertia."

Keith Ellis

The Only Productivity Tip You'll Ever Need ?

A body at rest tends to remain at rest and a body in motion tends to remain in motion.

We have more than enough time. Achievement is driven by insight and selective action. Insight requires time – and time, despite conventional wisdom, is there in abundance.

OVERCOME INERTIA BY STARTING THE JOB !!!!!

The Law of GOYA

"Get Off Your Ass"

Tommy Hopkins

This simple law is very effective. You have to do something every day that moves you toward your goals and dreams.

The Universe Rewards Action!

Be Persistent — Overcoming Setbacks that Line the Road to Success

#4

Persistence/Tenacity Pays*…

- Thomas Edison had thousands of learning experiments before he invented the light bulb.
- Abraham Lincoln lost eight elections before becoming president.
- Colonel Sanders suffered more than 1,000 rejections before he sold his first chicken recipe.
- Theodor Geisel's first book was turned down by 28 publishers.

My Story, Student Interaction…I'm the King……

"The way to succeed is to double your failure rate."

Thomas J. Watson
(Founder of IBM)

"You miss 100 percent of the shots you don't take."

Wayne Gretzky
(Hockey Legend)

Michael Jordan: "I have missed more than 9,000 shots in my career. I have lost almost 300 games. On 26 occasions, I have been entrusted to take the game-winning shot, and I missed. I have failed over and over again in my life. And that's precisely why I succeed."

Benefits of Failure

"I think it fair to say that by any conventional measure, a mere 7 years after my graduation day, I had failed on an epic scale. An exceptionally short-lived marriage had imploded, and I was jobless, a lone parent, and as poor as it is possible to be in modern Britain, without being homeless."

"So why do I talk about the benefits of failure? Simply because failure meant a stripping away of the inessential. I stopped pretending to myself that I was anything other than what I was and began to direct all my energy into finishing the only work that mattered to me. I had an old typewriter and a big idea……."

Excerpted from J.K. Rowling's Commencement Speech at Harvard University, 2008

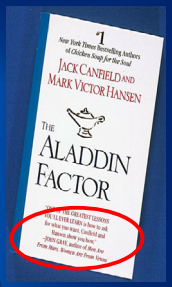
Be Someone Who Asks for What You Want — Reject Rejection

#5

The Aladdin Factor

"Ask, and it shall be given you."

Sermon on the Mount



"You've got to ask! Asking is, in my humble opinion, the world's most powerful-and neglected-secret to success and happiness."
Philanthropist, multi-millionaire Percy Ross

Be a Communicator — Improve Your Speaking and Writing Skills

#6

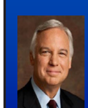
" To an astounding degree, your ability to use our language and the depth and breadth of your vocabulary will determine your income and future career goals." --- Jack Canfield

The Power of Words: A Sign Change that Opened People's Eyes, and Their Wallets

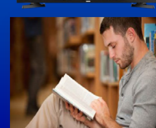
An old beggar sat on a busy street corner, next to a metal pail, asking for spare change from passersby. His hand-held sign read: "I'm blind, please help." Most people walked briskly past the man. A young woman noticed this and asked if she could change his sign. Not knowing what she had written, he soon felt like he had hit the jackpot, as coins increasingly filled his pail. Later, on her way to lunch, the lady stopped by to see him. He asked, "how did you change my sign?" "I simply scrawled some words that made people realize something they took for granted," she replied. "It's a beautiful day, and I can't see it."

Blockbuster Success Secret: Enhance Your Communication Skills + and Add 9 Additional 40-hour Workweeks/Year to Accomplish Your Goals

W. Clement Stone: "Eliminate 1-hour of TV each day → 365 hours per year to accomplish your goals (e.g., self-help, inspirational reading).



Jack Canfield: "This habit alone, reading 1 book/week would, over the next 20 years, allow you to read >1000 books and by applying only a fraction of what you've learned, you'd be miles ahead of your peers in laying the foundation for an extraordinary life."



Become a Master Communicator*

- Improve your writing/speaking skills
- Seek graduate training/education
- Become "active" in professional organizations (# 1)
- Attend conferences (better yet, PRESENT at them) ; Practice speaking regularly….
- Leaders are readers; Talks are auditions!

"The ability to speak is a shortcut to leadership and distinction. The person who can speak acceptably is usually given credit for an ability all out of proportion to what he/she really possesses. "

*** Lowell Thomas**

Be a Connector — The Power of Positive Associations, Collaborations, and Relationships

#7

The people that you surround yourself with can have a profound and favorable impact on your career direction and ultimate success. High achievers…..

- Typically recruit an extraordinarily talented support team of professionals.
- Join professional organizations in their areas of interest—and become active in them.
- Understand the multiplier effect of collaboration.
- Appreciate the "boomerang impact" of mentoring and giving back.

Surround Yourself with 'Stars': The Power of Positive Association

Advertising agency empire-builder David Ogilvy established a tradition of welcoming new executives with a gift of 6 wooden dolls, each smaller than the other, one inside the other. When the recipient finally gets to the 6th little doll, the smallest doll, and opens it, he/she finds this message:

If each of us hires people who are smaller than we are, we shall become a diminishing company. But if each of us hires people who are bigger (better/smarter) than we are, we shall become a thriving company of giants.

USE COLLABORATION TO EXPONENTIALLY INCREASE YOUR PRODUCTIVITY

People working together to accomplish even more: The Clydesdale Analogy

- One Clydesdale horse can pull 8,000 pounds.
- Two Clydesdale horses can pull 24,000 pounds.
- Two Clydesdale horses that are matched correctly and trained can pull 32,000 pounds!

Be a People Person

#8

People Skills → Success

Most chief executives of major companies, when asked what one single characteristic is most needed by those in leadership positions, replied, "The ability to work with people." What are they looking for ? "The BIG 6".

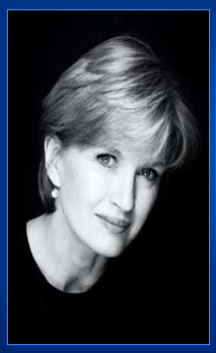
1. *INTEGRITY: THE #1 QUALITY FOR SUCCESS*
2. *GIVE PEOPLE MORE THAN THEY EXPECT*
3. *OFFER COLLEAGUES/EMPLOYEES PRAISE/APPRECIATION*
4. *MAKE PEOPLE FEEL IMPORTANT (Danny Meyer, Founder Shake Shack)*
5. *INDIVIDUALS WHO ARE SIMPLY NICE PEOPLE*
6. *DON'T TELL PEOPLE, SHOW THEM*

The Likeability Factor

"It's nice to be important, but it's more important to be nice."

Shay Kennedy

TAKE THE HIGH ROAD . . .



TAKE THE HIGH ROAD . . .

Class Act

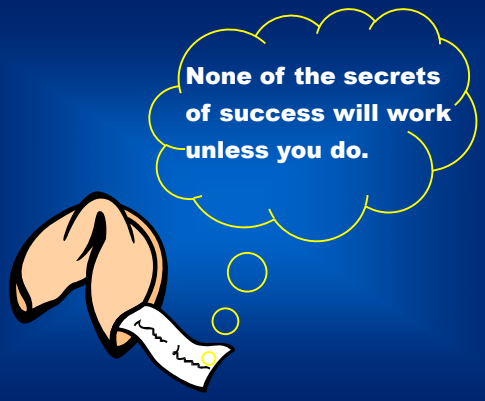
Wisest Counsel I Ever Received?

- It was from a Berkshire Hathaway board member, and it boiled down to exercising restraint and humility. He told me:
- "You can tell a guy to go to hell tomorrow – you don't give up the right. But keep your mouth shut today and see if you feel the same way tomorrow."
- Why ? "Because the person you did not tell off today, may be in a position to 'open up a door' for you tomorrow, or in the near future." Buffett learned.

Warren Buffett

Be Willing to Pay the Price
—
The Law of Sow and Reap

#9



What is the Law of Sow and Reap ? Positive Actions Today Produce a Rich Harvest in the Future

Casino Analogy

To reap is to gather a crop and to sow is to plant seeds. Accordingly, future outcomes are inevitably shaped by present actions or, what you do today, can influence all your tomorrows. The significance of this law?

We reap what we sow, but always more than we sow, and at a later date. In other words, to a large extent, you get back from life what you put into it – and more.

Preparing for Success

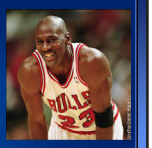
The great Italian violinist Niccolò Paganini was once partway through a solo performance when one of his strings suddenly broke – then a second string snapped, and then a third, leaving him with only a single violin string. He not only continued, but flawlessly carried off a virtuoso - performance, even limited to a single string, as the audience watched in awe! His secret? He had put in long hours practicing the instrument without all its strings, and even composed music to be played on a violin with just one string.

