THE
2024-25

Dental UPDATE

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

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David R. Victor, JD
CEO

Dear Registrant:

You practice in a dynamic and challenging environment. While keeping clinically current is imperative, it isn't enough. You must also acquire the knowledge necessary to successfully manage your practice, avoid legal pitfalls and minimize myriad liabilities exposures. ***The 2024-25 Dental Update*** is designed to assist you in that endeavor.

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

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

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

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

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

Cordially,
American Educational Institute, Inc

David R. Victor, Esq.
CEO

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COURSE OBJECTIVES

After completing ***The 2024-25 Dental Update*** you should have acquired the knowledge that will better enable you to better:

- Discuss the characteristics and proper management of patients with current or **past substance use disorder.**
- Understand metrics, analyses and strategies to better ensure **practice profitability.**
- Understand cases for which **non or minimally surgical orthodontic approaches** are appropriate.
- Appreciate the **impact of dental hygienists on practice success.**
- Identify and diagnose **oral mucosal disease.**
- Understand methods to **optimize retirement planning and practice value.**
- Understand the elements and implications of **standard of care and informed consent.**
- Understand approaches for managing odontogenic pain with **opioid and non-opioid analgesics.**
- Understand the planning, negotiating, and implementing a **practice merger or acquisition.**
- Understand the **oral and systemic connections.**
- Identify the practices and processes for **optimizing revenue cycle management.**
- Understand **common sleep disorders and their management.**
- Understand the connection between uniform diagnostic criteria and **patient treatment acceptance.**
- Identify the coverage and limitations of a **dental malpractice insurance policy.**
- Understand how recognition and treatment of **pediatric breathing disorders** improves adult health trajectories.
- Describe how the **Consolidated Appropriations Act of 2023** impacts effective retirement planning.
- Understand the successful use of **local anesthetic agents**.

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Dental UPDATE

FACULTY DISCLOSURES

The individuals listed below have control over the content of ***The 2024-25 Dental Update***. None of them have a financial relationship with a commercial interest whose products or services are discussed in the presentation(s) over which they have control.

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Caring for Patients with Current or Past Substance Use Disorder

DEFINITION

A cluster of behavioral, cognitive, and physiological phenomena that develop after repeated substance use and that typically include a strong desire to take the drug, difficulties in controlling its use, persisting in its use despite harmful consequences, a higher priority given to drug use than to other activities and obligations, increased tolerance, and sometimes a physical withdrawal state

World Health Organization. *International statistical classification of diseases and related health problems*

GOALS

- How do I treat a patient that is currently in medical assisted treatment for addiction (methadone or buprenorphine)?
- Will my treatment of this patient put them at risk for their sobriety?
- Will my treatment of this patient put them at risk for morbidity or mortality?
- How do I treat a patient with previous SUD if they are sober, off all medications?
- Can I be placed at fault if the patient relapses under my care?

CONCERNS

Patient concerns/fears

- Withdrawal symptoms
- Fear of pain not taken seriously restriction to analgesic agents
- Fear of discrimination
- If currently absent-fear of relapse

Physician concerns

- Mistrust of those with addiction
- overtreatment of pain leading to respiratory depression
- possibility reports of pain fabricated to obtain opiates
- diversion of prescription
- fear patient may leave against the medical advice

PRESENTATION

- There is a high prevalence of psychiatric comorbidities in those with drug dependence, with more than 50% of patients showing evidence of significant psychopathology, particularly anxiety disorders and affective disorders, including depression

Callaly T, Trauer T, Munro L, Whelan G. Prevalence of psychiatric disorder in a methadone maintenance population. *Aust N Z J Psychiatry* 2001;35:601–5

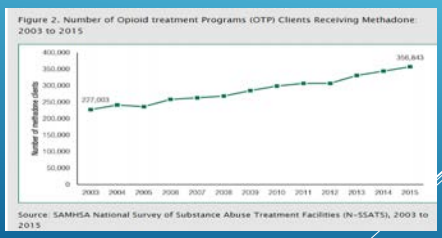
- Everyone is at risk.
- *Must the document* and appropriate history and physical exam.
- Must document risk assessment tool.
- Must actively engage patient with respect to medication risk and benefit.
- Must consider other therapies outside of narcotic management.

COMMON MISCONCEPTIONS

- The maintenance opioid agonist (methadone or buprenorphine)provides analgesia.
- Use of opioids for analgesia may result in addiction relapse
- The additive effects of opioid analgesics and OAT may cause respiratory/(CNS) depression.
- The pain complaint may be a manipulation to obtain opioid medications, or drug-seeking, because of opioid addiction.

TREATMENT- METHADONE

- Methadone- indeed block the euphoric effects of the heroin (and all other opioids).
- Prevents cravings/stabilize



METHADONE POSITIVES

- The goal -normal life-stop the withdrawal symptoms
- It lasts for at least 24 hours
- No legal limit to how many patients a methadone clinic can treat
- Increased as the patient becomes tolerant
- The addict can avoid withdrawal safely.
- Immediately stop using prevention hepatitis C and HIV.

https://www.adt-healthcare.com/blog/post/advantages-disadvantages-methadone-treatment
https://www.naabt.org/faq_answers.cfm?ID=21

LOW-RISK: STANDARD MONITORING, VIGILANCE, AND CARE

- Objective signs and symptoms, localizable physical pathology
- Confirmatory testing such as physical exam findings, CT, MRI, etc.
- No individual or family history of substance abuse
- At most, mild medical or psychologic comorbidity
- Age < 45
- High pain tolerance
- Active coping strategies
- Willingness to participate in multimodal therapy
- Attempting to function at normal levels

https://www.ncbi.nlm.nih.gov/books/NBK537318/#article-40661.s8

MODERATE-RISK: ADDITIONAL LEVEL OF MONITORING AND MORE FREQUENT PROVIDER CONTACT

- Significant pain
- Defined pathology with objective signs and symptoms
- Confirmatory testing such as physical exam findings, CT, MRI, etc.
- Moderate psychologic problems controlled by therapy
- Moderate comorbidities well controlled by medical therapy and are not affected by opioids
- Mild opioid tolerance but not hyperalgesia without addiction or physical dependence
- Individual or family history of substance abuse
- Pain involving more than three regions of the body
- Moderate levels of pain acceptance
- Active coping strategies
- Willing to participate in multimodal therapy
- Attempting to function at normal levels

https://www.ncbi.nlm.nih.gov/books/NBK537318/#article-40661.s8

HIGH-RISK: INTENSIVE AND STRUCTURED MONITORING, FREQUENT FOLLOW-UP CONTACT, CONSULTATION WITH ADDICTION PSYCHIATRIST

- Significant widespread pain
- No objective signs and symptoms
- Pain involves more than 3 body regions
- Divergent drug-related behavior
- Individual or family history of addiction, dependency, diversion, hyperalgesia, substance abuse, or tolerance
- Major psychologic problems
- Age >45
- HIV-related pain
- High levels of pain exacerbation
- Poor coping strategies
- Unwilling to participate in multimodal therapy
- Not functioning at a normal lifestyle

https://www.ncbi.nlm.nih.gov/books/NBK537318/#article-40661.s8

VIGIL

- Verification: Is this a responsible opioid user?
- Identification: Is the identity of this patient verifiable?
- Generalization: Do we agree on mutual responsibilities and expectations?
- Interpretation: Do I feel comfortable allowing this person to have controlled substances?
- Legalization: Am I acting legally and responsibly?

https://www.ncbi.nlm.nih.gov/books/NBK537318/#article-40661.s8

TREATMENT- METHADONE

- Treating Patients on this medication and Having Surgery
- What to do?
  - Continue use?
  - Decrease?
  - Stop?
- How would/should I change my management of this patient?

PREOPERATIVE ASSESSMENT FOR THE OPIOID-TOLERANT PATIENT.

- Understand current opiate dose for sobriety maintenance
- Appreciate other polypharmacy patient might be taking
- Review past experiences with surgery and current expectations
- Focus on other modalities for pain relief/co-analgesic management

Patients who should receive pain consult: 1) Taking opioid equivalents oral morphine 80mg daily *(Morphine (MS-contin, morphine sulfate, MS-IR) – 80mg, Oxycodone (Percocet, oxycodone, Oxycontin) – 50mg, Hydrocodone (Norco, Vidocin, Zohydro ER) – 80mg, Hydromorphone (Dilaudid, Exalgo) – 18mg, Oxymorphone (Opana, Opana ER) – 30mg).(All doses are the 24 hours dosage equivalent to 80mg morphine. Individuals at or above these daily doses should be considered opioid tolerant. If a patient is on a combination of 2 different medications, add the 2 equivalents together and see if it is equal to or above 80mg morphine. For example, if someone is on 30mg oxycodone daily (which is about 50mg morphine equivalents, given that 50mg oxycodone equals 80mg morphine) PLUS 50mg Hydrocodone (which is about equivalent to another 50mg morphine, given that 80mg hydrocodone equals 80mg morphine), then this person is a total of 100mg morphine equivalents daily).* 2) Patients taking opioid agonist or agonist/antagonists (e.g. suboxone, revia, vivitrol, contrive) If patient has a personal community pain physician or pain medication prescriber please provide contact info

Name _____ Telephone _____

TREATING ACUTE PAIN

- Uninterrupted treatment of opiate addiction and aggressive pain management for current situation
- Inadequate treatment of acute pain might lead to chronic pain
- Focus on multi modal analgesia

USE MULTIMODAL TREATMENT

- Multimodal Non-opioid Agents for Preemptive Analgesia
- Suggested Dose (Two hours before surgery)
  - Acetaminophen PO 1000 mg (over 50 kg)
    Celecoxib PO 200-400 mg
  - Pregabalin PO 75-150 mg
  - Gabapentin PO 900-1200 mg

Consider Local Anesthesia when possible (Regional, Blocks, Infiltration)

Consider Infusion Ketamine and /or Lidocaine, Dexmedetomidate

MANAGEMENT OF PATIENTS TREATED WITH METHADONE

- For Patients Taking Other opioids- Convert
- Convert the calculated oral MED in IV dose of hydrochloride morphine, according to the oral:IV ratio for morphine of 3:1

Equianalgesic doses of opioids

Opioid	Approximate oral equianalgesic dose	Onset	Duration	Half-life
Morphine (reference drug)*	30 mg	2–3 h	8–12 h	2–4 h
Tramadol*	150 mg	1–2 h	8–12 h	2–4 h
Codeine (with APAP)	200 mg	30–60 min	4–8 h	3–4 h
Oxycodone*	20 mg	1–2 h	6–10 h	3–4 h
Hydromorphone	7.5 mg	12–14 h	20–24 h	8–16 h
Oxymorphone	10 mg	30–45 min	4–6 h	2–3 h
Hydrocodone (APAP, ASA, or ibuprofen)	30 mg	15–30 min	4–8h	2–3 h

TREATMENT- BUPRENORPHINE

- A derivative of Thebaine that is a more potent (25 - 40 times) analgesic than morphine. Partial agonist at mu and kappa antagonist
- Ceiling effect for both euphoria and respiratory depression
- About 30 times as potent as Morphine
- Extremely High receptor affinity. Highly lipophilic Highly protein binding
- Half life 37 hrs 5 half lives = approx. 7 days

Substance abuse and mental health services administration buprenorphine. 2018; HTTPS://www.SAMHSA.gov/medication-assisted-treatment/treatment/buprenorphine. July 6, 2018

TREATMENT- BUPRENORPHINE

- Treating Patients on this medication and Having Surgery
- What to do?
  Continue use?
  Decrease?
  Stop?
- How would/should I change my management of this patient?

TREATMENT OF ACUTE PAIN WITH CHRONIC ADDICTION

- Early and Close Communication with Team
- Conversion to morphine equivalents
- Methadone
  Take oral
  Change to SQ or IM
- Buprenorphine
  Continue-can be used for Acute Pain
  Hold for several Days

Principles of treating acute pain in a patient with opioid dependence.

Create a supportive, nonjudgmental environment
Establish whether other drugs are misused
Analgesic plan Optimize nonopioid analgesia Use increased doses of opioids compared with opioid-naive patients but with careful monitoring for side effects Change from parenteral to oral formulations of opioids as soon as possible
Withdrawal management plan Continue opioid substitution therapy or replace with an appropriate opioid Consider withdrawal syndromes of other drugs taken
Minimize stress
Allow for multidisciplinary discharge planning

RELAPSE

- Intravenous opiates- stronger reinforcing effect
- Oral opiates and sustained release opiates lower abuse potential
- Best treated with short acting formulations since acute pain fluctuates
- If patient currently abstinent- may not want to receive opiates or intravenous opiates for acute pain control- respect their wish
- Evidence demonstrates relapse is small with perioperative opiates evidence also demonstrates unrelieved pain can be a trigger as well for relapse

MEDICATIONS INEFFECTIVE

Quantitative sensory testing has shown that, similar to patients with pain taking long-term opioids, those abusing heroin and those on methadone and buprenorphine substitution therapy may develop hyperalgesia- Opioid-induced hyperalgesia

Opioid tolerance is the decreased effectiveness of opioids over time, such that higher doses are needed to achieve the same effect-Opioid tolerance

CDC STATEMENT

- **When prescribing opioids for chronic pain, clinicians should use urine drug testing before starting opioid therapy and consider**
- **urine drug testing at least annually to assess for prescribed medications as well as other controlled prescription drugs and illicit drugs**

–

http://www.cdc.gov/mmwr/volumes/65/rr/rr6501e1.htm

URINE DRUG SCREEN

- Reasons
  - Is the patient taking the medication?
  - Is the patient taking any other medication written or otherwise?
  - Keeping patient honest
- Point of Care cup- immunoassay Med is there to react or not
  - Cheap
  - Easy
  - Immediate
- May have False positive and negative findings
  - Follow up with quantitative study
  - Cut off might be too high

URINE DRUG SCREEN

Low-Risk Level	UDT every 1-2 years	State drug monitoring program - 2x per year
Medium-Risk Level	UDT every 6-12 months	State drug monitoring program - 3x per year
High-Risk Level	UDT every 3 months	State drug monitoring program - 4x per year

From: Prescription of Controlled Substances: Benefits and Risks

URINE DRUG SCREEN

- Quantitative study
  - Lab
  - Expensive
  - Time
  - -Tells you EXACTLY what is in the system

URINE DRUG SCREEN

- Use the simple and point of care-Baseline
- If Negative or Positive for any other substance- Send out for confirmation
- Point of care does NOT determine Quantity
- More expensive testing determines the EXACT amount
- Medication MUST be present
  - Prevent Diversion
  - Determines exact amount
  - Must change clinical course if Unusual finding

URINE DRUG SCREEN

- • Practice in America can vary with some not using UDT at all and others getting an excessive amount of UDT.
- **• The people performing an excessive amount of UDTs almost invariable are the owners or the one's who profit from the testing performed**. - Greed

URINE DRUG SCREENING

- • Confirm a person's relayed medical history
  - – Supports or refutes their use of licit and illicit chemicals
  - – Supports or refutes the medical regimen they are purported to be taking
- • Used to decide whether to initiate, continue or maintain a therapy

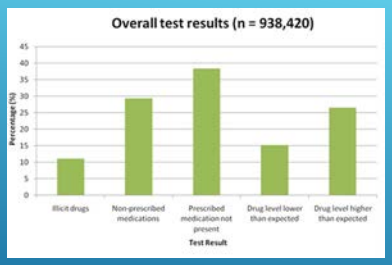
URINE DRUG SCREENING

- Random collection.
- Urinalysis must have a certain criteria
- temperature 90 to 100°F
- pH 4.5-8 .5
- creatinine greater than 20 mg/dl
- Before obtaining as patient what they are taking should we be looking for anything in this urine?
- If there any concerns or questions always send off to the lab for confirmatory testing.

URINE DRUG SCREEN

- Amphetamines / methamphetamines
- benzodiazepines
- barbiturates
- marijuana
- cocaine
- PCP
- methadone
- opioids (narcotics) Natural and synthetic

Urine detection of drugs (approximate duration in h/d).
Buprenorphine and metabolites: 8 d
Cocaine metabolite: 48–72 h
Methadone maintenance dosing: 7–8 d
Heroin (diamorphine), detected as morphine, codeine, dihydrocodeine, and propoxyphene: 48 h
Cannabinoids, single use: 3–4 d
Cannabinoids, heavy or chronic use: up to 45 d
Amphetamines: 48 h
Benzodiazepine (short acting, such as midazolam): 12 h
Benzodiazepine (long acting, such as diazepam): over 7 d



URINE DRUG SCREENING

URINE DRUG SCREENING WHO'S AT RISK?