Requisition for Success? Preparation for Varied Circumstances

"Achievement takes preparation. Once you understand what an individual actually did to prepare for these kinds of events, then it becomes more understandable. Beyond talent, hard work differentiates the chumps from the champions."

Professor Anders Ericsson
Florida State University

Prepare, Prepare, Prepare! Be Willing to Pay the Price



"When I played with Michael Jordan on the Olympic team, there was a huge gap between his ability and the ability of the other great players on the team. But what impressed me was that Michael was always the first one on the floor and the last one to leave."

Steve Alford, Olympic gold medalist, NBA player

The 10,000 Hour Rule: A Common Trait of Highly Successful People*

One thing that seemed to be clear was that in order to be successful in anything, you need to put in 10,000 hours of work. Gladwell goes on to discuss professional athletes*, businessmen like Bill Gates, and musicians like the Beatles. They all prepared for their success.

Prepare, prepare, prepare, + prepare (one more time).

** Malcolm Gladwell, Outliers*

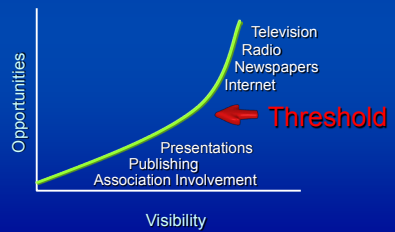
Law of Sow & Reap: The 'Famous' Gary Player Airport Story

Outline

- Foundational factors
- Nine strategies for success
- **Intangibles: heighten your visibility, commit to never-ending improvement , exceed people's expectations, strive for greater rewards, organizational membership**
- Some final thoughts….

VISIBILITY LEADS TO OPPORTUNITIES

THERE'S A WORLD OUT THERE, WAY BEYOND YOUR WORKPLACE



A Cardinal Tenet of Success ? It Pays to be Just a Little Bit Better……

PGA Tour 2002 Scoring Average

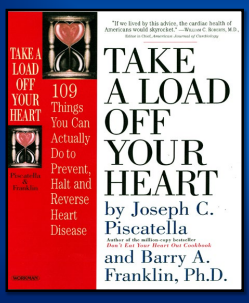
Rank	Player	Average
1	Tiger Woods*	68.56
2	Vijay Singh	69.47
3	Ernie Els	69.50
4	Phil Mickelson	69.58
5	Nick Price	69.59
6	Retief Goosen	69.69
7	David Toms	69.73
8	Justin Leonard	69.86
9	Fred Funk	69.99
10	Sergio Garcia**	70.00

** $6.9 million; ** $2.4 million*

Give People More Than They Expect ……

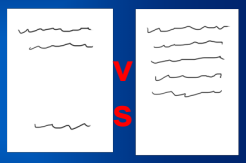
It's been reported that one New York cab driver makes **$40,000+** more a year in **tips** alone than other cabbies. Why? Because he offers passengers a choice of music, several newspapers, cold drinks, or fresh fruit. In hectic brusque Manhattan, his small acts of decency make him stand out.

My Northwest Airlines Story: Exceed People's Expectations



Strive for Greater Rewards: Go for the Gold…….

Exam Options



"Congratulations, you have just received an 'A' in this class. Keep believing in yourself."

The 'Magic' of Organizational Membership ?

"Dedicate your life to a cause greater than yourself, and your life will become a glorious adventure."

Mack Douglas

?

Active Association Involvement

Leadership, collaboration, writing, research, invited presentations, working with "stars" around the world who share your passion.

MasterCard **Priceless!**

American College of Sports Medicine · Founded 1954 ·

CVPR American Association of Cardiovascular & Pulmonary Rehabilitation

American Heart Association. Learn and Live.

Outline

- Foundational factors
- Nine strategies for success
- Intangibles: heighten your visibility, commit to never-ending improvement , exceed people's expectations , strive for greater rewards, organizational membership

Look Familiar ?

- Some final thoughts….

THE MOST POWERFUL STRATEGIES TO IMPROVE YOUR PERFORMANCE ?

#1 Early in your career surround yourself with people that personify the personal and professional qualities that you seek---and you'll thrive.

#2 Start making "to do" lists and follow up on a daily basis, moving unfinished items to the next day. Start the job !!! #3 Collaborate with others who have skills, abilities and resources that you desire.

"Until it's on paper, it's vapor."
— Str John Hargrave

THE PARETO PRINCIPLE ?

Vilfredo Pareto, an Italian economist, reported that 80% of Italy's land belonged to 20% of the (wealthiest) population. Subsequent studies in many different fields found that related comparisons were also distributed unevenly (~ 80/20)—the 80/20 rule.

TAKE HOME MESSAGE: Start focusing even more time on the 20% of activities that yield 80% of your most satisfying achievements/contributions.

Time Management: My Most Memorable Experience ?

" It's been my observation that most people get ahead during the time that others waste." ----Henry Ford

Great Leaders* Bring out the Very Best in those Around Them….

those around them.

"If your actions inspire others to dream more, learn more, do more and become more, you are a leader."----John Quincy Adams

Leadership # 101

Don't tell people, show them.

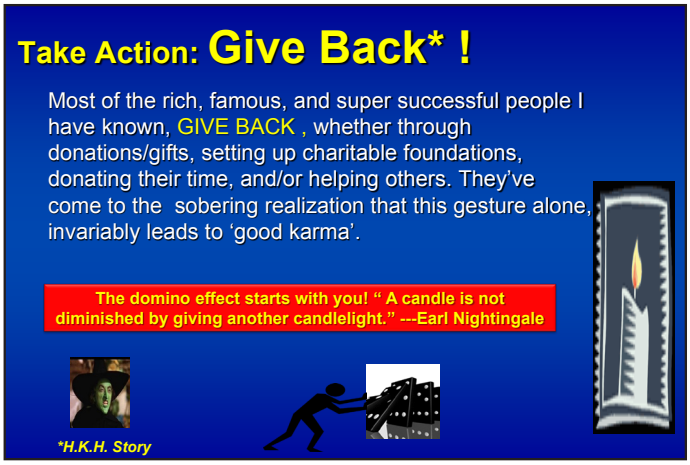
Gene Michalski Story

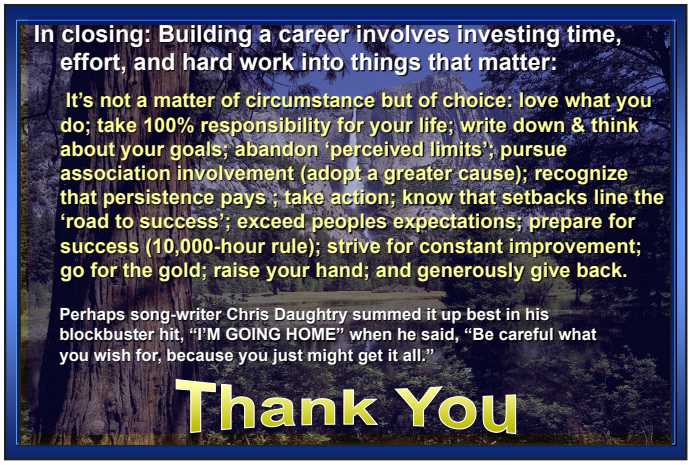
"You teach what you know, but you reproduce who you are." *John Maxwell*

"You can preach a better sermon with your actions than with your lips." *Oliver Goldsmith*

Volunteer Needed? Raising Your Hand High (And Often) Will Markedly Increase Your Likelihood of Professional Success*

"If you routinely do more than you are paid to do, ultimately you'll be paid much more for what you do."—Zig Ziglar





SELF EVALUATION

The 9 Strategies of Highly Successful and Effective Leaders

1. Who said, "The meaning of life is to find your gift. The purpose of life is to give it away."
- a. Nelson Mandela
- b. Bill Gates
- c. Oprah Winfrey
- d. Pablo Picasso

2. Identify the "foundational factors" for career success?
- a. Love what you do!
- b. Take 100% responsibility for your achievements/setbacks
- c. Focus on your contributions (serving others)
- d. All of the above

3. Dr. Lewis Terman at Stanford University conducted a classic study to determine the key characteristics of people who were highly successful in life. The #1 characteristic was:
- a. Voracious reader
- b. Tendency to set goals
- c. Perseverance
- d. Self-confidence

4. Use collaboration to exponentially increase your productivity. Two Clydesdale horses that are matched correctly and trained can pull _____ pounds!
- a. 8,000
- b. 24,000
- c. 32,000
- d. 40,000

5. Who coined the 10,000-hour (of practice) rule – a common trait of highly successful people?
- a. Jack Canfield
- b. Earl Nightingale
- c. Malcolm Gladwell
- d. Professor Anders Ericsson

6. Based on the experience of the Professional Golfer's Association (PGA) the average difference in annual score for an 18-hole round between the #1 and #10 golfers each year is:
- a. less than 1 stroke
- b. 1.4 – 2.0 strokes
- c. 3.0 – 4.0 strokes
- d. none of the above

7. According to the Pareto Principle, approximately 20% of your daily activities yield _____% of your most satisfying achievements/contributions.
- a. 40
- b. 50
- c. 80
- d. none of the above

8. T/F - The professional people that you surround yourself with early on typically have little or no impact on your career direction and ultimate success.

Answer Key: 1. D, 2. D, 3. B, 4. C, 5. C, 6. B, 7. C, 8. F

TOM VIOLA
PHARMACOLOGY DECLASSIFIED

Perioperative Pain Management with Local Anesthetics

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

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Program Learning Objectives

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

- Explain the basic concepts of neurophysiology and nerve conduction and the mechanism of action of local anesthetic agents.
- Differentiate between the two major classes of local anesthetic agents with respect to their distribution, metabolism and routes of excretion.

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Program Learning Objectives

- Discuss the rationale for the use of vasoconstrictors in local anesthetic solutions and their potential effects in common organ system disease states.
- Specify the various local anesthetic agent combinations most commonly used in dentistry, and the rationale for their use in specific clinical situations.
- Discuss general adverse effects, contraindications and patient care considerations with the use of local anesthetics.

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If You're Thinking…

"Why is it so complicated anyway?"

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Significance of Phospholipid Membranes

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Significance of Phospholipid Membranes

The axolemma is a bi-layered phospholipid membrane.

- Hydrophilic "heads" of the phospholipids face outward toward the extracellular fluid.
- Lipophilic "tails" of the phospholipids face inward to create a "fat core" at the center of the membrane.

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Significance of Phospholipid Membranes

The axolemma regulates the movement of substances into and out of the neuron.

- Non-charged molecules (which are fat-soluble), can pass through the membrane with ease.
- Charged ions (which are water-soluble) can only pass through the membrane via channels.
  - Sodium ions can only pass via sodium channels.

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Significance of Phospholipid Membranes

Local anesthetic agents bind to and effectively block the sodium channels.

- They decrease the depolarization of the neuron so firing threshold is never reached
- The result is termed "impulse extinction"

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Significance of Biochemistry

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Significance of Biochemistry

All local anesthetics have lipophilic (fat-soluble) and hydrophilic (water-soluble) segments, at opposite ends of the molecule.

- The two opposite ends are joined by either an ester or amide chemical linkage.
- Anesthetics without a hydrophilic segment are not injected, but are used topically (benzocaine).

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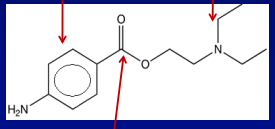
Significance of Biochemistry

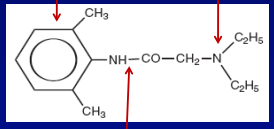
Local anesthetics are classified by the chemical linkage between these two opposite ends.

Lipophilic Hydrophilic



Ester Linkage ("esters")

Lipophilic Hydrophilic



Amide Linkage ("amides")

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Significance of Biochemistry

Ester anesthetics possess ester linkages while amide anesthetics possess amide linkages.

Ester anesthetics	Amide anesthetics
▪ Procaine	▪ Articaine
▪ Cocaine	▪ Bupivacaine
▪ Propoxycaine	▪ Lidocaine
▪ Tetracaine	▪ Mepivacaine
▪ Benzocaine	▪ Prilocaine

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Significance of Biochemistry

Local anesthetics are weak bases which combine with acids to form water soluble salts which are used clinically in aqueous solution.

ACID + BASE ⇌ SALT + WATER

Hydrochloric Acid (HCl) + Lidocaine (for topical use) ⇌ Lidocaine HCl (for injection) + Water

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If You're Thinking…

"Is this why my patient sometimes 'feels the burn' when I inject too quickly?"

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Significance of Biochemistry

The effectiveness of the local anesthetic molecule is determined first by its ability to exist in sufficient ionized form.

- In the cartridge, the solution is kept at low pH.
  - Most stable form of the molecule (for shelf-life)
  - Ensures solubility (more ionized form present).
  - Retards oxidation of vasoconstrictor (if included).

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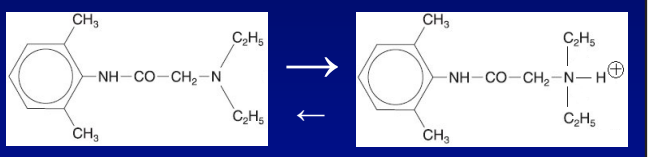
Significance of Biochemistry

The relative proportion of the ionized form to the non-ionized form varies with the pH of the local anesthetic in aqueous solution.

Low pH (in aqueous solution)



Non-ionized "free base" ⇌ Ionized "cation"

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Significance of Biochemistry

The pH of the aqueous solution of a local anesthetic influences its effectiveness.

- pH of local anesthetic solutions
  - pH of solution without epinephrine : 5.5
  - pH of solution with epinephrine : 3.3
- We want the pH of the solution to be low enough to ensure water solubility in the cartridge.

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If You're Thinking…

"But if the local anesthetic is water soluble in the cartridge how does it become fat soluble to cross membranes?

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Significance of Biochemistry

The effectiveness of the local anesthetic molecule is also determined by its ability to exist in sufficient non-ionized form.

- In the tissues, the local anesthetic must convert to non-ionized form to be biologically active.
  - Only the non-ionized (fat soluble) local anesthetic molecules may freely cross membranes.

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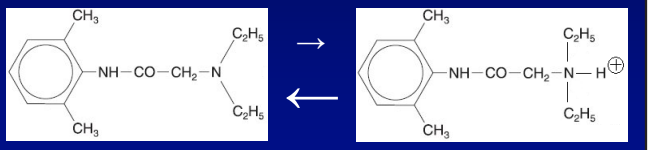
Significance of Biochemistry

The relative proportion of the non-ionized form to the ionized form varies with the **pH of the surrounding tissues.**

High pH (in the tissues after injection)



Non-ionized "free base"

Ionized "cation"

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If You're Thinking…

"Does this have something to do with infection and inflammation causing anesthesia failure?"

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Significance of Biochemistry

The pH of the tissue the local anesthetic is injected into influences its effectiveness.

- pH of tissues
  - pH of normal, healthy tissues : 7.4
  - pH of infected, inflamed tissue : 5.0 to 6.0
- We want the pH of the tissues to be high enough to ensure the local anesthetic converts to non-ionized form and freely crosses the membrane

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Review of Dental Local Anesthetic Preparations

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Dental Local Anesthetic Agents For Injection

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If You're Thinking…

"What is the difference between the local anesthetic agents?"

"When should I use one instead of another?"

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Articaine

- Clinical Advantages
  - An amide that is mostly metabolized (90 to 95%) like an ester in plasma before it reaches the liver
  - Presence of sulfur atom in the ring structure increases lipophilic properties

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Articaine

- Onset of action
  - 1 to 2 minutes via infiltration
  - 2 to 3 minutes via nerve block
- Available formulations
  - 4% articaine + epinephrine 1:100,000
  - 4% articaine + epinephrine 1:200,000

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Articaine

- Clinical Disadvantages
  - Not available without vasoconstrictor (sulfites!)
  - Pregnancy category: C

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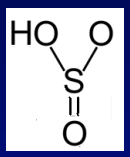
Sulfur vs. Sulfa vs. Sulfite vs. …



Sulfite
Sulfur atom is not the allergenic agent. Hypersensitivity is related to similarity to sulfur dioxide.

"Sulfa" (sulfonamide)
Sulfur atom is not the allergenic agent. When metabolized by the liver, the resulting sulfonamide molecule is capable of attaching to proteins, forming larger molecules that could serve as allergens.