People are evaluated for being low, moderate, or high risk for substance abuse

- – Low risk = 65% of populace = do not abuse now or in past chemicals or have psychiatric disease
- – Moderate risk = 15% of populace = people who will abuse/use chemicals both licit or illicit at times and people with psychiatric disease
- – High risk = 20% of populace = people who actively abuse or are addicted to chemicals (ie smokers)

URINE DRUG SCREENING WHO'S AT RISK?

- • Low risk patients
  - – Once a year or if there is an appearance of any aberrant disease
- • Moderate risk patients
  - – Once or more a year in addition to any appearance of any aberrant disease
- • High Risk patients
  - – With a frequency necessary to assure they are staying with the boundaries
  - • Some may require weekly testing

URINE DRUG SCREENING QUALITATIVE TESTING

- Tells you whether a chemical is present if it has a concentration in the UDT above a predetermined limit.
  - – If the test limit is 10 U/cc and you have 9 or less U/cc then the results would indicate that this chemical is not in your system
  - – If the test limit is 10 U/cc and you have 10 U/cc or above in your urine than the test would be positive.
  - – This testing does not give you any specific information about the exact concentration of a chemical in the urine. To know this number, you order a quantitative test.

URINE DRUG SCREENING QUANTITIVE TESTING AND FRAUD

- • He does quantitative testing in addition to qualitative testing for every patient which is substandard. Only qualitative testing with additional quantitative testing needs to be performed.
- • He tests every single patient getting opioids in his practice in the same manner every 2 months. This fraud in the guise of providing good medical care has netted him and/or the UDT company he directs in his office to **$5.8 million dollars/year** of overpayments by the government, patients and their insurance.
- • This fraud is known to have been occurring for years.

WHAT TO DO?

- Believe the patient.
- Let them know you're sending the qualitative urinalysis out for evaluation with specific testing.
- Let the patient know that the specific testing is never wrong.
- Let the patient have a chance to be honest if necessary.

FALSE POSITIVE RESULTS

- Antibiotics
- Antidepressants
- Antihistamines
- Antipsychotics
- Cold Remedies/Decongestants
- DHEA Hormone
- Ibuprofen
- Melanin
- OTC drugs
- Pain relievers
- Poppy seeds

https://www.confirmbiosciences.com/knowledge/terminology/drug-test-false-positive-false-negative/

SUMMARY

- History and Physical
- Documentation of Risk Factors
- Understand current Substance Use Disorder (treatment or remission?)
- Appreciate how much risk this patient is presenting(Do I attempt to treat?)
- Can the patient be treated in a non opiate format
- Will my treatment lead to relapse

SELF EVALUATION

Caring for Patients with Current or Past Substance Use Disorder

1. T/F - Patients with substance use disorder tend to have standalone issues from a psychiatric standpoint.

2. T/F - Usually one can assess patients for the risk of substance use disorder with a visual assessment and knowledge of the family background.

3. T/F - You have a patient on methadone at 80 mg a day. The patient is stable. Now, the patient presents with acute back pain in your office. Would it be reasonable to provide the patient with muscle relaxants and/or Medrol dose pack? Or given the fact that they are on methadone (a powerful pain medication) the medication should cover this patient's discomfort?

4. T/F - A patient is taking buprenorphine who is scheduled for an in office irrigation and drainage of a cyst. Continue this medication.

5. T/F - It is reasonable for patients with substance use disorder in active treatment for their medical issue to use co-analgesic medication such as multi modal therapy.

6. T/F - When patients are given more opiate therapy and their pain seems to be get worse this is known as hypoanalgesia.

7. T/F - If I have a patient in my practice who I am providing buprenorphine medication, I need to obtain a urine drug screen 4 times a year if they have been compliant with pill counts and office visits?

8. For patients obtaining a urine drug screen and there is a finding that was unintended, what are my next steps?

    a. Discharge the patient
    b. Continue to write medication and follow-up in another month
    c. Assume a lab error and continue to write for the medication
    d. Send the urine drug screen out for confirmation and discuss findings with patient

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

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Maximizing Practice Profitability: Metrics, Analyses, and Strategies

Carole C. Foos, CPA

Introduction

- Understanding Key Financial Ratios
- Improving Cash Flow Management
- Maximizing Profitability through Financial Analysis
- Implementing Strategies for Success

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UNDERSTANDING KEY FINANCIAL RATIOS

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Current Ratio

- Measures practice's ability to cover short-term liabilities with short–term assets
- Divide current assets (cash, A/R, inventory) by current liabilities (A/P, accrued expenses, short-term debt)
- Ratio of 1 or higher indicates ability to pay short-term obligations
  - <1 may signal liquidity issues
  - Ratio of 1.5 – 2.0 is considered healthy for a medical practice generally
  - Makes sense to benchmark your ratio against industry / specialty averages

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Current Ratio

- Factors Affecting Current Ratio
  - A/R Management - collection % and days in A/R
  - Inventory management – excess ties up working capital; too little impacts revenue
  - A/P Management – extending payment with vendors can improve current ratio
- Trend Analysis
  - Monitor changes over time to identify trends and financial challenges
- Compare with industry benchmarks
- Use in decision making
  - Determine need for additional financing
  - Evaluate impact of investment decisions
  - Identify areas for operational improvements

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Working Capital

- Indicates practice's liquidity and short-term financial health
- Difference between practice's current assets and current liabilities
- Regularly calculating ensures enough funds to cover expenses such as salary, rent, utilities, supplies
- Identifying surplus or deficit in WC allows owners to proactively maintain or improve liquidity
- Essential when planning for growth or expansion
- Mitigates financial risks associated with liquidity
- Monitor changes in WC over time to identify trends
- Calculation can help optimize cash flow management
  - Determine when to accelerate A/R, improve billing / collections
  - Negotiate better terms with suppliers or extend payment deadlines
  - Streamline inventory management

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Days in Receivables / Payables

- Days in Receivables indicates time it takes from patient service to collection
- Days in Payables = receipt of product or service to date of payment
- Improving Days in Receivables
  - Accurate and timely billing / accurate coding
  - Verify insurance information up front
  - Review claim rejections / re-processing
  - Spotlight problem payers
  - Regularly review and update billing codes
  - Monitor claim status and follow up
  - Implement clear and consistent patient collection policies
  - Train staff to effectively communicate with patients
  - Utilize technology solutions such as RCM software or outsourced billing, processing and collections
  - Use analytics to identify trends and patterns
  - Benchmark against industry standards
  - Establish relationships with payers / insurance companies
  - Stay informed about reimbursement policy changes

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IMPROVING CASH FLOW MANAGEMENT

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Cash Flow Statement

- Provides sources and uses of cash over a specific period from
  - Operations
  - Investing
  - Financing
- Operating Cash Flow (OCF)
  - Assess ability to generate cash from core business operations (patient care)
  - Positive OCF = GOOD!!
  - Monitor trends to identify fluctuations, seasonal patterns that could impact working capital
- Investing Cash Flow
  - Evaluate investments in assets such as medical equipment, facilities, technology
  - Assess impact of capital expenditures on growth objectives and long-term strategy
  - Use it to evaluate timing and magnitude of investment activities

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Cash Flow Statement

- Financing Cash Flow
  - Understand sources and uses of external financing (loans, lines of credit, capital contributions)
  - Evaluate impact of financing on overall cash position and debt levels
  - Monitor changes in debt repayments, dividends, or equity transactions
- Net Cash Flow and Cash Balance
  - Calculate net increase or decrease to determine whether practice generated or consumed cash for the period
  - Monitor changes in cash balance to ensure liquidity
  - Maintain a target cash reserve for emergencies / contingencies
- Cash Flow Ratios
  - OCF / Total Revenue and OCF/Total Debt
  - Compare to industry benchmarks
- Cash Flow Forecasting
  - Use historical data to forecast future flows and for budgeting

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MAXIMIZING PRACTICE PROFITABILITY

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Revenue and Expense Trends

- Revenue Trends
  - Total Revenue
  - Revenue Sources
  - Revenue Mix
  - Revenue Growth Rate
  - Revenue per Patient Visit
- Expense Trends
  - Total Expenses
  - Expense Categories
  - Expense Ratios
  - Expense Trend Analysis
  - Expense Control Measures
- KPI's
  - Operating margin to assess profitability from core operations
  - Profitability ratios
  - Provider productivity
  - Patient retention and acquisition
- Benchmark against industry, peers, historical
- Budget Variance Analysis

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Operating Margin

- Percentage of revenue remaining after deducting operating expenses excluding interest, taxes and non-operating items
- Provides insight into efficiency and profitability
  - Indicates efficiency in various areas such as patient consultations, diagnostic tests, treatments and procedures
  - Higher operating margin suggests effective management of expenses relative to revenue
- Cost Management
  - Higher operating margin suggests better cost management
- Operational Efficiency
  - Efficiently run practices can optimize revenue while minimizing expenses
  - Efficiency in patient and staff scheduling, workflows, and revenue cycle management
- Ability to cover fixed costs
- Compare with industry, peer group and historical benchmarks

OJMGROUP

Performance Indicators

- Patient Volume
  - Number of patients seen / treated in a specific period
  - Indicator of Demand
  - Potential for Growth
  - Helps assess capacity utilization
  - Identify trends
- Average Revenue per Patient
  - Average revenue per patient encounter
  - Higher average may indicate broader range of services / higher value treatments
  - Cross selling opportunities – screenings, tests, treatments
- Provider Productivity
  - Measures efficiency of each provider
  - Ability to see more patients, diagnose conditions, and perform treatments
  - Identifies high-performing providers so practices can appropriately incentivize, optimize schedules, provide resources

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IMPLEMENTING STRATEGIES FOR SUCCESS

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Implementation

- Regular Monitoring
- Invest in Technology
- Staff Training
- Seek Professional Help

By leveraging key financial ratios and conducting thorough financial analysis, you can significantly enhance your medical practice's efficiency, cash flow management, and profitability. Remember, proactive financial management is essential for the long-term success of your practice.

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Wealth Strategies for Today's Physician: A Multi-Media Playbook

- New content from OJM: Our first book since 2020!
- Co-authored by OJM Group partners
- Innovative multi-media format includes more than 90 links to videos and podcast episodes that offer unique perspectives and real-world examples
- Videos to be periodically updated by OJM so that the Playbook remains current over time
- Crafted in six informative Strategies that can help physicians protect assets, reduce taxes, invest wisely and build wealth for retirement
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Scan the QR Code to get a Free Copy!

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SELF EVALUATION

Maximizing Practice Profitability: Metrics, Analyses, and Strategies

True/False

1. Current Ratio is used to measure practice's ability to cover short term liabilities with short term assets.
2. A current ratio of 0.5 indicates strong liquidity.
3. Working capital is the difference between current assets and current liabilities.
4. Accurate coding has no effect on Days in Receivables.
5. Negative operating cash flow indicates a healthy practice.
6. Patient Volume is a performance indicator that provides insight into practice efficiency.
7. Proper utilization of practice management software and financial tools can streamline processes and improve efficiency.

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

Steven J. Luccarelli

Steven J. Luccarelli, of New York, New York, is a American Board of Orthodontics-certified orthodontist and has been a Clinical Professor of Orthodontics at Columbia University for the past 35 years. He has received several awards including the Outstanding Achievement Award by the International College of Dentistry, and the Columbia Excellence in Clinical Operative Dentistry Award. Dr. Luccarelli is a member of the OKU Dental Honor Society and has lectured across the country and internationally on topics including Invisalign, Modern Orthodontic Advancements, and Laser Guided Orthodontics.

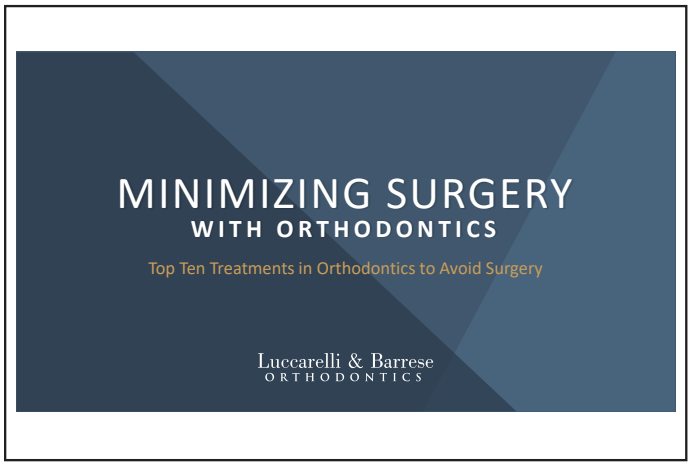
You may contact Dr. Luccarelli with your questions or comments by email at steveluccarelli@gmail.com.

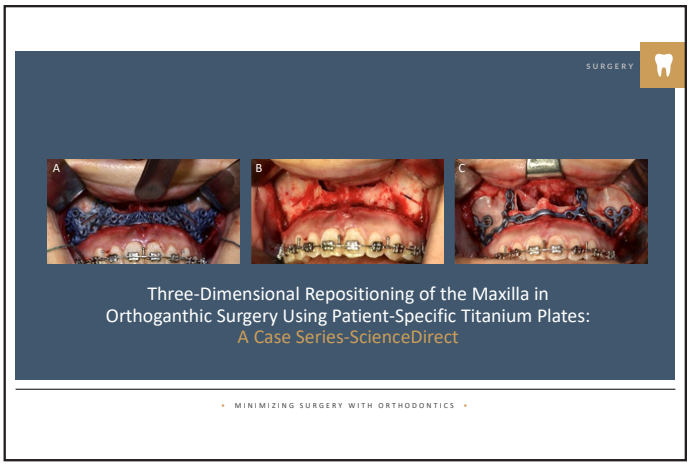
Luccarelli & Barrese
ORTHODONTICS

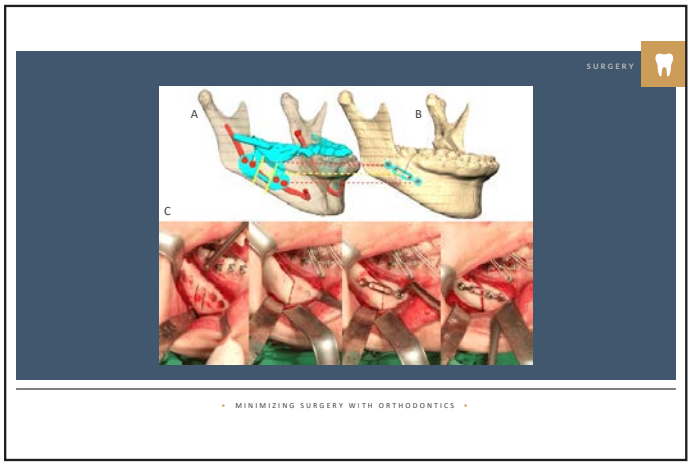
51 Charles Street
Mineola, NY 11501

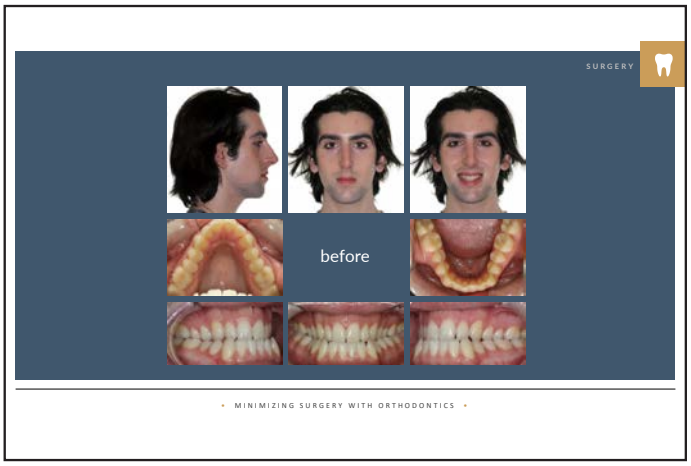
Minimizing Surgery with Orthodontics – Part 1

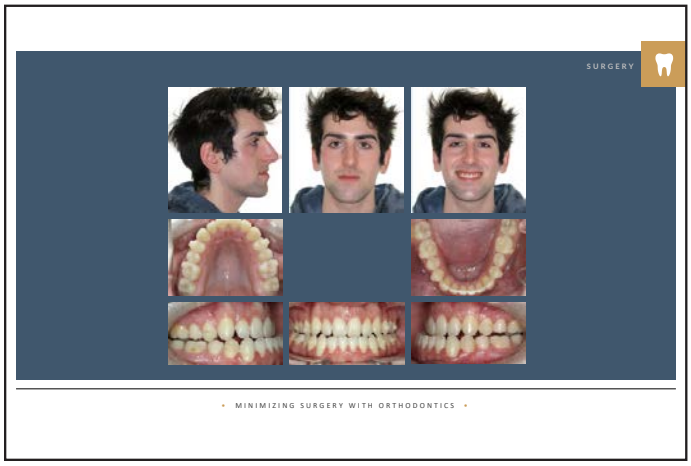
Steven J. Luccarelli, DDS

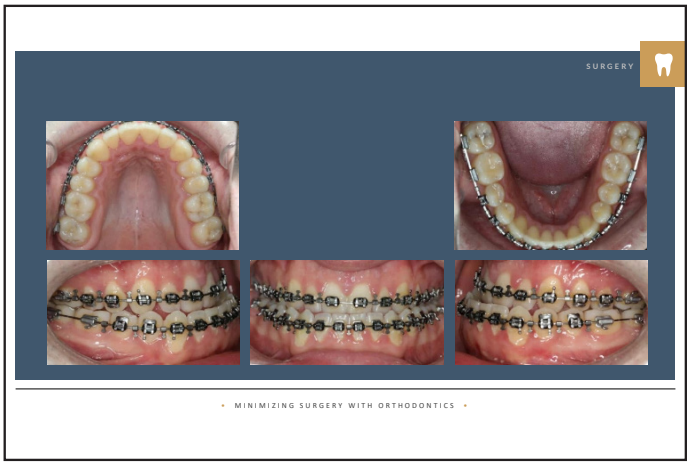


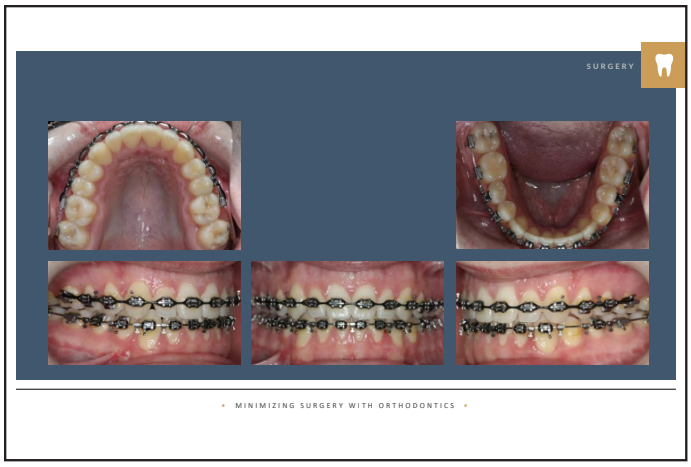








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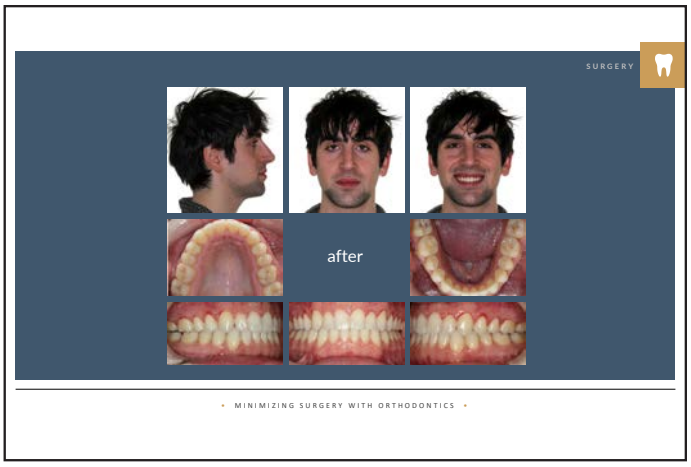
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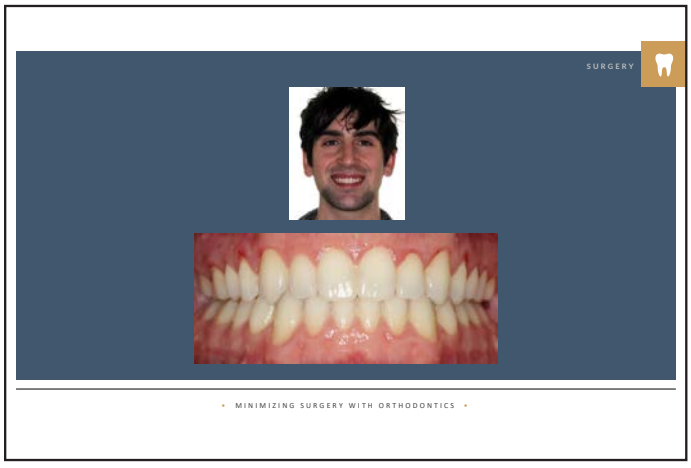
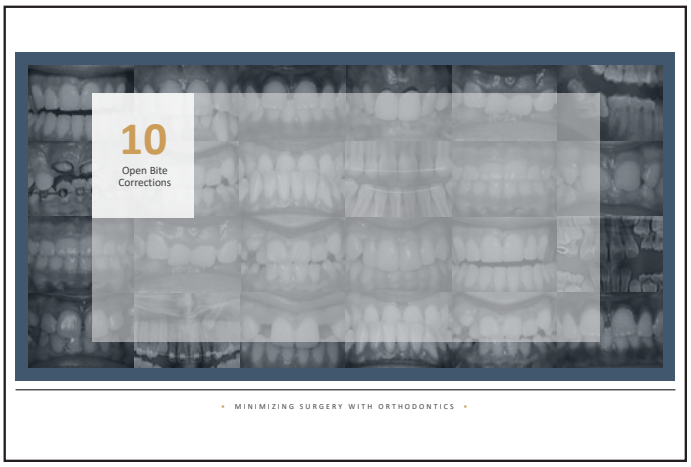
after
• MINIMIZING SURGERY WITH ORTHODONTICS •

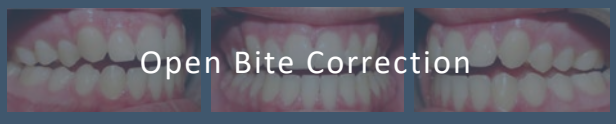

SURGERY
• MINIMIZING SURGERY WITH ORTHODONTICS •


TOP 10
• MINIMIZING SURGERY WITH ORTHODONTICS •


10
Open Bite Corrections
9
Changing Profiles and Lip Posture
8
Missing Teeth and Avoiding Implants
7
Gummy Smile Correction
6
Forced Eruption to Reduce Grafting
5
Lasers to Minimize Surgery
4
Impacted Second Molars
3
Class III Non-Surgical Correction
2
Missing Laterals
1
Rescuing Hopeless Impactions
• MINIMIZING SURGERY WITH ORTHODONTICS •


10
Open Bite Corrections
• MINIMIZING SURGERY WITH ORTHODONTICS •

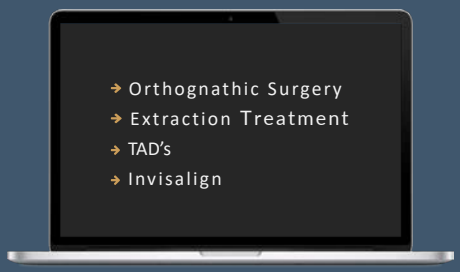
10



Open Bite Correction

• MINIMIZING SURGERY WITH ORTHODONTICS •

OPEN BITE CORRECTION 10



- Orthognathic Surgery
- Extraction Treatment
- TAD's
- Invisalign

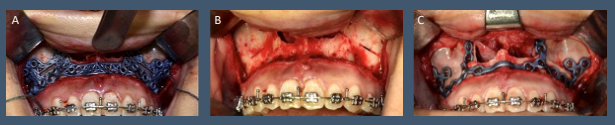
• MINIMIZING SURGERY WITH ORTHODONTICS •

OPEN BITE CORRECTION 10

Orthognathic Surgery

• MINIMIZING SURGERY WITH ORTHODONTICS •

OPEN BITE CORRECTION 10
Orthognathic Surgery



• MINIMIZING SURGERY WITH ORTHODONTICS •

OPEN BITE CORRECTION 10
Orthognathic Surgery

• MINIMIZING SURGERY WITH ORTHODONTICS •

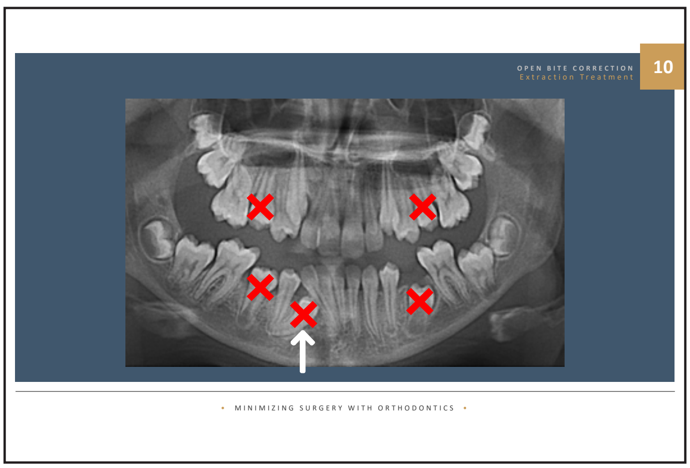
OPEN BITE CORRECTION 10

Extraction Treatment

• MINIMIZING SURGERY WITH ORTHODONTICS •


OPEN BITE CORRECTION
Extraction Treatment
10
MINIMIZING SURGERY WITH ORTHODONTICS


OPEN BITE CORRECTION
Extraction Treatment
10
MINIMIZING SURGERY WITH ORTHODONTICS


OPEN BITE CORRECTION
Extraction Treatment
10
MINIMIZING SURGERY WITH ORTHODONTICS


OPEN BITE CORRECTION
Extraction Treatment
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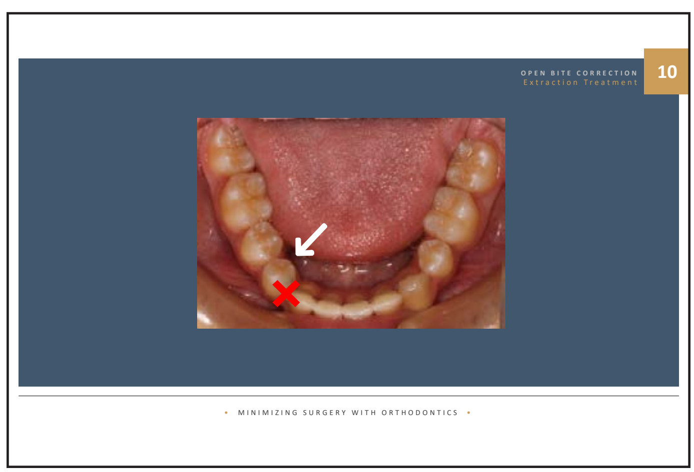
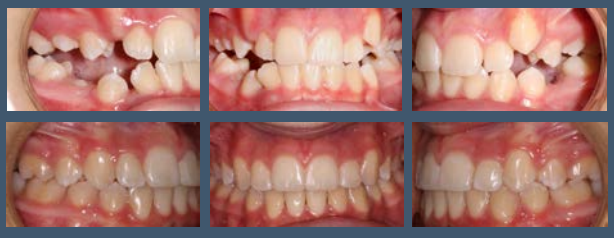
MINIMIZING SURGERY WITH ORTHODONTICS


OPEN BITE CORRECTION
Extraction Treatment
10
MINIMIZING SURGERY WITH ORTHODONTICS


OPEN BITE CORRECTION
Extraction Treatment
10
MINIMIZING SURGERY WITH ORTHODONTICS

OPEN BITE CORRECTION
Extraction Treatment
10



• MINIMIZING SURGERY WITH ORTHODONTICS •

OPEN BITE CORRECTION
Extraction Treatment
10

• MINIMIZING SURGERY WITH ORTHODONTICS •

OPEN BITE CORRECTION
10

TAD's

• MINIMIZING SURGERY WITH ORTHODONTICS •

OPEN BITE CORRECTION
TAD's
10

"The Pursuit of Perfect Anchorage"

• MINIMIZING SURGERY WITH ORTHODONTICS •

OPEN BITE CORRECTION
TAD's
10

Three Main TAD Movements

- Moving Teeth Vertically Intrusion
- Moving Teeth Back
- Moving Teeth Forward

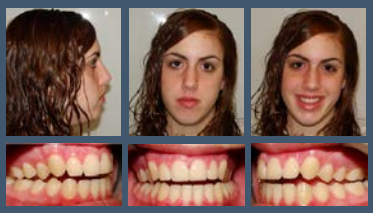
• MINIMIZING SURGERY WITH ORTHODONTICS •

OPEN BITE CORRECTION
TAD's
10

Moving Teeth Vertically—Intrusion

• MINIMIZING SURGERY WITH ORTHODONTICS •

OPEN BITE CORRECTION
TAD's
10



Vertical Skeletal Excess

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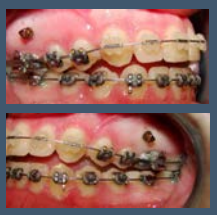
OPEN BITE CORRECTION
TAD's
10



TAD's Placed

• MINIMIZING SURGERY WITH ORTHODONTICS •

OPEN BITE CORRECTION
TAD's
10

NiTi Coils Placed

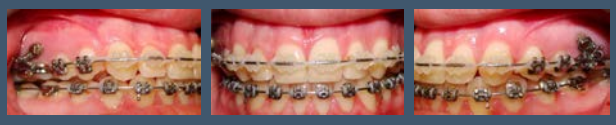
• MINIMIZING SURGERY WITH ORTHODONTICS •

OPEN BITE CORRECTION
TAD's
10

After Two Months

• MINIMIZING SURGERY WITH ORTHODONTICS •

OPEN BITE CORRECTION
TAD's
10



After Four Months

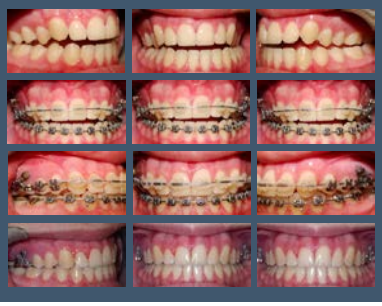
• MINIMIZING SURGERY WITH ORTHODONTICS •

OPEN BITE CORRECTION
TAD's
10

Total Treatment Time: Six Months

• MINIMIZING SURGERY WITH ORTHODONTICS •

OPEN BITE CORRECTION
TAD's
10

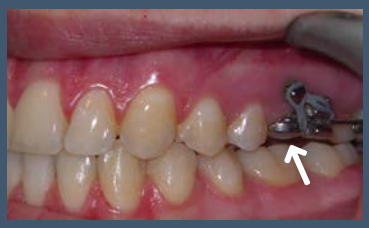


• MINIMIZING SURGERY WITH ORTHODONTICS •

OPEN BITE CORRECTION
TAD's
10

• MINIMIZING SURGERY WITH ORTHODONTICS •

OPEN BITE CORRECTION
TAD's
10



• MINIMIZING SURGERY WITH ORTHODONTICS •

OPEN BITE CORRECTION
TAD's
10

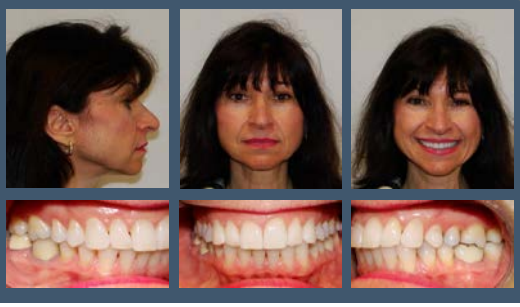
Two Years Post Treatment

• MINIMIZING SURGERY WITH ORTHODONTICS •

OPEN BITE CORRECTION
10

• MINIMIZING SURGERY WITH ORTHODONTICS •

OPEN BITE CORRECTION
Invisalign
10



• MINIMIZING SURGERY WITH ORTHODONTICS •

OPEN BITE CORRECTION
Invisalign
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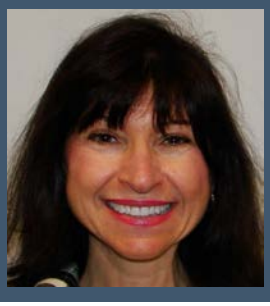
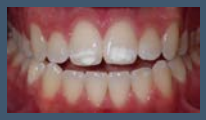