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Articaine

- Clinical Disadvantages
  - Not available without vasoconstrictor (sulfites!)
  - Pregnancy category: C

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Bupivacaine

- Clinical Advantages
  - Very useful in extended procedures
  - Provides extended postoperative pain control (up to 12 hours of relief)
    - May decrease need for narcotic analgesics
  - Useful in situations where profound anesthesia is difficult to achieve with all other available drugs

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Bupivacaine

- Onset of action
  - 6 to 10 minutes (slowest onset of all)
    - Consider using other rapid onset agents first
- Available formulations
  - 0.5% bupivacaine + epinephrine 1:200,000

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Bupivacaine

- Clinical Disadvantages
  - Long duration of action increases:
    - Risk of self-inflicted soft tissue injury
    - Risk of cardiovascular and CNS toxicity

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Lidocaine

- Clinical Advantages
  - Standard against which all agents are compared
  - Long, impressive record of reliability and safety
  - Combined with prilocaine in Oraqix (2.5%/2.5%)
  - Available in numerous OTC products/patches
  - Used in emergency medicine in the treatment of cardiac arrhythmia and epileptic seizures
  - Pregnancy category: B

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Lidocaine

- Onset of action
  - 2 to 3 minutes
- Available formulations
  - 2% lidocaine with epinephrine 1:50,000
  - 2% lidocaine with epinephrine 1:100,000

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Lidocaine

- Clinical Disadvantages
  - Not available without vasoconstrictor
  - Limits clinical advantage in pregnancy

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Mepivacaine

- Clinical Advantages
  - Available in 3% concentration
  - Available without a vasoconstrictor
  - pH of cartridge is relatively higher than other anesthetics with epinephrine
    - Increased patient comfort
    - Useful when combining mepivacaine with other anesthetics to achieve profound anesthesia

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Mepivacaine

- Onset of action
  - 1.5 to 2 minutes
- Available formulations
  - 3% mepivacaine (plain)

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Mepivacaine

- Clinical Disadvantages
  - Use with caution in pediatric patients, geriatric patients and patients with clinical liver dysfunction
    - Less efficiently metabolized so greater risk of toxicity in overdose

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Prilocaine

- Clinical Advantages
  - Metabolized to some extent outside the liver (lungs and kidneys are alternate sites)
  - Available in 4% concentration
  - Available with and without a vasoconstrictor
  - Safe, low toxicity option due to efficient metabolism
  - Pregnancy category: B

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Prilocaine

- Onset of action
  - 2 to 4 minutes
- Available formulations
  - 4% prilocaine (plain)
  - 4% prilocaine + 1:200,000 epinephrine

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Prilocaine

- Clinical Disadvantages
  - Metabolized directly to ortho-Toluidine
    - May produce methemoglobinemia (>600mg)
    - Relatively contraindicated in patients with:
      - Congenital/idiopathic methemoglobinemia
      - Anemia and sickle cell anemia
      - CHF or respiratory failure w/ hypoxia

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Dental Local Anesthetic Agents

For Topical Use

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Topical Local Anesthetic Agents

- Benzocaine
  - An **ester** (possible cross-sensitivity)
  - Commonly used formulations
    - Aerosols (Hurricaine)
    - Gels (Anbesol, Orajel)
    - Solutions (Anbesol, Orajel)
  - Specific considerations
    - OTC dental pain relief (Orajel, Anbesol)
    - May impair gag reflex

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Topical Local Anesthetic Agents

- Lidocaine
  - An amide
  - Commonly used formulations
    - Lidocaine (base)
      - 5% ointment, 10% spray, 5% solution
        - Poorly soluble in water
    - Lidocaine HCl
      - 2% viscous solution
        - Water soluble

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Topical Local Anesthetic Agents

- Lidocaine
  - Specific considerations
    - 2% lidocaine viscous solution is used in combination with diphenhydramine and antacid liquids/nystatin susp as "Magic Mouthwash" for oral ulcerations

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Topical Local Anesthetic Agents

- Tetracaine
  - An **ester** (possible cross-sensitivity)
  - Commonly used formulations
    - Cetacaine®
  - Specific considerations
    - Use in small areas to minimize absorption

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Vasoconstrictors

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Vasoconstrictors

Vasodilation produced by local anesthetics increases both local and systemic adverse effects.

- Increased rate of absorption/removal from injection site
  - Decreased duration and quality of anesthesia
- Increased blood concentrations
  - Increases potential for adverse effects
- Increased bleeding in treatment area

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Vasoconstrictors

Vasoconstrictors are added to local anesthetic solutions to counteract this vasodilation and control tissue perfusion.

- Decreased rate of absorption/removal from injection site
  - Increased duration and quality of anesthesia
- Decreased blood concentrations
  - Decreased potential for adverse effects
- Decrease blood flow TO the injection site
  - Decreased bleeding in treatment area

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Vasoconstrictors

Receptor	Stimulation by epinephrine produces:
α_1	Vasoconstriction
β_1	Increased cardiac activity
β_2	Bronchodilation Vasodilation

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Vasoconstrictors

The side effects of epinephrine absorption must be weighed against the side effects of absorbed local anesthetic.

- Epinephrine may cause adverse effects in patients with pre-existing cardiovascular disease.
- However, rapid absorption and repeated doses of local anesthetic (with a vasoconstrictor) may result in adverse effects as well.

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Vasoconstrictors

The benefit of using epinephrine to achieve profound anesthesia may outweigh the risk in patients with controlled cardiovascular disease.

- Pain-induced stress leads to the release of endogenous epinephrine.
- This may exacerbate cardiovascular disease.

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Vasoconstrictors

Local anesthetic preparations that contain sodium bisulfite have specific patient care considerations.

- Lowers pH of cartridge solution
  - Delays onset of anesthesia
  - May cause burning sensation upon injection
- May result in anaphylaxis is sulfite-sensitive patients

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Patient Care Considerations and Patient Management

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Physical Evaluation and Medical History

Obtain and update a complete medical history and perform a physical evaluation of the patient, including determination of vital signs, at each appointment.

- The "vital" signs
  - Blood pressure
  - Pulse
  - Weight

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Physical Evaluation

Physical evaluation of the patient should be based on the American Society of Anesthesiologists (ASA) classification.

- ASA classification organizes patients into categories of health
- We can associate appropriate patient management considerations with each category

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Medical History

Determine if medical history and physical evaluation findings represent contraindications to dental treatment.

- Identify potential allergies, drug interactions or contraindications for which the use of local anesthetic agents would be pose significant risk to the patient

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Contraindications

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Contraindications

- Absolute Contraindications
  - Patient has a documented allergy to a local anesthetic agent
    - Possible cross-sensitivity to all other agents in same chemical class.
    - Use agents in different chemical class.
  - Patient has a documented allergy to bisulfites
    - Avoid anesthetics that contain vasoconstrictors.
    - Use anesthetics without vasoconstrictors.

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Contraindications

- Relative Contraindications
  - Patient has methemoglobinemia
    - Avoid use of prilocaine.
    - Use other amide local anesthetic agents.
  - Patient has significant liver dysfunction
    - Use amide local anesthetics cautiously.
    - Articaine (Septocaine), which is co-metabolized in the plasma, may be alternative.
  - Patient has significant renal dysfunction
    - Use amide local anesthetics cautiously.

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Contraindications

- Relative Contraindications (continued)
  - Patient has hyperthyroidism
    - Avoid high concentrations of vasoconstrictors.
    - Use local anesthetic preparations with 1:200,000 or 1:100,000 epinephrine or use mepivacaine 3% or prilocaine 4% (no vasoconstrictor).
  - Patient has significant cardiovascular disease
    - Avoid high concentrations of vasoconstrictors.
    - Use local anesthetic preparations with 1:200,000 or 1:100,000 epinephrine or use mepivacaine 3% or prilocaine 4% (no vasoconstrictor).

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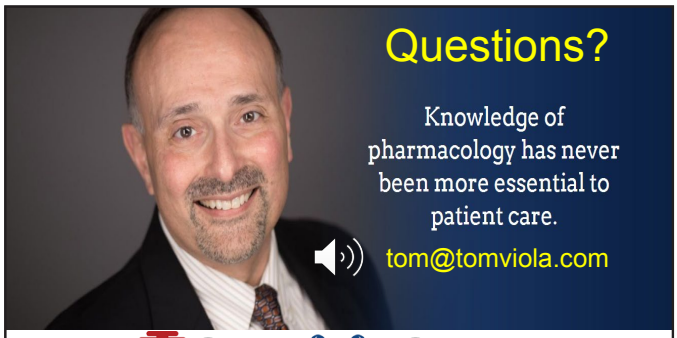

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SELF EVALUATION

Perioperative Pain Management with Local Anesthetics

1. T/F - Articaine is a minimal vasodilator upon injection and, thus, is available without a vasoconstrictor.

2. Which of the following local anesthetic agents is most likely to produce methemoglobinemia in high doses?

a. Mepivacaine (Carbocaine)
b. Bupivacaine (Marcaine)
c. Prilocaine (Citanest)
d. Articaine (Septocaine)
e. None of the above

3. Which of the following is a very long acting local anesthetic useful in post-operative pain control?

a. Mepivacaine (Carbocaine)
b. Bupivacaine (Marcaine)
c. Prilocaine (Citanest)
d. Articaine (Septocaine)
e. All of the above

4. Which of the following local anesthetic agents is available without a vasoconstrictor?

a. Mepivacaine (Carbocaine)
b. Bupivacaine (Marcaine)
c. Prilocaine (Citanest)
d. Articaine (Septocaine)
e. Both a and c

5. T/F - Articaine is contraindicated in patients with a sulfonamide (“sulfa”) allergy.

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

Mitchell Whyne, MD

Mitchell Whyne, MD, of Barrie, Ontario is a licensed Canadian physician who has practiced emergency medicine both in rural and urban settings for over 35 years. He splits his professional time between the emergency room and addiction and pain practices and has diplomas in sports medicine, addiction, and pain medicine. Dr. Whyne is also a frequent presenter to healthcare audiences on sports medicine, addiction and pain medicine, as well as the impact of cognitive biases and logical fallacies in patient care decision making.