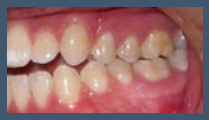
• MINIMIZING SURGERY WITH ORTHODONTICS •

OPEN BITE CORRECTION
Invisalign
10

• MINIMIZING SURGERY WITH ORTHODONTICS •

OPEN BITE CORRECTION
Invisalign
10

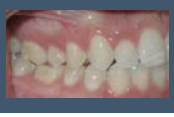




Anterior Open Bite

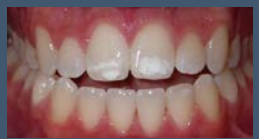
• MINIMIZING SURGERY WITH ORTHODONTICS •

OPEN BITE CORRECTION
Invisalign
10



• MINIMIZING SURGERY WITH ORTHODONTICS •

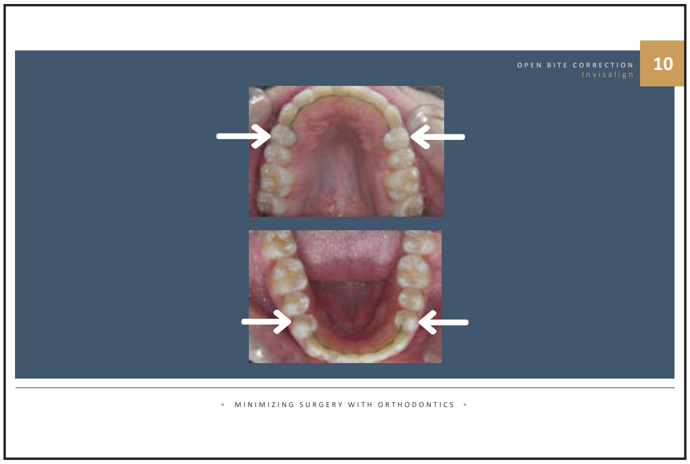
OPEN BITE CORRECTION
Invisalign
10



• MINIMIZING SURGERY WITH ORTHODONTICS •

OPEN BITE CORRECTION
Invisalign
10

• MINIMIZING SURGERY WITH ORTHODONTICS •


OPEN BITE CORRECTION
Invisalign
10
MINIMIZING SURGERY WITH ORTHODONTICS


OPEN BITE CORRECTION
Invisalign
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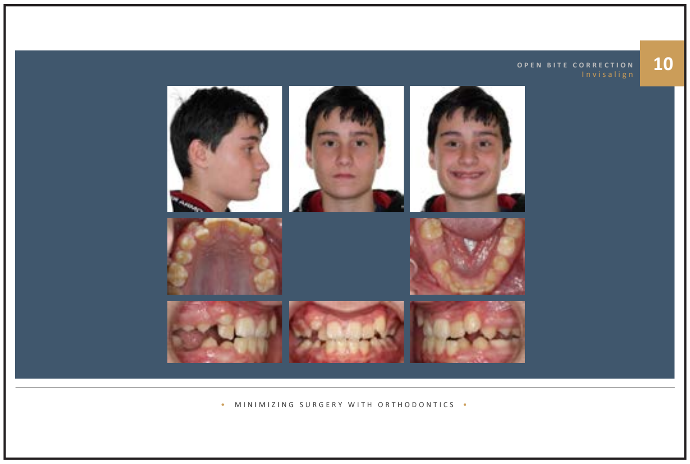
MINIMIZING SURGERY WITH ORTHODONTICS


OPEN BITE CORRECTION
Invisalign
10
MINIMIZING SURGERY WITH ORTHODONTICS


OPEN BITE CORRECTION
Invisalign
10
MINIMIZING SURGERY WITH ORTHODONTICS


OPEN BITE CORRECTION
Invisalign
10
MINIMIZING SURGERY WITH ORTHODONTICS


OPEN BITE CORRECTION
Invisalign
10
Invisalign Open Bite (Special Needs Patients)
MINIMIZING SURGERY WITH ORTHODONTICS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Invisalign
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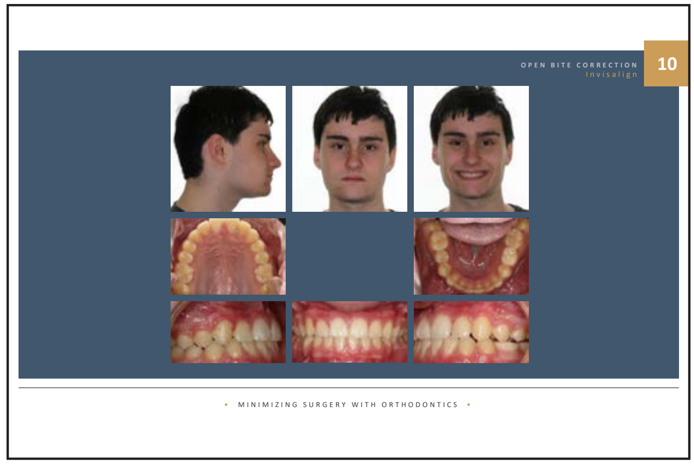
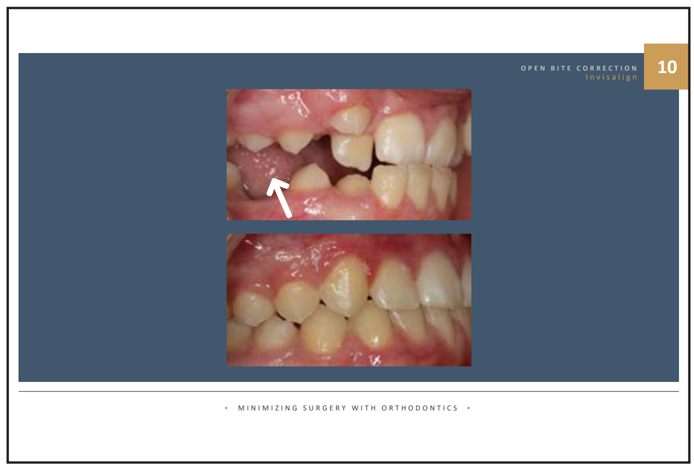
MINIMIZING SURGERY WITH ORTHODONTICS


OPEN BITE CORRECTION
Invisalign
10
MINIMIZING SURGERY WITH ORTHODONTICS


OPEN BITE CORRECTION
Invisalign
10
MINIMIZING SURGERY WITH ORTHODONTICS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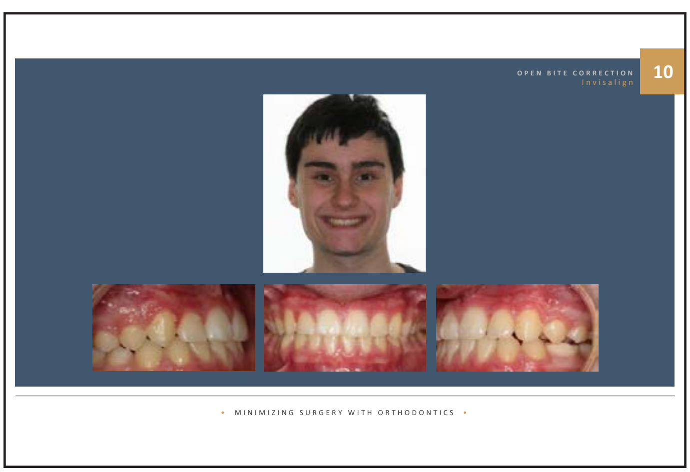
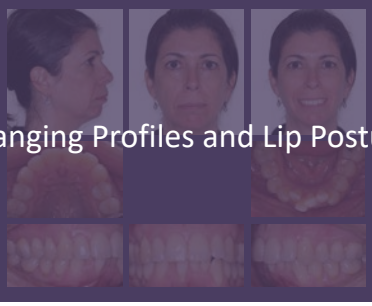
Invisalign
10
MINIMIZING SURGERY WITH ORTHODONTICS


OPEN BITE CORRECTION
Invisalign
10
MINIMIZING SURGERY WITH ORTHODONTICS


10
Open Bite Corrections
9
Changing Profiles and Lip Posture
MINIMIZING SURGERY WITH ORTHODONTICS

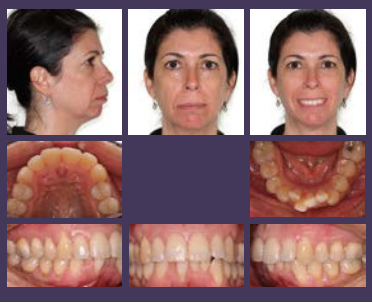
9



Changing Profiles and Lip Posture

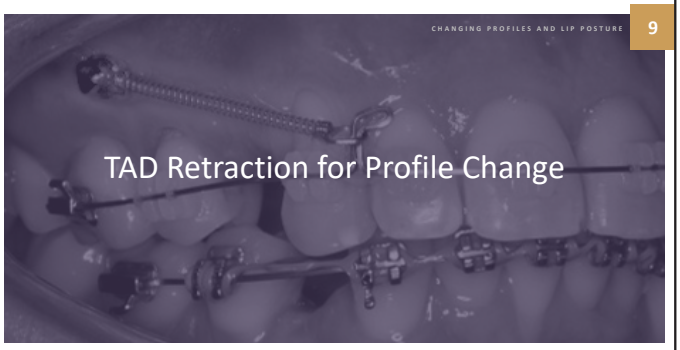
• MINIMIZING SURGERY WITH ORTHODONTICS •

CHANGING PROFILES AND LIP POSTURE 9



• MINIMIZING SURGERY WITH ORTHODONTICS •

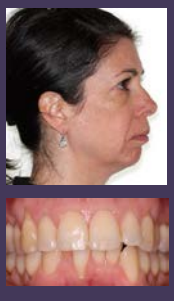
CHANGING PROFILES AND LIP POSTURE 9



TAD Retraction for Profile Change

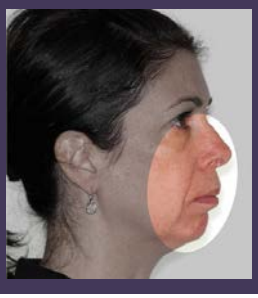
• MINIMIZING SURGERY WITH ORTHODONTICS •

CHANGING PROFILES AND LIP POSTURE 9
TAD Retraction for Profile Change



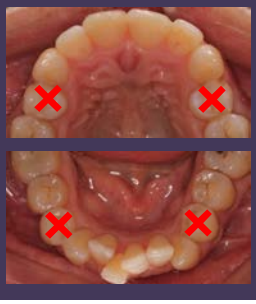
• MINIMIZING SURGERY WITH ORTHODONTICS •

CHANGING PROFILES AND LIP POSTURE 9
TAD Retraction for Profile Change

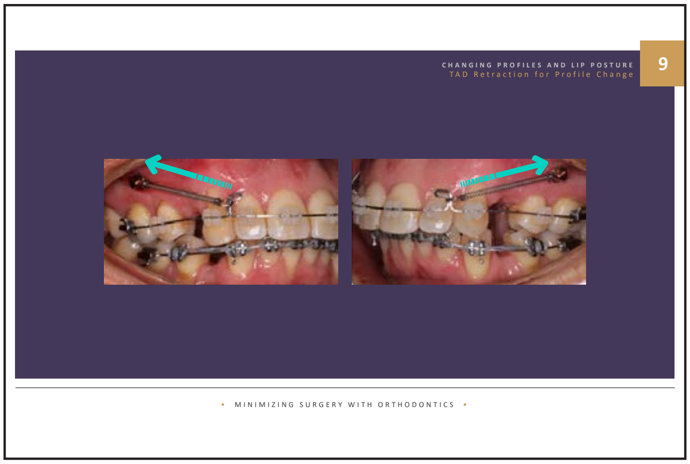


• MINIMIZING SURGERY WITH ORTHODONTICS •

CHANGING PROFILES AND LIP POSTURE 9
TAD Retraction for Profile Change



• MINIMIZING SURGERY WITH ORTHODONTICS •


CHANGING PROFILES AND LIP POSTURE
TAD Retraction for Profile Change
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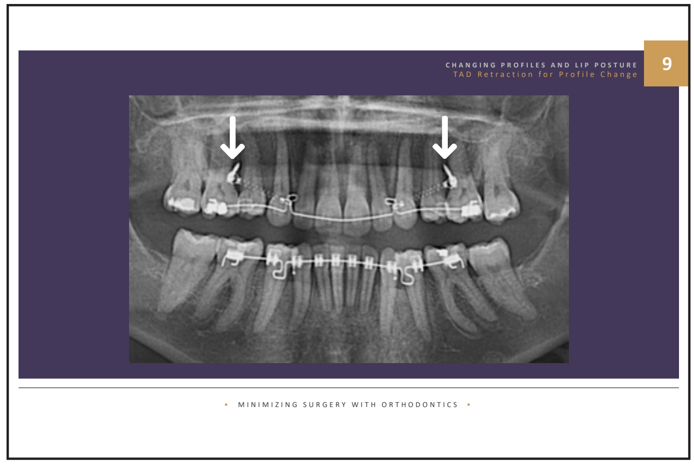
MINIMIZING SURGERY WITH ORTHODONTICS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TAD Retraction for Profile Change
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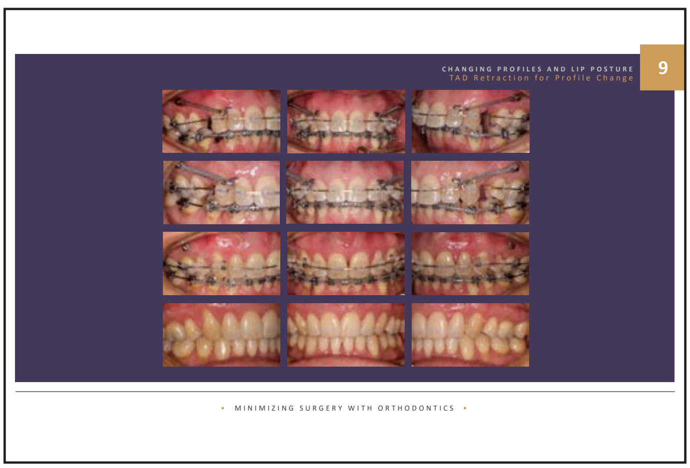
MINIMIZING SURGERY WITH ORTHODONTICS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TAD Retraction for Profile Change
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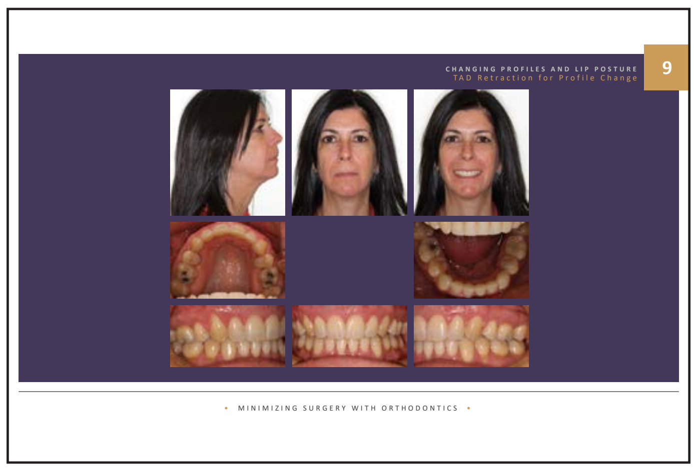
MINIMIZING SURGERY WITH ORTHODONTICS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TAD Retraction for Profile Change
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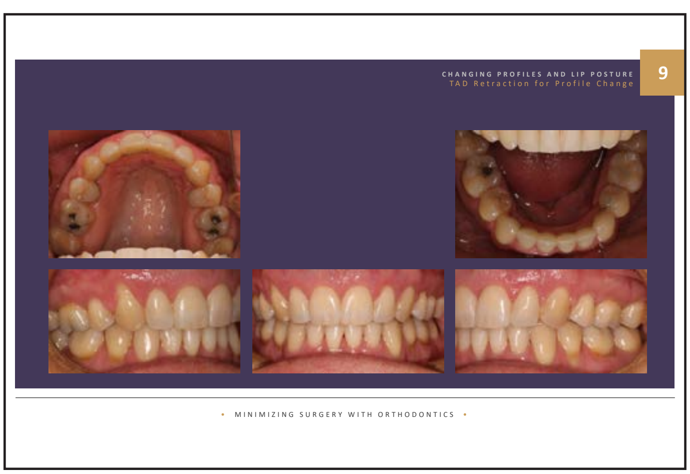
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TAD Retraction for Profile Change
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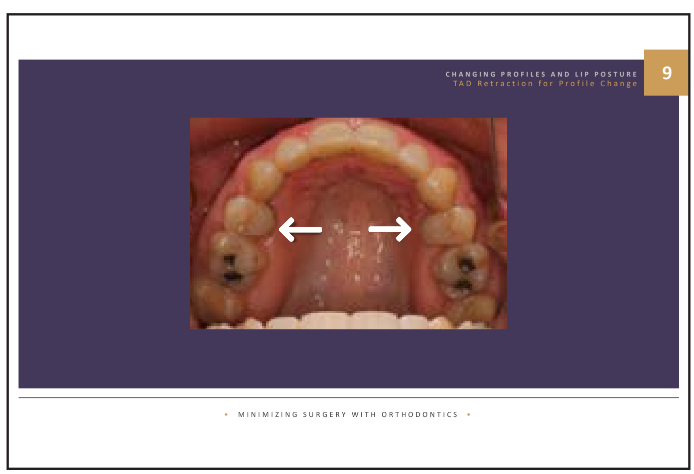
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TAD Retraction for Profile Change
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MINIMIZING SURGERY WITH ORTHODONTICS


CHANGING PROFILES AND LIP POSTURE
TAD Retraction for Profile Change
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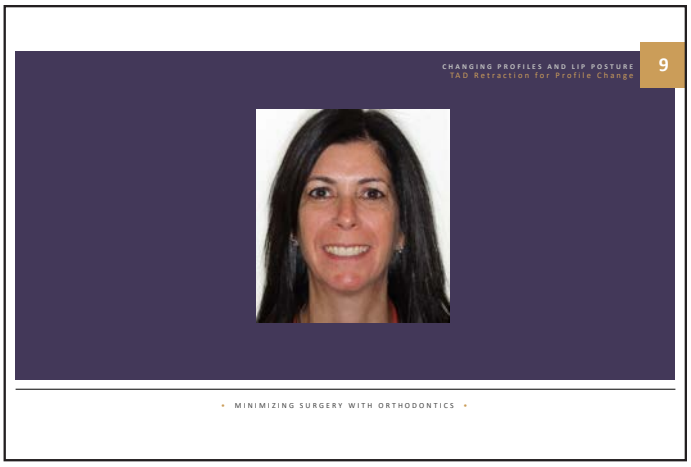
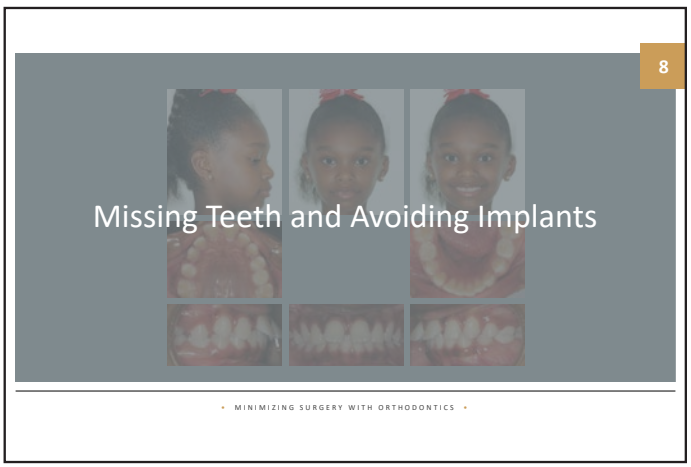
• MINIMIZING SURGERY WITH ORTHODONTICS •


CHANGING PROFILES AND LIP POSTURE
TAD Retraction for Profile Change
9
• MINIMIZING SURGERY WITH ORTHODONTICS •


10
Open Bite Corrections
9
Changing Profiles and Lip Posture
8
Missing Teeth and Avoiding Implants
• MINIMIZING SURGERY WITH ORTHODONTICS •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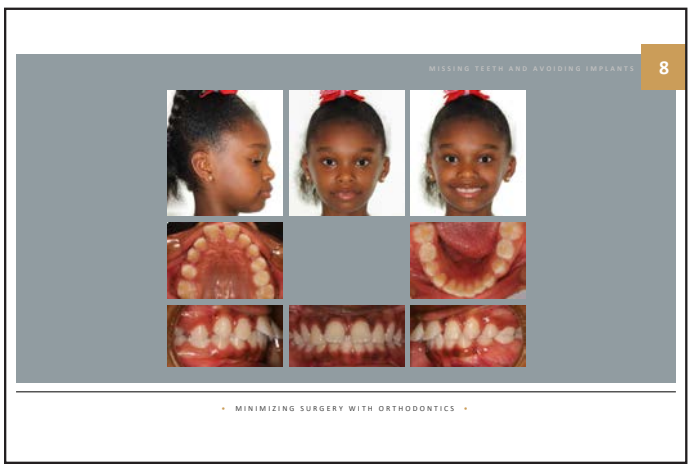
Missing Teeth and Avoiding Implants
• MINIMIZING SURGERY WITH ORTHODONTICS •


MISSING TEETH AND AVOIDING IMPLANTS
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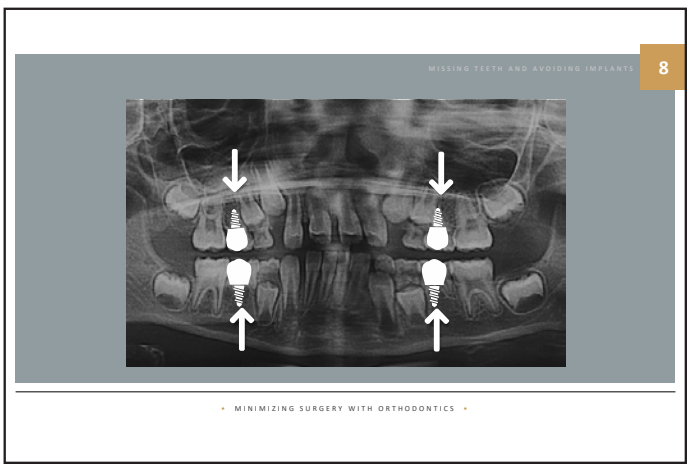
• MINIMIZING SURGERY WITH ORTHODONTICS •


MISSING TEETH AND AVOIDING IMPLANTS
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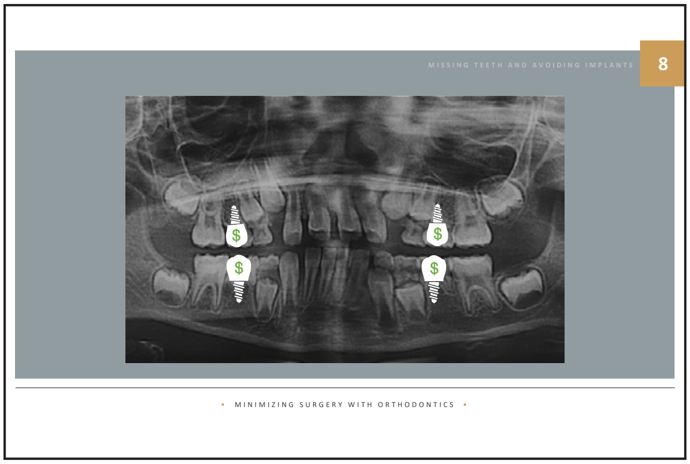
• MINIMIZING SURGERY WITH ORTHODONTICS •