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Cognitive Biases & Logical Fallacies: Avoiding Decision Making Pitfalls

HOW WE THINK

TOPICS

- 1) Metacognition
- 2) Cognitive Biases
- 3) Logical Fallacies
- 4) Patient Bias
- 5) Wrap up

METACOGNITION

Thinking About Thinking

Concepts: Thin & Thick Slicing
Fast & Slow Thinking

CASES

- (1) 36-year-old female

Primary c/o vaginal discharge

Secondary c/o back pain

Known chronic drug abuser

(2) 60-year-old male

In for dental work

Gets sweaty nauseated and passes out in dentist chair.

Thin and Thick Slicing

- You likely have thought about the diagnosis for each of these patients.
- However there is much you don't know.

(Past Hx, Medications, Physical Exam, Lab Work)

Thin Slicing

- Making (medical, dental, legal) decisions based on limited evidence.*
- Making an initial plan or evaluation even without all the evidence.*

Positive aspects of Thin Slicing

- In stressful situations where decisiveness is needed it allows you to act.*
- Thin slicing tends to be surprisingly accurate. You are often correct about a situation even with limited data.*

Negative Aspects of Thin Slicing

- Our initial impression may prevent us from accepting alternative reasons or diagnoses for the situation. This can lead to mistakes.
- Even when additional information becomes available thin slicing may blind us to it. (BIAS)
- Thin slicing requires expertise. Juniors and learners should be more cautious in using their thin slicing skills. (They have not seen enough to rely heavily on gestalt).

Thick Slicing

- Careful, Systematic evaluation of the situation.
- Intentionally mistrusting your gut instincts or first impressions.

Advantages of Thick Slicing

- Allows one to consider subtle information and evidence.
- Encourages us to consider all options not just the easy/common ones.
- Thick slicing can help us by scripting or having a plan in place for stressful situations that are recurrent. (eg. ACLS).

Disadvantages of Thick Slicing

- It takes longer (may not have that luxury in emergency situations).
- Diagnosis and treatment (legal proceedings – charges and court preparation) often must happen at the same time while information is continued to be gathered.
- Evidence based guidelines – the result of thick sliced thinking should not squeeze out our ability to use our gut instincts.
- Balance between the 2 is needed.

Fast and Slow Thinking

- Closely related to thin and thick slicing.

Fast thinking is instinctive and emotional – is similar to thin slicing. It controls much of our decision making without us being aware of it.

- Fast thinking does allow for bias to creep in, but it is often correct.

Slow thinking is deliberate and logic-based thinking – Textbook and lecture learned or today googled. It is similar to thick slicing.

Health professional errors are mostly cognitive errors

- Do you look at patient or client and guess what the patient's problem is as they come into the ED or office.

Kidney stone
Gallstone
M.I.
Migraine

- Lawyers and dentists, I suspect sometimes do the same.

Fast thinking – pattern recognition we use this all the time

- 95% of thinking is **fast thinking** (we use this in all aspects of life – do things almost reflexively)
- But fast thinking is prone to errors since you don't stop to analyze things
- In the ED we need to be nice, accurate and fast, all in a stressful chaotic atmosphere.

Sometimes fast thinking can be dangerous

- If you are planning to buy a house fast thinking may not be best – need to take your time and use slow thinking.

Some cases need slow thinking. Good clinicians can toggle back and forth between fast and slow thinking.

- You have to know when to stop and use **slow thinking.** *

Ideally there needs to be a balance between fast (thin slicing) and slow (thick slicing) thinking

- Fast thinking may direct your initial approach to a problem.
- Slow thinking (which may include thinking in advance – preparedness with check lists and order sets) will help prevent errors or omissions in our practices.
- Understanding the way you think can make you a better professional.

BIAS

Something that systematically moves us away from the truth

Cognitive Bias

Errors of thinking that occur when trying to process and interpret information colored by the world around us.

Bias and Cognitive Errors

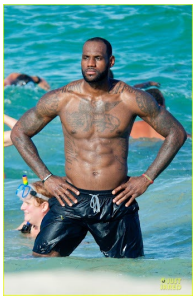
- We all come to work with our own life experiences and knowledge but also with our own biases.
- No matter how open, liberal or all encompassing you may think you are - we all have biases
- We all have to recognize our own biases

For these biases can start you down the wrong path.

SPECIFIC BIASES

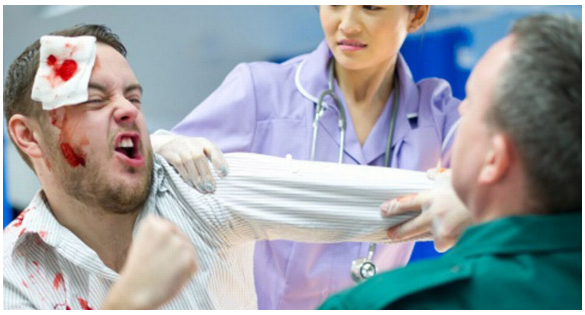
- The more I have researched this subject the more "biases" I have found. They can go by so many names.
- I will first introduce you to the ones I feel are most common and important in the workplace and in life.
- Then I will quickly look at a few others I feel have relevance.

Think



Think Again

What are you thinking now?



Attribution Error

- Need to take the "YECK" factor out and listen to the words just as if this was a well-dressed cooperative patient.
- Try to get rid of other sensory input (i.e. drunk or whiney person).
- This will help minimize the risk of ERROR

* **Can't always judge a book by it's cover**

Framing

- Take same words from 2 different patients.
- Study used same script read by;

1) 45yr old male in straight forward manner
2) 45yr old whiny depressed looking woman

(substernal crushing chest pain into my left arm with nausea, SOB and sweating)

Interpretation by us can often be very different. Frame it into the patient.

Anchoring

- Let's remember patients also make cognitive errors.
- Patient tells you that his flank pain is his kidney stones again.
- They anchor on it – You may anchor on it – so you both get pulled under together (AAA ruptures)
- Busy in the practice – we often latch onto the thing that is easiest to grab & you may sink.
- Anchoring may prevent you from accepting other clues you find along the way. (Get stuck on one Dx and ignore other data which comes in later)
- Anchoring can occur between doctors also (Handovers)

GO IN WITH AN OPEN MIND

- Don't decide up front what you think is going on.
- Don't rationalize and ignore data.
- What if your treatment/theory is not working (ie. Constipation or UTI in the elderly)

Premature Closure

- Pairs with anchoring.
- Go to bedside get Hx /Physical and walk away sure that we know what is going on.
- Therefore sometimes you stop thinking and may stop testing –(*a lot of times this is appropriate, but make sure you have enough data to support your conclusions*)

Affective Error

When we allow our personal feelings toward a patient/client affect their care.

Flip side of attribution error.

That is why some people say never treat your friends.

People you like you may treat differently because you don't want to hurt them. (could be child or sweet little old lady)

May undertest – avoid LP
May overtest - get CT

Availability Error

- You can only diagnose what you know
- That is why all people need to be lifelong learners.
- You may anchor on only things you know.
- (if you don't know what a segond # is or what pes anserine bursitis is you won't Diagnose it.)
- Lawyers who don't know the case law or certain precedents won't use them*

Confirmation Bias

Tendency to process information by looking for or interpreting information consistent with one's beliefs

- Patients do this all the time
- "my doctor/friend told me this must be my reflux – I took some antacid, and it helped a bit.
- *You're ready to by in – but the EKG shows diffuse ST elevation, or the Troponin is +ve.
- I trust this also occurs in Dentistry and Law as well.