MISSING TEETH AND AVOIDING IMPLANTS
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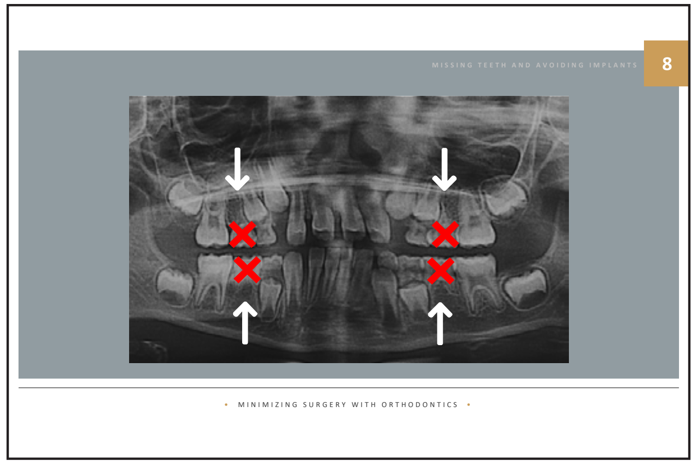
MINIMIZING SURGERY WITH ORTHODONTICS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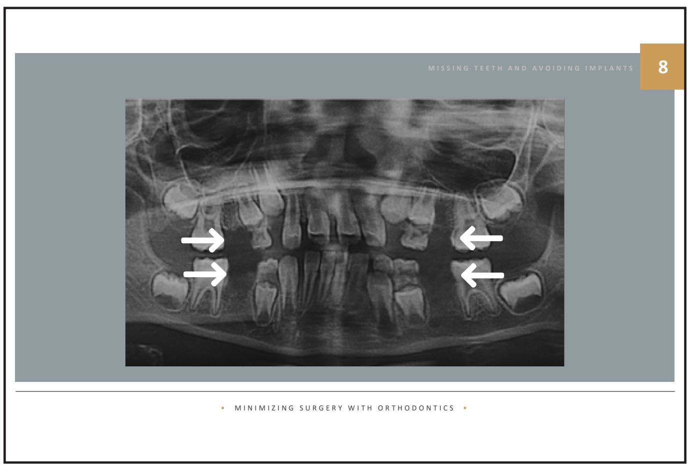
MISSING TEETH AND AVOIDING IMPLANTS
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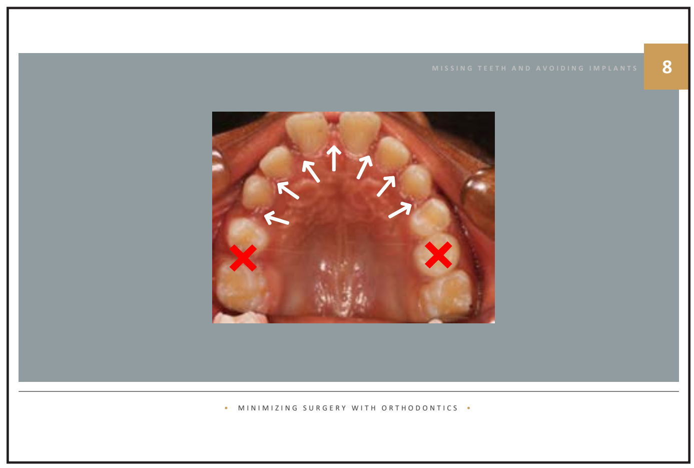
MISSING TEETH AND AVOIDING IMPLANTS
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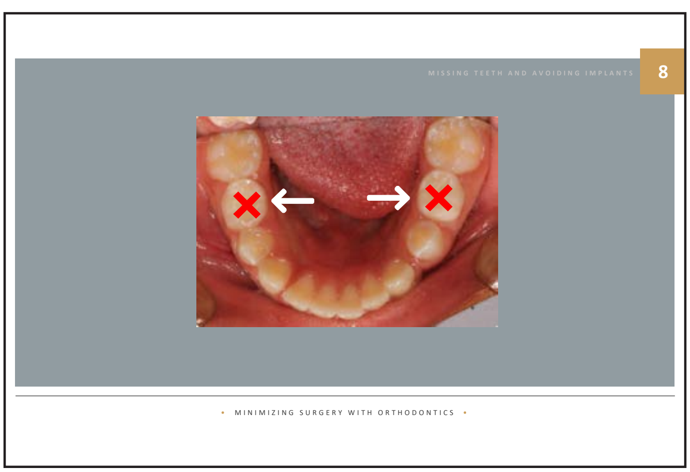
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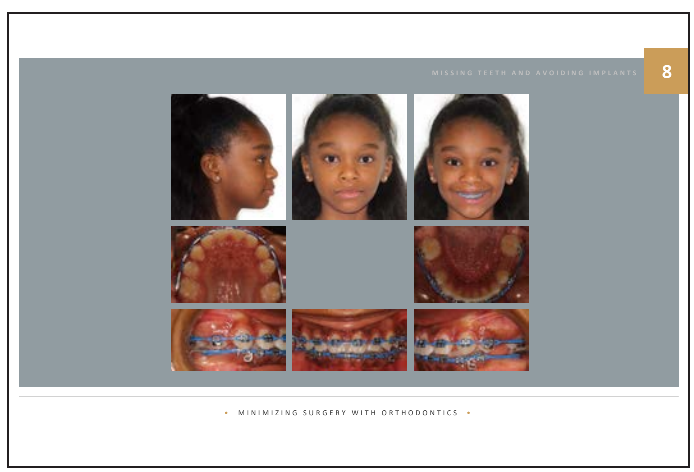
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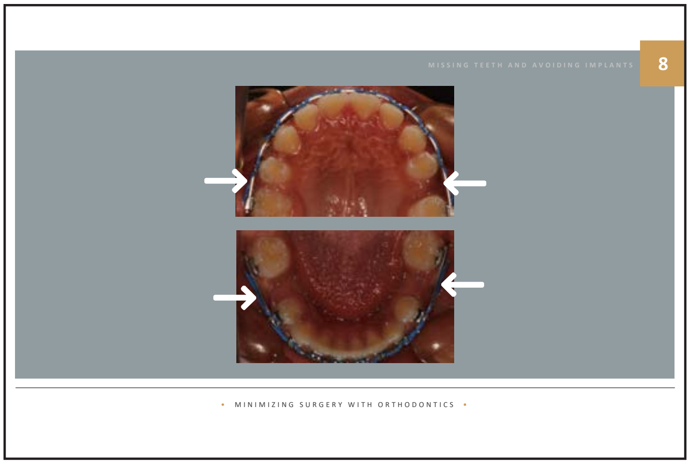
MISSING TEETH AND AVOIDING IMPLANTS
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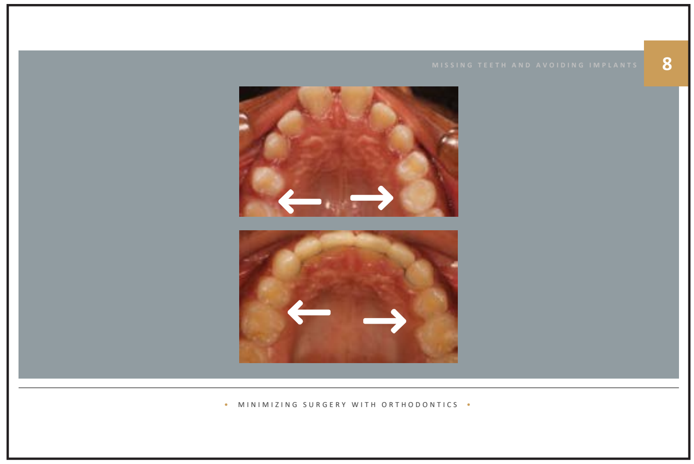
MINIMIZING SURGERY WITH ORTHODONTICS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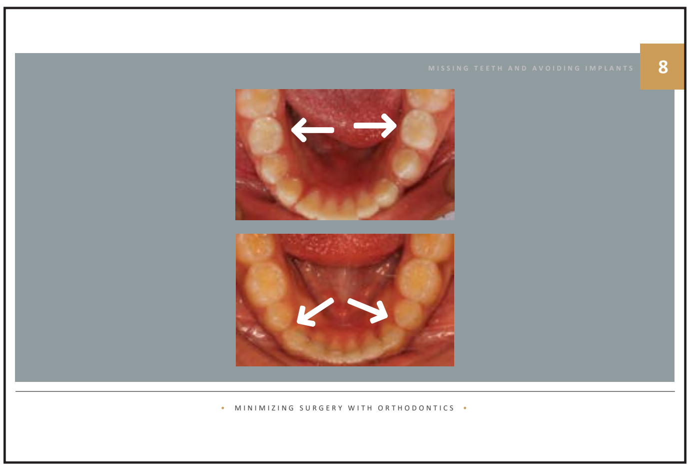
MINIMIZING SURGERY WITH ORTHODONTICS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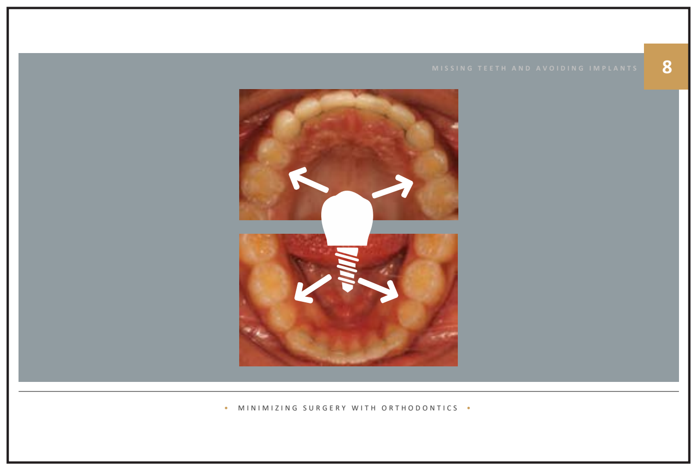
MISSING TEETH AND AVOIDING IMPLANTS
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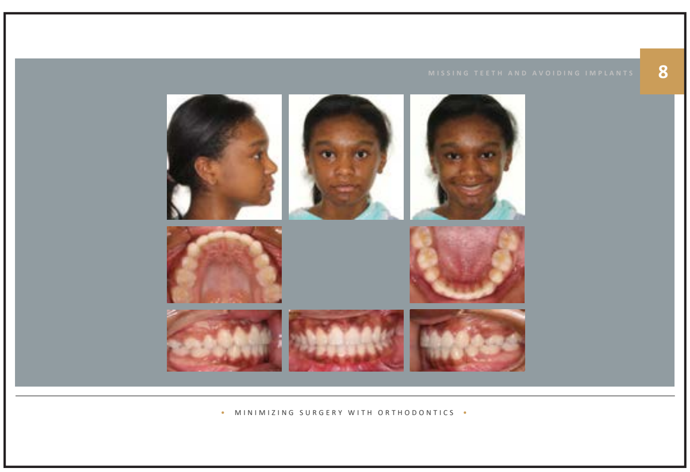
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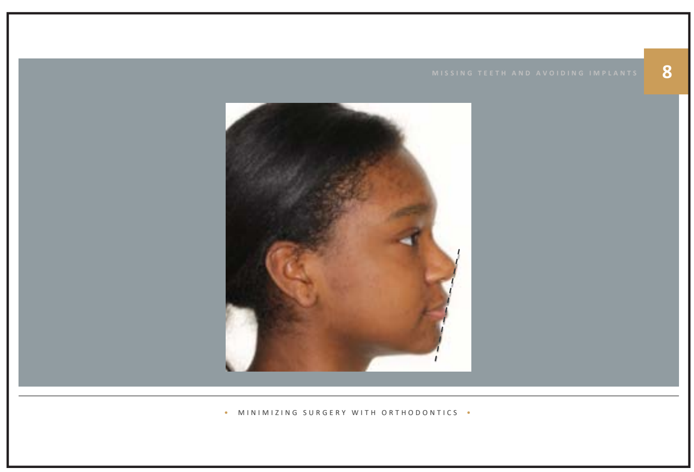
MINIMIZING SURGERY WITH ORTHODONTICS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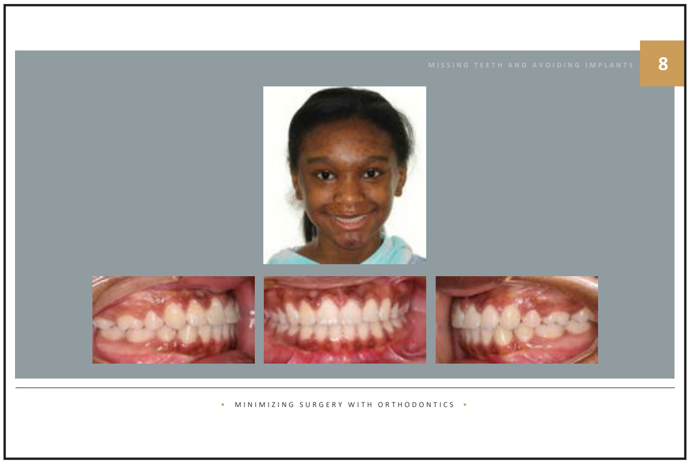
MISSING TEETH AND AVOIDING IMPLANTS
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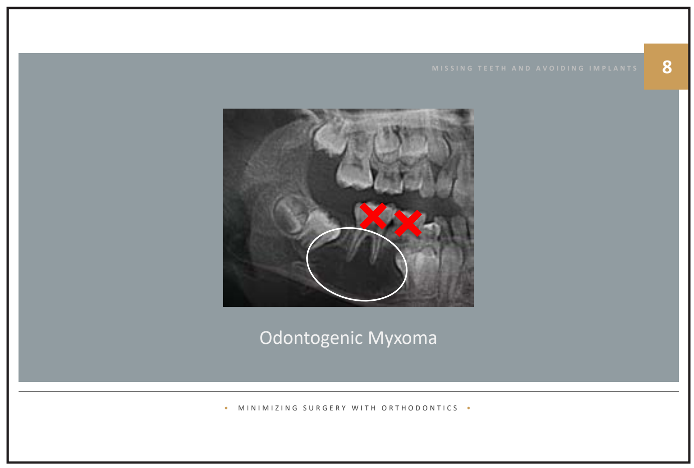
MISSING TEETH AND AVOIDING IMPLANTS
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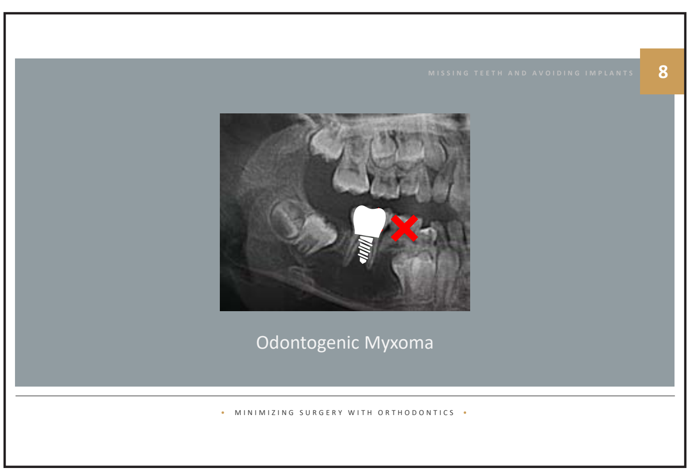
Odontogenic Myxoma
MINIMIZING SURGERY WITH ORTHODONTICS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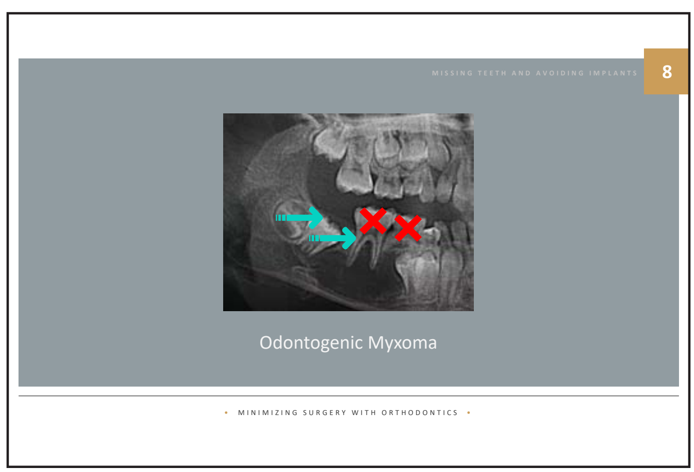
Odontogenic Myxoma
MINIMIZING SURGERY WITH ORTHODONTICS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Odontogenic Myxoma
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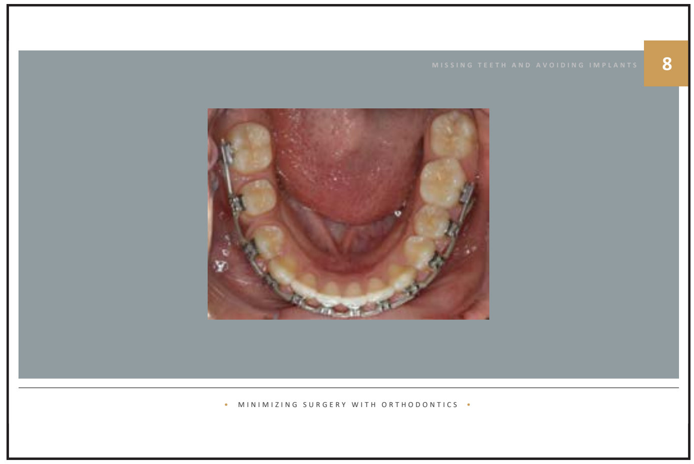
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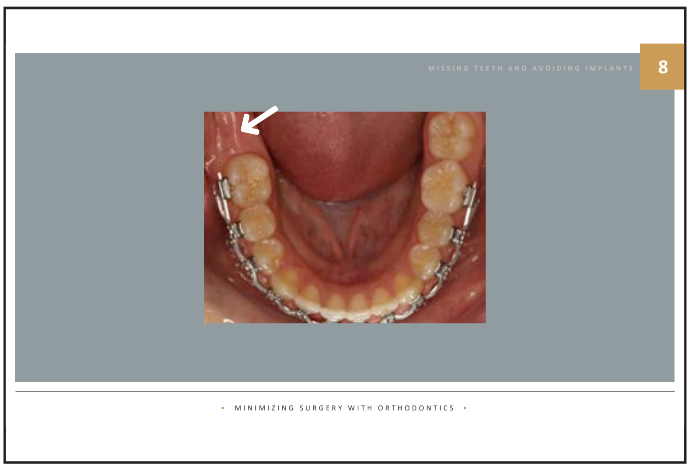
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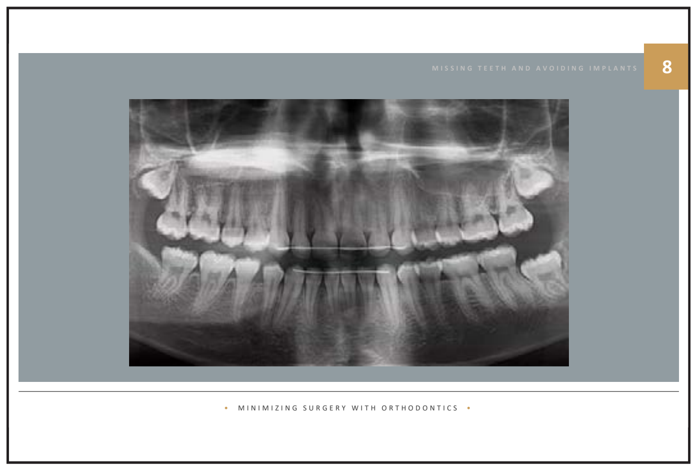
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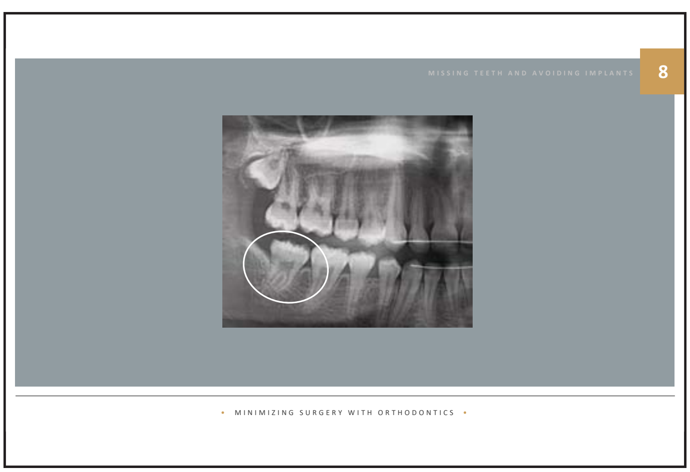
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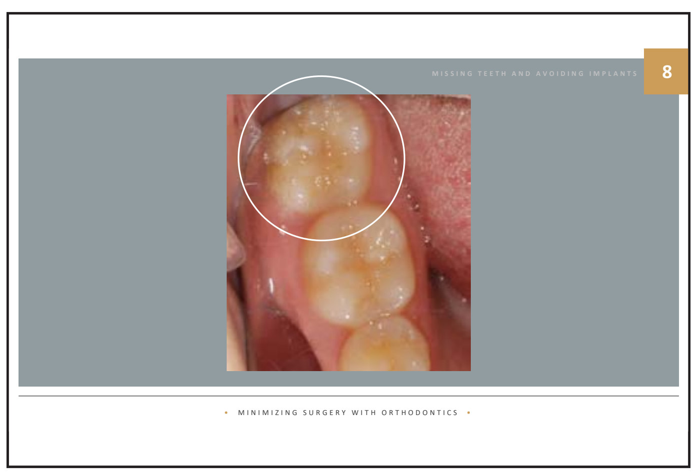
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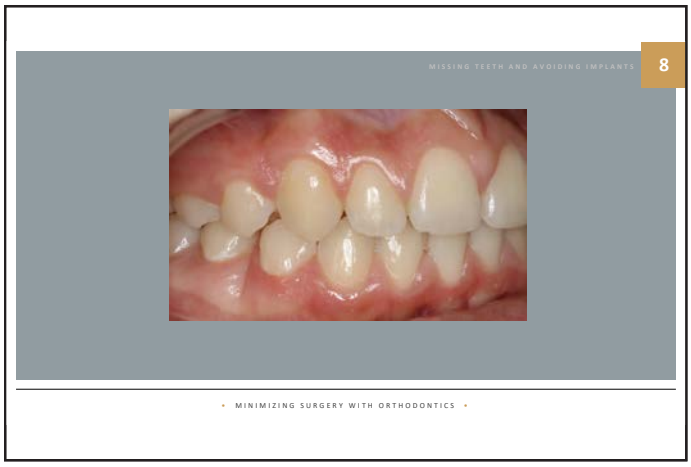
MISSING TEETH AND AVOIDING IMPLANTS
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• MINIMIZING SURGERY WITH ORTHODONTICS •


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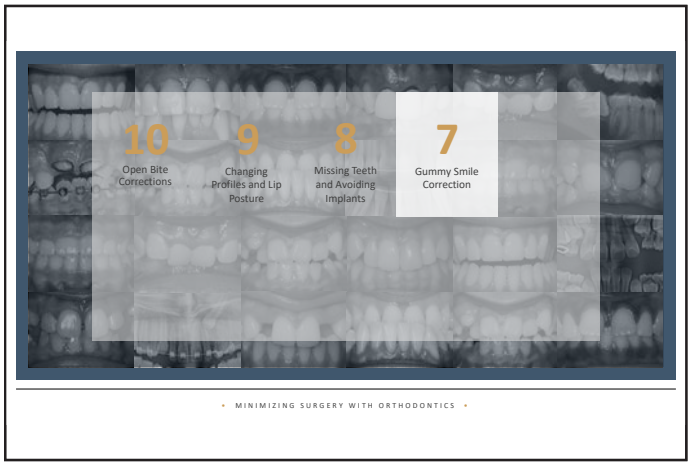
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Open Bite Corrections
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Changing Profiles and Lip Posture
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Missing Teeth and Avoiding Implants
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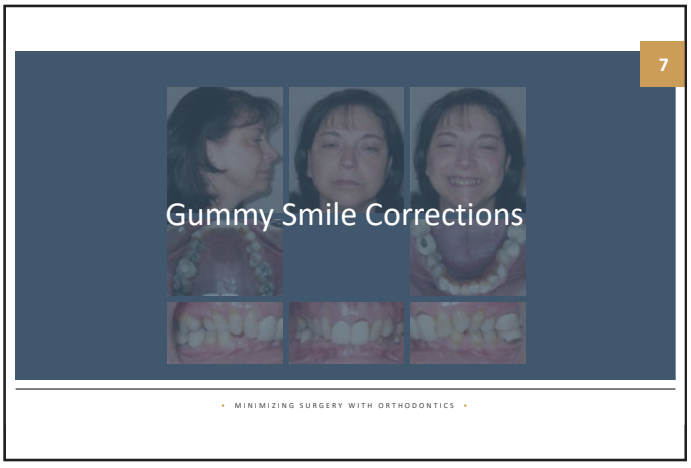
Gummy Smile Correction
• MINIMIZING SURGERY WITH ORTHODONTICS •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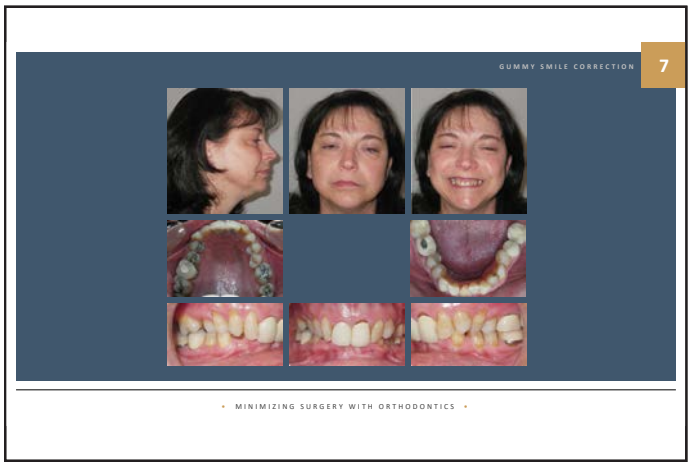
Gummy Smile Corrections
• MINIMIZING SURGERY WITH ORTHODONTICS •


GUMMY SMILE CORRECTION
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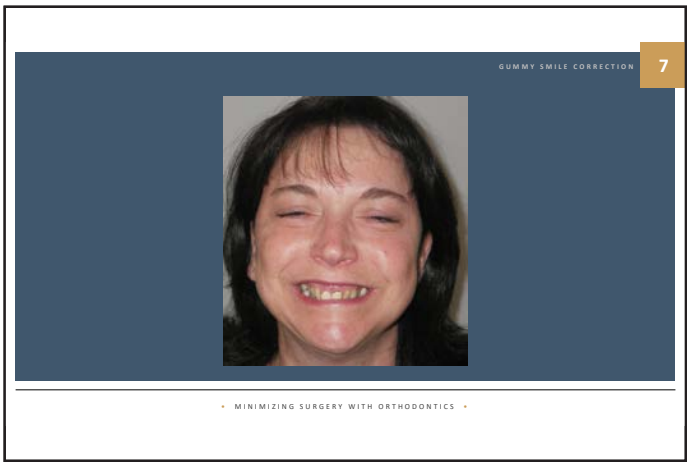
• MINIMIZING SURGERY WITH ORTHODONTICS •


GUMMY SMILE CORRECTION
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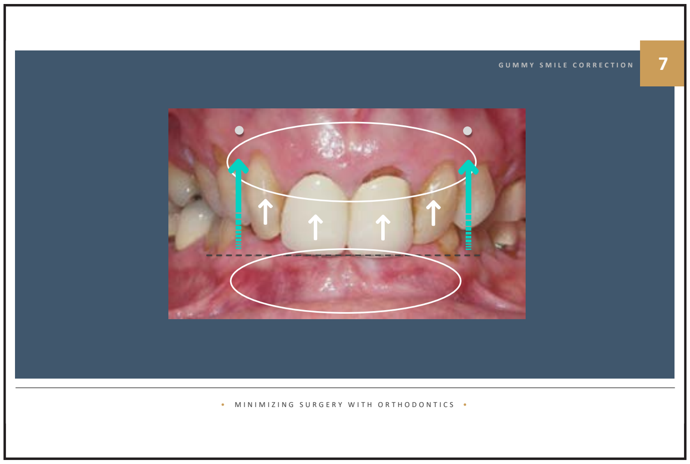
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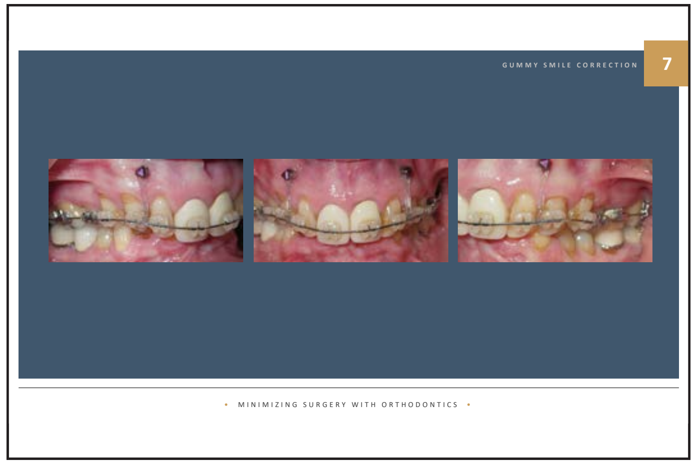
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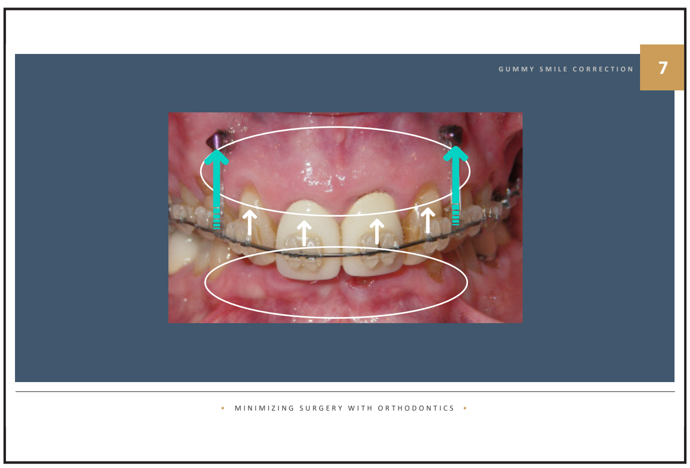
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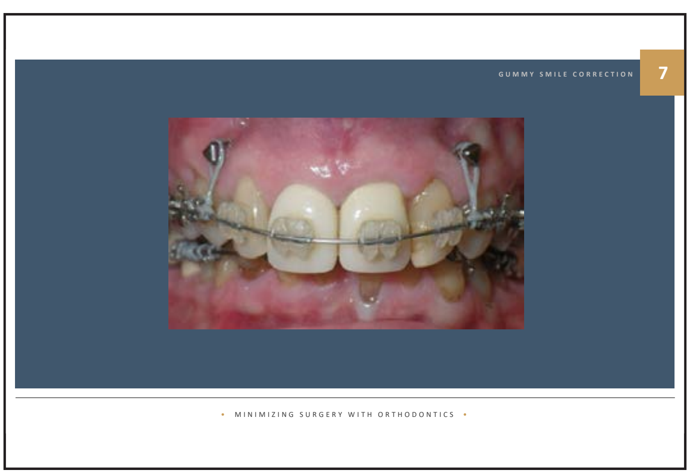
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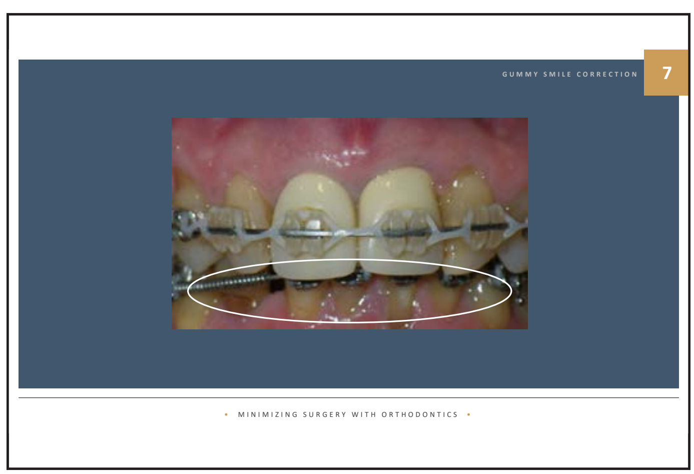
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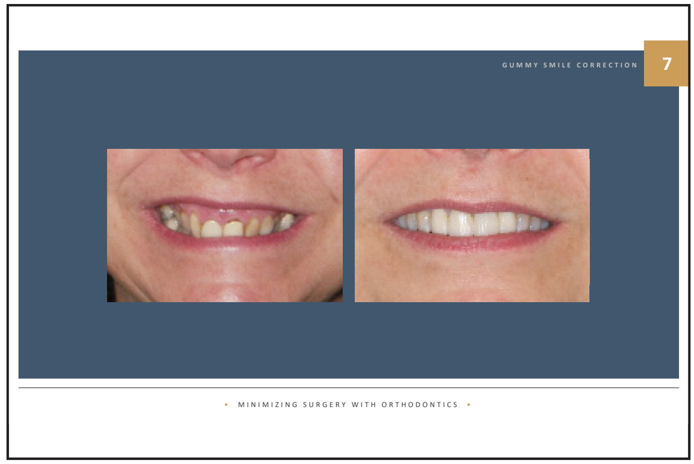
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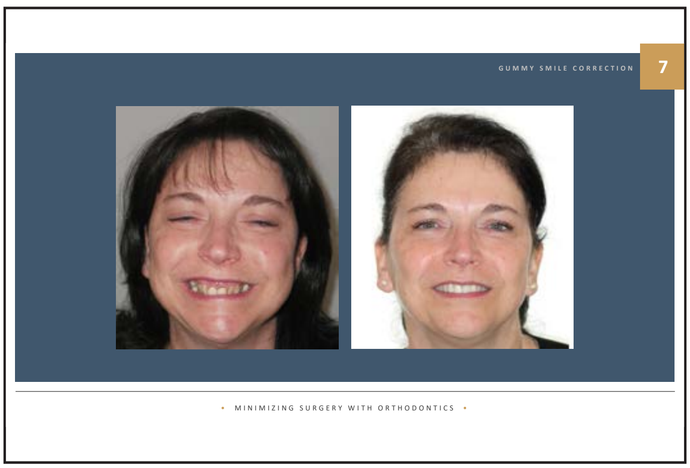
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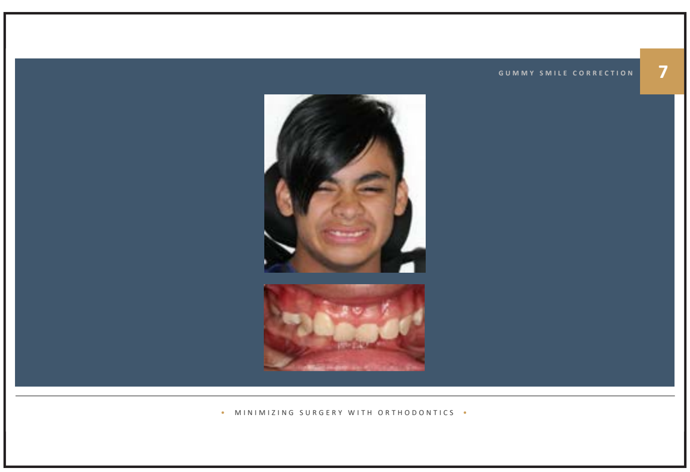
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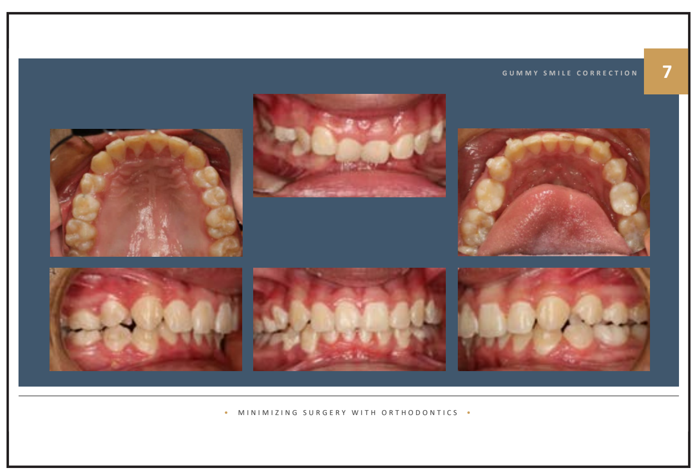
GUMMY SMILE CORRECTION
7
MINIMIZING SURGERY WITH ORTHODONTICS


10
Open Bite Corrections
9
Changing Profiles and Lip Posture
8
Missing Teeth and Avoiding Implants
7
Gummy Smile Correction
6
Forced Eruption to Reduce Grafting
MINIMIZING SURGERY WITH ORTHODONTICS


6
Forced Eruption
MINIMIZING SURGERY WITH ORTHODONTICS


FORCED ERUPTION TO REDUCE GRAFTING
6
MINIMIZING SURGERY WITH ORTHODONTICS


FORCED ERUPTION TO REDUCE GRAFTING
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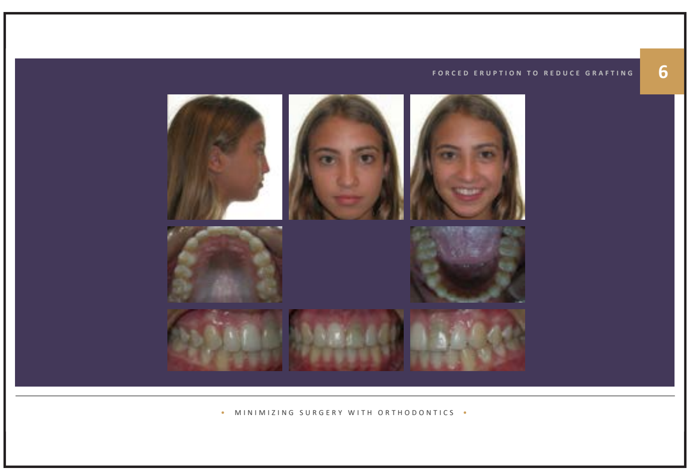
MINIMIZING SURGERY WITH ORTHODONTICS


FORCED ERUPTION TO REDUCE GRAFTING
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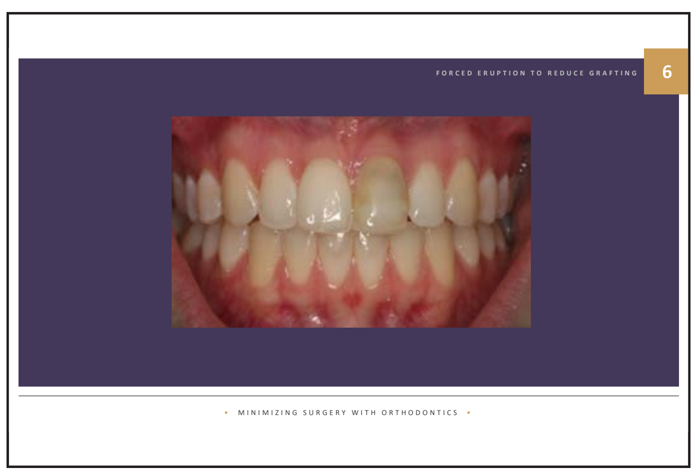
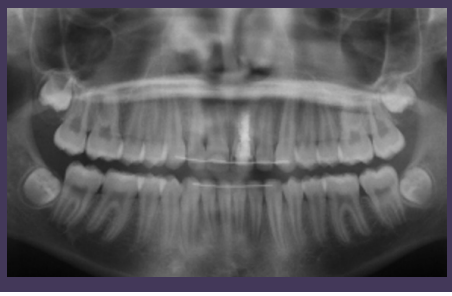
MINIMIZING SURGERY WITH ORTHODONTICS

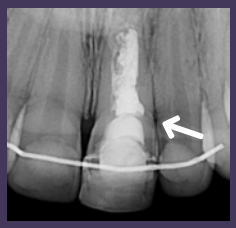

FORCED ERUPTION TO REDUCE GRAFTING
6
MINIMIZING SURGERY WITH ORTHODONTICS

FORCED ERUPTION TO REDUCE GRAFTING 6



• MINIMIZING SURGERY WITH ORTHODONTICS •

FORCED ERUPTION TO REDUCE GRAFTING 6



• MINIMIZING SURGERY WITH ORTHODONTICS •

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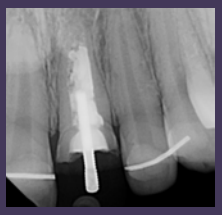
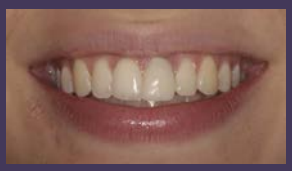