Overconfidence Bias

- Go in to see a patient and right away you are sure what it is.
- Goes along with premature closure and will sooner or later get you in trouble.

Zebra Retreat

- This is when you are really considering a rare diagnosis but back away from it
- There are a number of reasons this might happen

1) Lack of time or resources to R/O the diagnosis

2) Not wanting to call a specialist and be ridiculed. *

Summary of Bias/Errors

- Attribution error, Affective error and Framing are all related.
- Anchoring, Premature Closure and Overconfidence Bias as well are related.
- Confirmation Bias
- Availability Bias
- Zebra Retreat

36-year-old female
Primary c/o vaginal discharge
Secondary c/o back pain
Known chronic drug abuser
*

- Biases in play
- Attribution and Framing Bias
- Anchoring and Premature Closure
- Availability Bias
- Confirmation Bias
- Zebra Retreat

My best of the rest

- Biases I wanted to share either because I have seen them in myself or others.
- Or they have a good story attached

Hindsight Bias

- This can be especially important in medical/dental/legal expert witness work.
- Knowing the outcome in advance can greatly impact our assessment of the case.
- The degree of bias is often proportional to the outcome.
- Hindsight bias is like being a Monday morning quarterback making it easy to be critical of a colleague's decisions

Information Bias

- Belief that more information is better.
- To much information or to little information
- To many tests vs. to few

(there can be increased harm both ways - need to find that goldilocks zone)

Driving this information bias is the fear of missing something.

You often hear "the only bad test is the one you didn't order" *

Semmelweis Effect

- The tendency to reject any new information or evidence because it goes against current belief or practice
- Story of Dr. Semmelweis. *
- Must also be careful since for ever Semmelweis who is correct there are many whose passionate claims are wrong.

*

Self Serving Bias

- This is the tendency to blame external forces when things go bad for you – but give yourself credit when good things happen.
- Can lead to blaming others character flaws when things go bad for them.
- *

Dunning Kruger Effect

- When people believe they are smarter and more capable than they really are.
- Can't recognize their own incompetence

Misinformation Effect

- This is the tendency for post event information to interfere with the memory of the initial event. *
- In law this tends to lead to mistrust of eyewitnesses.
- In marriage this recreation of past events tends to lead to fights.

Multiple biases can be in effect at the same time – they often don't exist in isolation

- We need to accept that biases exist in all of us. (due to our upbringing, past experiences and unique lives)
- Allow this knowledge to move us towards finding the truth and avoiding errors in our practices and our lives

Remember

Whether treating patients or reading the literature, cognitive pauses are necessary to understand biases that may be at play.

LOGICAL FALLACIES

- The ways in which by neglecting the rules of logic, we fall into erroneous reasoning.

Cognitive biases – are a default pattern of thinking – mental shortcuts that don't rely on logic but rather on thought processing errors.

Logical fallacies and cognitive biases can and often do overlap.

Formal and Informal Fallacies

1) Formal Fallacies (Errors in logic)

- The conclusion does not follow or is not supported by premises.

(because the premises are untrue/unsound thus making the argument invalid)*

2) Informal Fallacies – these fallacies are more dependent on the misuse of language or evidence. (Bringing irrelevant information into an argument.) *

Bandwagon Effect

- Appeal to popularity – accept something is true just because it is popular.
- Do something because others are (Blood letting, Covid cures).
- *

Appeal to Emotion

- When you pull on people's heart strings instead of using sound logic supported by the evidence. (Politicians and advertisers are great at this)
- Doctors often do things not supported by the evidence – because of the consequences of doing nothing.

Just realize why you are doing theses things; maybe to help family cope, avoid litigation, or to support a colleague. (eg. Non indicated CPR)*

Texas Sharpshooter

- Our cognitive bias is to value our wins and discount our losses.
- You shoot at a barn door and then go draw a bull's eye around the bullet hole to show how good you did.
- Cherry picking data to support your position
- Common to publish +ve reports and bury –ve ones.*

Anecdotal

- When you use isolated or personal examples to support what you do rather than true evidence.
- Gave Covid patient a medicine and they got better. 1st most Covid patients get better with nothing – randomized trials are needed to see if treatment holds up.
- Observational data is ok for generating hypothesis not proving them.

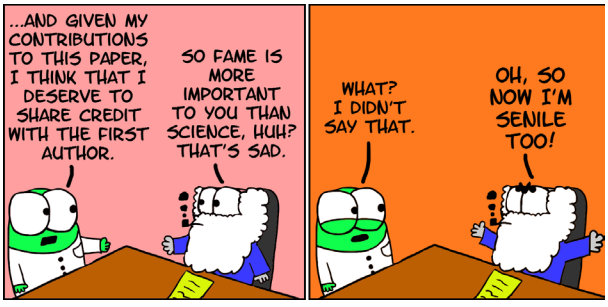
Ad Hominem

- When an argument is rebutted by attacking the person making it rather than the argument itself. ***When you attack the person rather than the evidence.*** *
- These type of statements can be used quite strategically, for they sting the opponent and raise doubt in the audience.
- Often used when someone cannot defend their argument on its own merit.

Strawman Comparison

- When you misrepresent someone's argument to make it easier to attack or make your position stronger.
- Often used when comparing new treatment to an established treatment. *

Strawman Example



False Dichotomy

- Claiming there are only two options when in fact others may exist.

  You are with me or against me

  Treat or not treat

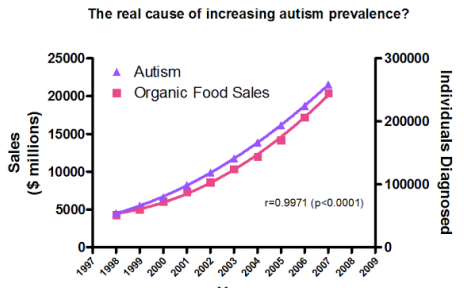
  Black or white

Rarely are things this simple

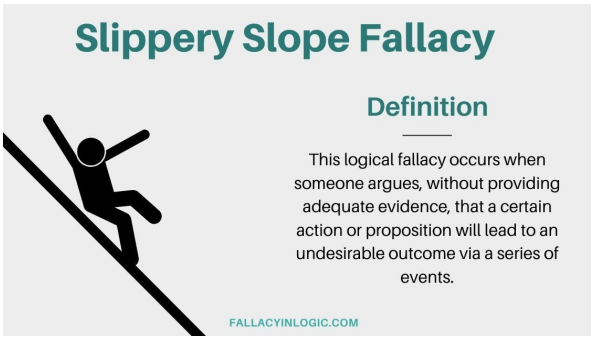
Usually there are many GREY zones that need to be considered.

Casual Fallacy

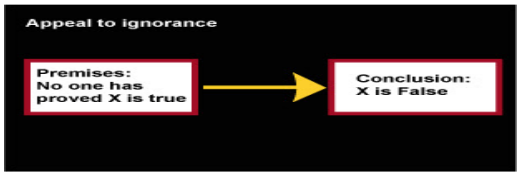
Remember Association is not Causation



Slippery Slope



Appeal to Ignorance



- Or vice versa
- To accept an argument because you don't have evidence against it or can't readily come up with another explanation.

*

Dealing with Logical Fallacies

- To counter the use of a logical fallacy you must first identify the flaw in reasoning that is involved.
- Then using logic explain why it is a problem

- Avoid logical fallacies in your own arguments
- Beware of any assumptions you have made – make sure all your premises are true.

PATIENT BIAS

- We often hear of professional bias towards patients, but patient bias has become a bigger issue as the diversity among doctors and dentists has increased.
- Patients can target physicians and dentists with inappropriate behavior, ranging from negative comments to outright refusals to accept care, for reasons that may be racist, homophobic or misogynistic.

VIRAL VIDEO

VIRAL VIDEO

Click to add text

PROBLEM

- The abuse can take a huge emotional toll on medical professionals and trainees and leave many of them dealing with the sequelae of professional burnout.
- STUDY – "Physician and Trainee Experience with Patient Bias" *

ISSUES

- Physicians of color and our female colleagues are often mistaken for housekeeping, PSW's or nurses
- Patients refuse care for themselves or family members from physicians of color or did not trust their opinion.
- These physicians or trainees often reported a lack of action when experiencing racism or prejudice in the presence of white peers or supervisors.

For years, tolerating bias was simply seen as part of providing hospital care.

A 2016 NEJM article called "Dealing with Racist Patients" suggested, perhaps that acceding to race base reassignment demands could do more harm than good for physicians and patients alike.

"Competent patients have the right to refuse care, but the willingness to accommodate patient's racial preferences with respect to their choice of physicians raises many concerning ethical, clinical and legal issues.*

"Acceptance of biased patient behavior is just not a defensible norm for hospitals any longer."

- There are times when accommodation is a reasonable option like language concordance for improved comprehension.
- A patients past trauma may also be a reason to consider a more nuanced approach

Suggestions

- For those experiencing patient bias:
- 1) Check your own visceral reaction
- 2) Assess illness acuity
- 3) Determine whether to respond at bedside or at a subsequent encounter
- 4) Seek assistance if needed

- For those witnessing patient bias:
- Silence is rarely the right option
- Support your Colleague
- Say something

WRAP UP

Metacognition

- It allows one to plan their approach to a problem using **fast** and **slow** thinking when needed.

Bias isn't a bad word

- Biases are thinking shortcuts. Our life experiences color the way we see the world. Bias only becomes a problem if it results in treating people poorly or in bad decision making.

Logical Fallacies

- Avoid the Temptation
- Avoid the Deception

PATIENT BIAS

- It is no longer a defensible norm
- Stand up and address it when it rears its ugly head

MY HOPE

- By better understanding these concepts we will be able to use them to our advantage and not fall prey to their traps.
- This will bring out the best you have to offer in your professional and personal lives.

SELF EVALUATION

Cognitive Biases & Logical Fallacies: Avoiding Decision Making Pitfalls

1. Which does not pertain to thin slicing?

a. Allows you to act quickly in stressful situations.
b. Is surprisingly accurate.
c. Systematic evaluation of a situation.
d. Decisions based on little evidence.

2. T/F - Everyone brings their own biases to the workplace.

3. Which one of these biases is not related to the others?

a. Overconfidence bias
b. Premature closure
c. Framing
d. Anchoring

4. T/F - There are two basic types of logical fallacies – formal and informal fallacies

5. T/F - Hardly any physicians or trainees experience patient bias.

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

TOM VIOLA
PHARMACOLOGY DECLASSIFIED

Illicit Substances, Their Abuse and the Dental Patient

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

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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

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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.

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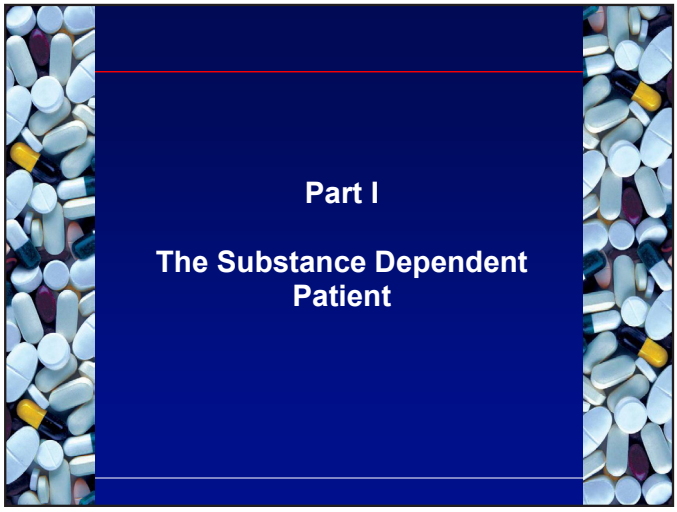

Part I

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.

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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.

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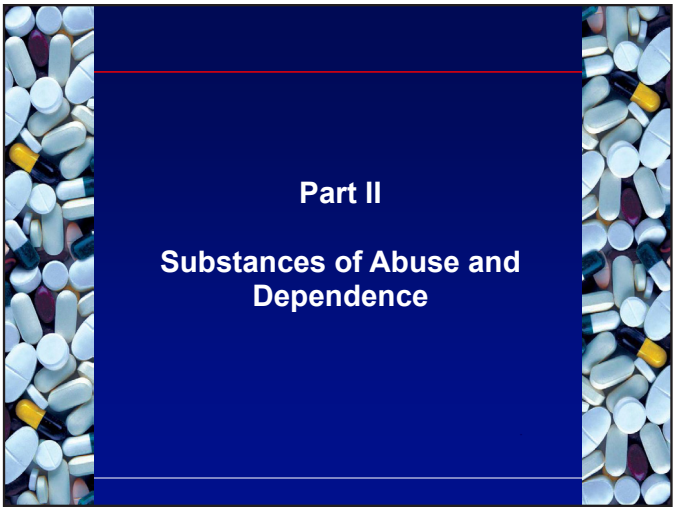

Part II

Substances of Abuse and Dependence

CNS Stimulants

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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)

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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

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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

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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

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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!

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Common Adverse Effects

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

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Common Adverse Effects

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

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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

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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

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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

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CNS Depressants

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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

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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

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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

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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

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Common Dental Considerations

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

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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

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Illicit Opioids

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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

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Illicit Opioids

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

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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

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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

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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

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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

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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

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Treatment of Opioid Addiction

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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

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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

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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

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Hallucinogens

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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

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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

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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

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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*)

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Hallucinogens

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

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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

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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

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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")

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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)

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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

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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)

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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

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What's New?

- Albuterol
- Neurontin
- Niacin
- Imodium

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What's New?

- Albuterol
  - – Enhances athletic performance
  - – Used for weight loss
- Neurontin (gabapentin)
  - – Used to "boost" heroin
  - – Used in high doses as substitute for opioids (no positive urine tests)

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What's New?

- Niacin
  - – Taken in high doses to "flush" positive drug tests
- Imodium (*OTC Methadone*)
  - – Used in high doses for opioid-like effect
  - – Used to reduce opioid withdrawal symptoms
  - – May exacerbate constipation

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SELF EVALUATION

Illicit Substances, Their Abuse and the Dental Patient

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 of the following is NOT a hallucinogen?
- a. K2
- b. Ketamine
- c. Krokodil
- d. Dextromethorphan
- e. Salvia divinorum

5. T/F - Rohypnol, also known as the street drug “Roofie” is a benzodiazepine that is abused for its euphoric effects.

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

Dr. Gerald Levine, MD, CCFP

Dr. Gerald Levine, MD, CCFP (Canadian College of Family Physicians), of Barrie, Ontario, graduated from the University of Toronto Medical School and the University of Toronto Family Medicine School. He was a family practitioner for over 30 years and since 2006 has focused on stress management, burnout prevention and mindfulness facilitation offering training physicians, dentists, and their staffs as well as for dental and medical associations throughout Canada including the Simcoe Muskoka District Health Unit, the General Practitioner Psychotherapy Association of Canada, the Canadian Mental Health Association York Region and many others. Dr. Levine has also authored an e-book, *52 Mindful Weeks, Cultivating Awareness and Resilience* available on his website, www.ManageStress.ca.

You may contact Dr. Levine with you questions or comments at geraldlevine@rogers.com, or by phone at 705-721-3130.

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Communicating Effectively with Staff & Patients: Barriers and Solutions

Learning Objectives :

Identify and assess barriers to listening and communication with patients and staff

Apply self care and mindfulness skills to enhance listening and communication

Communication is only as good as the outcome!

3 things to remember:

Mindful Awareness

Self Care

60 second listening rule

Topics:

Listening/Communication Barriers

Self Care and Mindful Solutions:

Self Awareness

Self care

Mindfulness

Mindful listening

"Communication 101" for Staff/Patients

Mindful Self Compassion

Barriers to Listening

Comparing

Mind reading

Rehearsing

Filtering

Judging

Being right

Dreaming

Advising

Sparring

Derailing

Placating

Barriers to Communication:

- Failing to clarify
- Not listening
- Imposing solutions
- Leading questions
- Not acknowledging others
- Making assumptions
- Avoiding honest feedback

SOLUTIONS:

Self Awareness
Self Care
Mindfulness
Mindful Listening
Communication 101
Effective Communication :Staff
Effective Communication:Patients
Managing Secondary Traumatic Stress

SOLUTIONS:
Self Awareness

Self Care
Mindfulness
Mindful Listening
Communication 101
Effective Communication :Staff
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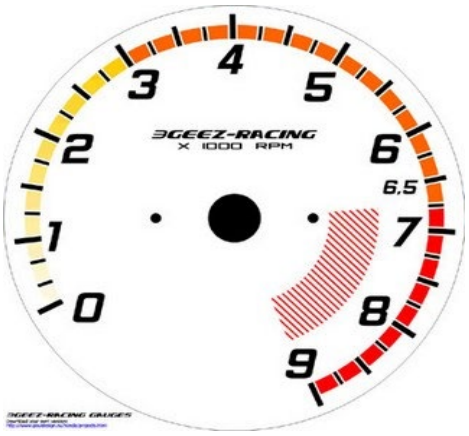
Managing Secondary Traumatic Stress



Self Awareness

Internal stress o meter

Frequent “check in”

Time and space for inventory: “I'm too busy”

Recognizing your personal stress triggers

Recognizing your own stress reaction

- Cultivating ”3rd person” perspective,
- awareness of inner dialogue

SOLUTIONS:

Self Awareness
Self Care
Mindfulness
Mindful Listening
Communication 101
Effective Communication :Staff
Effective Communication: Patients
Managing Secondary Traumatic Stress

HALT !

HUNGRY?
ANXIOUS/ANGRY?
LONELY?
TIRED?

Basic self care

Common sense, but not common practice
Routine (especially during pandemic)
Sleep
Food
Exercise/fresh air
Relationships
Vacation
Hobbies/interests
Meditation/Spiritual connection

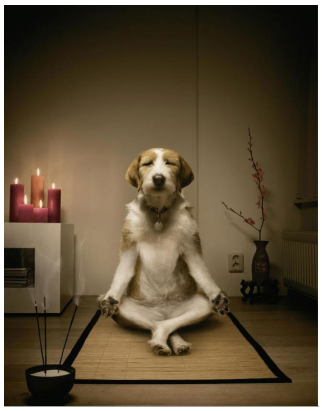
.Caffeine, alcohol, drugs, screen time, overworking….not!

SOLUTIONS:

Self Awareness
Self Care

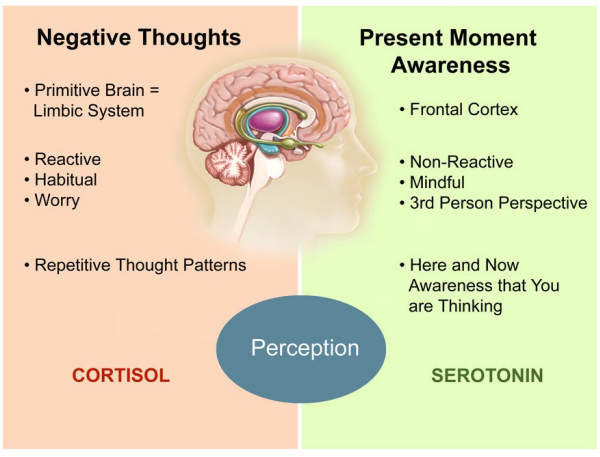
Mindfulness

Mindful Listening
Communication 101
Effective Communication: Staff
Effective Communication: Patients
Managing Secondary Traumatic Stress



Mindfulness:

- Paying attention to the here and now with attitudes of curiosity and acceptance
- Intentional focus on the present
- Repeated shifting of attention from the past or future to the present moment
- Awareness of what you are doing as you are doing it



Mindfulness :Myths and Facts

- **Myths:** trying to empty the mind, religious doctrine, passive,
- isolating, waste of time

- **Facts :** scientifically proven concentration/attention training
- rewires the brain for calm, clear problem-solving,
- wise responses, presence, connection with others

Mindful Principles/Attitudes

- Kindness
- Non-judgment
- Acceptance
- Patience
- Curiosity
- Trust
- Non-striving
- Letting go/reduced attachment

SOLUTIONS:

Self Awareness
Self Care
Mindfulness
Mindful Listening
Communication 101
Effective Communication :Staff
Effective Communication: Patients
Managing Secondary Traumatic Stress

Mindful Listening

awareness of listening blocks
being present
uni tasking
listening to understand (not necessarily agree)
body language
listening as a meditation practice

SOLUTIONS:

Self Awareness
Self Care
Mindfulness
Mindful Listening
Communication 101
Effective Communication :Staff
Effective Communication: Patients
Managing Secondary Traumatic Stress

Communication 101

Styles of Relating:
Aggressive
Passive
Assertive

Communication 101

4 A's
Availability
Assertiveness
Ask
Accept

Communication 101

4 F's (FREE)
Figure out
Responsibility
Express
Empathy

SOLUTIONS:

Self Awareness
Self Care
Mindfulness
Mindful Listening
Communication 101
Effective Communication: Staff
Effective Communication: Patients
Managing Secondary Traumatic Stress

Mindful Communication with Staff

Clarity
Enquire(empathic curiosity)
Hear
Acknowledge
Straight Talk

Mindful Communication with Staff

.1) Understand communication styles
.2) Aim for understanding
.3) Listen actively: BE PRESENT
.4) Be willing to compromise
.5) Avoid hurtful language
.6) Speak assertively with "I statements"
.7) Concern and respect
.8) Manage intense emotions
.9) Notice nonverbal clues
.10) Validate

SOLUTIONS:

Self Awareness
Self Care
Mindfulness
Mindful Listening
Communication 101
Effective Communication :Staff
Effective Communication: Patients
Managing Secondary Traumatic Stress

Mindful Communication with Patients

60 second listening rule
Patient satisfaction increased
Practitioner satisfaction increased
lawsuit reduction!

Mindful Communication with Patients

1) Centering breath, body scan, letting go of residue
2)initial question, intention to help:
"what matters most to this patient right now?"
3) allow 60 seconds or more of listening to understand
4)questions for self: "what am I ignoring/assuming?"
5)relish silences(diastole of communication)

SOLUTIONS:

Self Awareness
Self Care
Mindfulness
Mindful Listening
Communication 101
Effective Communication: Staff
Effective Communication: Patients
Managing Secondary Traumatic Stress

Managing Secondary Traumatic Stress

Secondary traumatic stress/empathy fatigue
Mindful self compassion
One for me, one for you

Managing Secondary Traumatic Stress

Mirror neurons: preverbal empathy/resonance
Secondary traumatic stress/empathy fatigue
Burnout

Managing Secondary Traumatic Stress

Mindful self compassion:

Mindful awareness vs self-absorption
Self kindness vs self critic
Common humanity vs isolation

Managing Secondary Traumatic Stress

Mindful self compassion

"This a moment of difficulty"
"One for me, one for you"
Including yourself equally in the circle of care
Treating yourself as a good friend

Communication is only as good as the outcome!

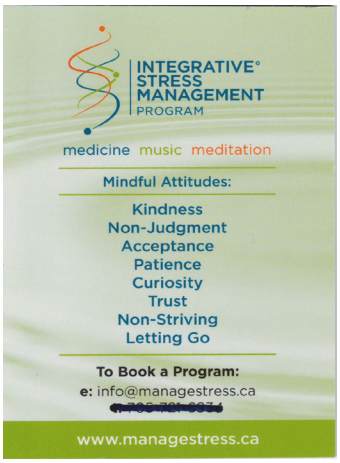
3 things to remember:

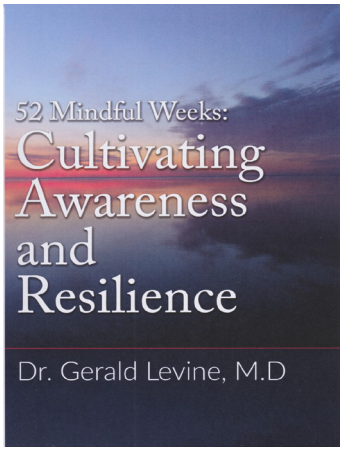
Mindful Awareness

Self Care

60 second listening rule

....thanks for listening!





CONTINUED PRACTICE/RESOURCES

Dr Gerald Levine: www.managestress.ca
ebook: 52 Mindful Weeks

Mindfulness: Full Catastrophe Living by Dr. Jon Kabat-Zinn
The Mindful Brain by Dr. Daniel J. Siegel
The Mindfulness Solution by Dr. Ronald D. Siegel
Meditation for Fidgety Skeptics by Dan Harris
Deep Listening and Communication by Dr. Ron Epstein
Communication skills: Greenline Conversations
CenterforMSC.org Dr. Kristen Neff
APPS: 10% Happier, Insight Timer, Calm, Headspace

SELF EVALUATION

Communicating Effectively with Staff & Patients: Barriers and Solutions

1. Barriers to listening include:

a. mind reading
b. comparing
c. advising
d. being right
e. filtering
f. all of the above

2. Barriers to communicating include:

a. not listening
b. making assumptions
c. avoiding honest feedback
d. imposing solutions
e. failing to clarify
f. all of the above

3. T/F - Aggressive and Assertive styles of relating are the same.

4. The FREE mnemonic includes:

a. Figure out what you need to say
b. Responsibility for your side of communication
c. Express yourself aggressively
d. Empathize with others points of view
e. all of the above
f. a,b,d

5. T/F - Mindfulness meditation requires you to empty your mind.

6. T/F - The 60 second rule makes your office day longer and less satisfying.

7. T/F - Empathy fatigue leads to burnout and poor communication.

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