Temporary Post

• MINIMIZING SURGERY WITH ORTHODONTICS •

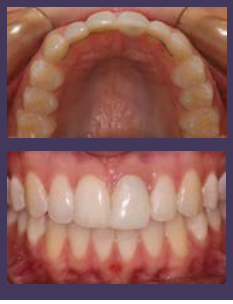
FORCED ERUPTION TO REDUCE GRAFTING 6



Temporary Crown

• MINIMIZING SURGERY WITH ORTHODONTICS •

FORCED ERUPTION TO REDUCE GRAFTING 6



• MINIMIZING SURGERY WITH ORTHODONTICS •

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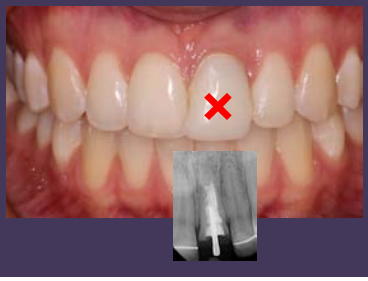
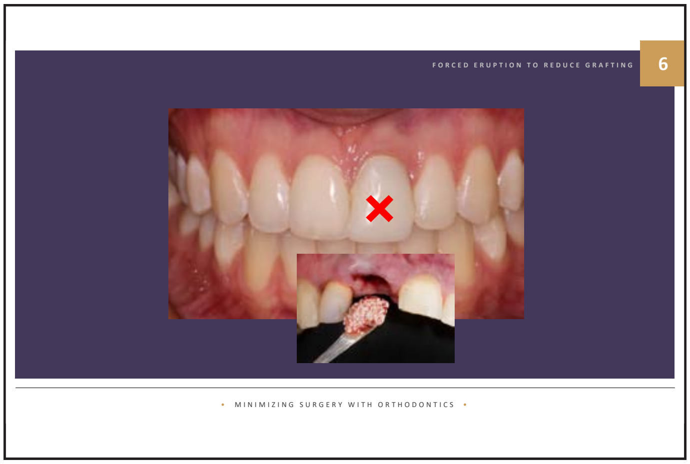


• MINIMIZING SURGERY WITH ORTHODONTICS •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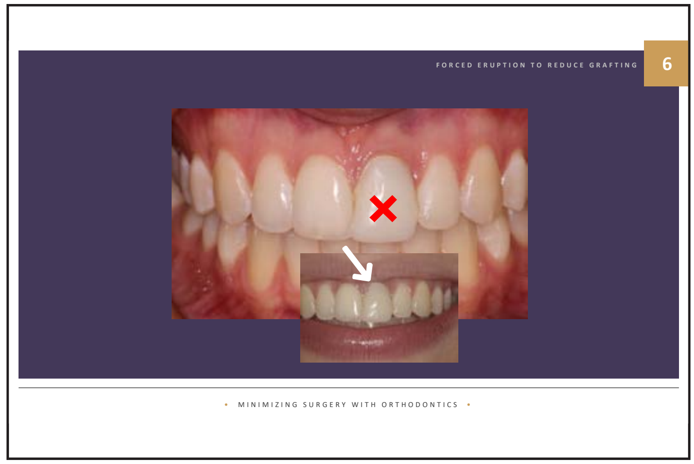
MINIMIZING SURGERY WITH ORTHODONTICS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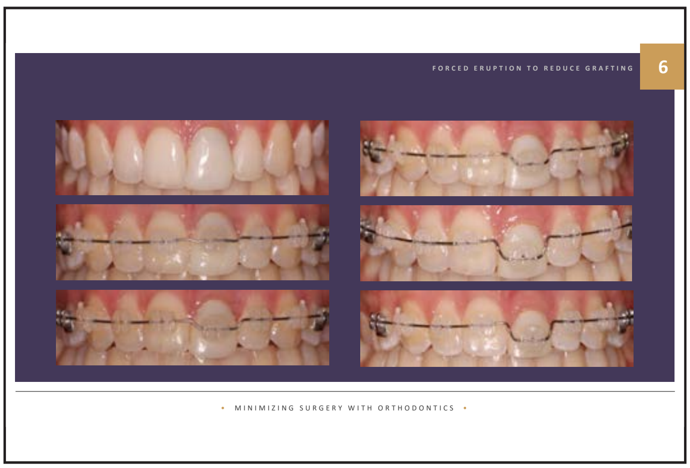
MINIMIZING SURGERY WITH ORTHODONTICS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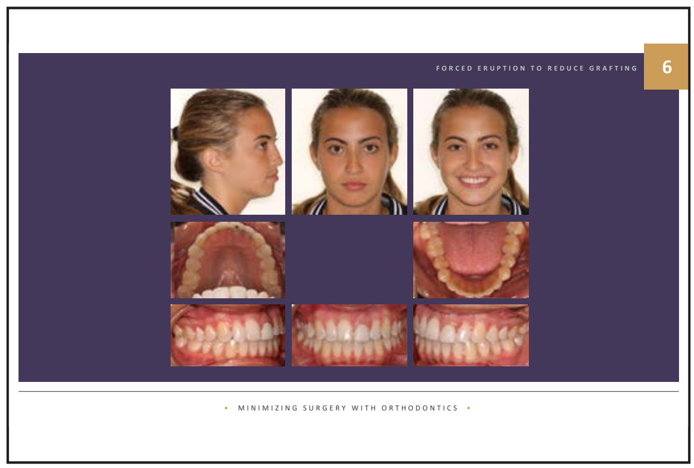
MINIMIZING SURGERY WITH ORTHODONTICS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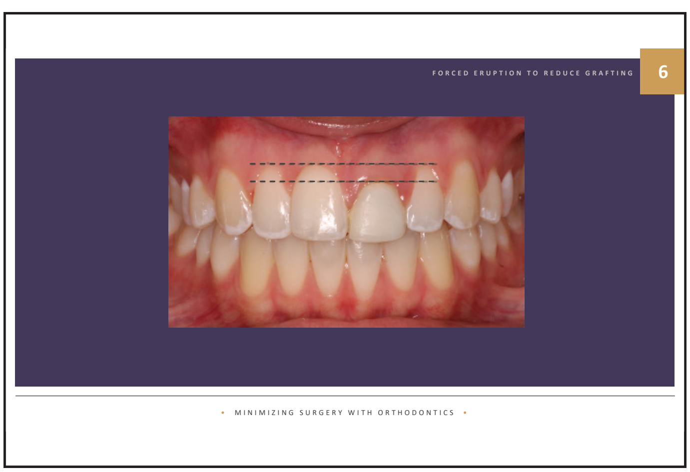
MINIMIZING SURGERY WITH ORTHODONTICS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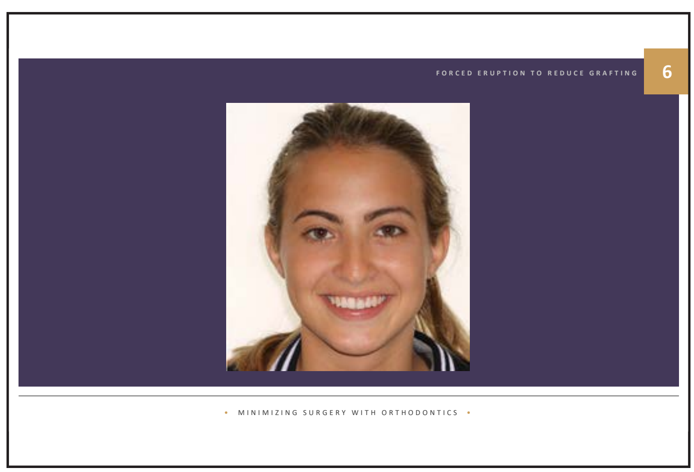
MINIMIZING SURGERY WITH ORTHODONTICS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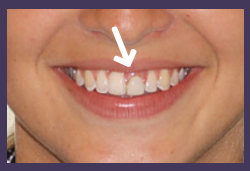
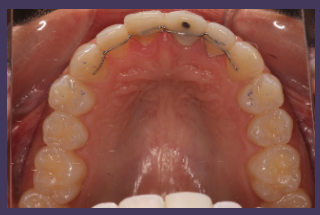
MINIMIZING SURGERY WITH ORTHODONTICS

FORCED ERUPTION TO REDUCE GRAFTING 6



• MINIMIZING SURGERY WITH ORTHODONTICS •

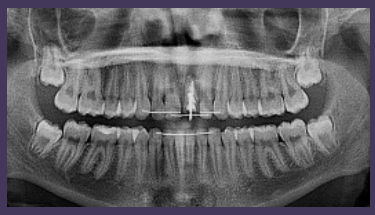
FORCED ERUPTION TO REDUCE GRAFTING 6



Splinted with Bonded Lingual for three months

• MINIMIZING SURGERY WITH ORTHODONTICS •

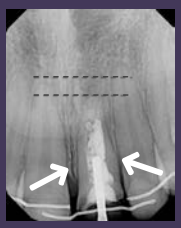
FORCED ERUPTION TO REDUCE GRAFTING 6



Splinted with Bonded Lingual for 3 months

• MINIMIZING SURGERY WITH ORTHODONTICS •

FORCED ERUPTION TO REDUCE GRAFTING 6

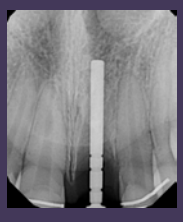


• MINIMIZING SURGERY WITH ORTHODONTICS •

FORCED ERUPTION TO REDUCE GRAFTING 6

• MINIMIZING SURGERY WITH ORTHODONTICS •

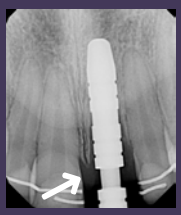
FORCED ERUPTION TO REDUCE GRAFTING 6



Guide Pin

• MINIMIZING SURGERY WITH ORTHODONTICS •

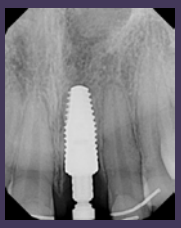
FORCED ERUPTION TO REDUCE GRAFTING 6



Directional Indicator Post

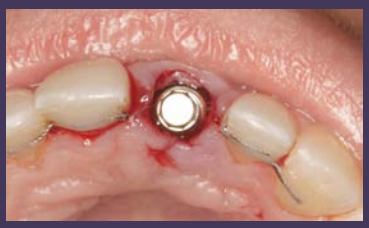
• MINIMIZING SURGERY WITH ORTHODONTICS •

FORCED ERUPTION TO REDUCE GRAFTING 6



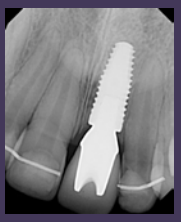
• MINIMIZING SURGERY WITH ORTHODONTICS •

FORCED ERUPTION TO REDUCE GRAFTING 6



• MINIMIZING SURGERY WITH ORTHODONTICS •

FORCED ERUPTION TO REDUCE GRAFTING 6



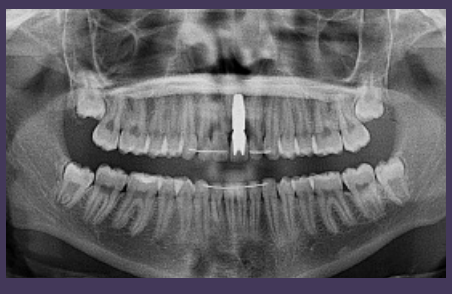
Final Crown

• MINIMIZING SURGERY WITH ORTHODONTICS •

FORCED ERUPTION TO REDUCE GRAFTING 6

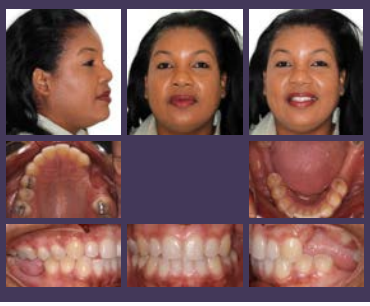
• MINIMIZING SURGERY WITH ORTHODONTICS •

FORCED ERUPTION TO REDUCE GRAFTING 6



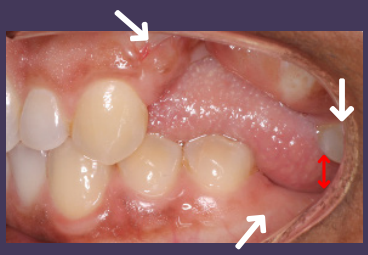
• MINIMIZING SURGERY WITH ORTHODONTICS •

FORCED ERUPTION TO REDUCE GRAFTING 6



MINIMIZING SURGERY WITH ORTHODONTICS

FORCED ERUPTION TO REDUCE GRAFTING 6



MINIMIZING SURGERY WITH ORTHODONTICS

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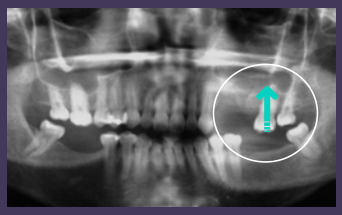
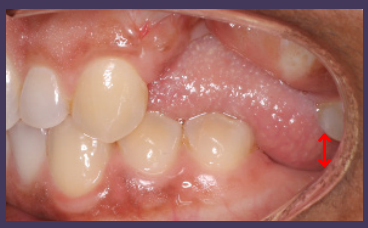


Options: Extract or RCT?

MINIMIZING SURGERY WITH ORTHODONTICS

FORCED ERUPTION TO REDUCE GRAFTING 6



MINIMIZING SURGERY WITH ORTHODONTICS

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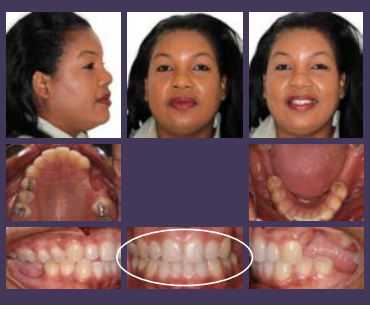
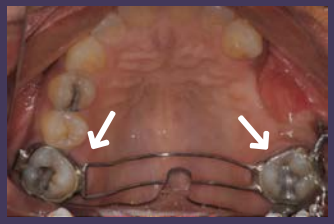


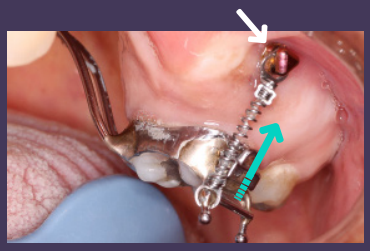
MINIMIZING SURGERY WITH ORTHODONTICS

FORCED ERUPTION TO REDUCE GRAFTING 6



MINIMIZING SURGERY WITH ORTHODONTICS

FORCED ERUPTION TO REDUCE GRAFTING 6



• MINIMIZING SURGERY WITH ORTHODONTICS •

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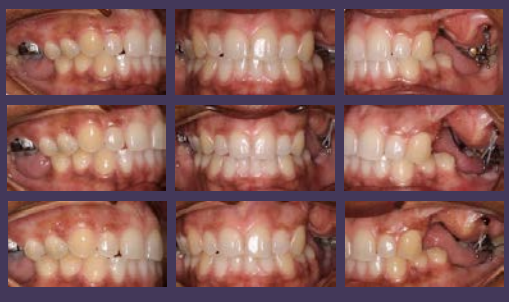

• MINIMIZING SURGERY WITH ORTHODONTICS •

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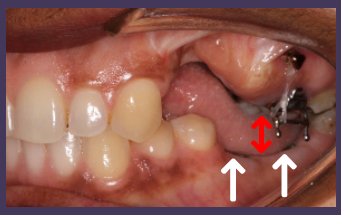
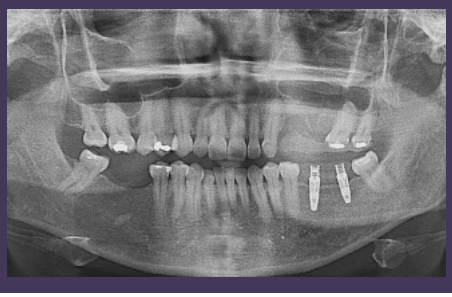


Six Month of TAD Intrusion “No Braces”

• MINIMIZING SURGERY WITH ORTHODONTICS •

FORCED ERUPTION TO REDUCE GRAFTING 6



• MINIMIZING SURGERY WITH ORTHODONTICS •

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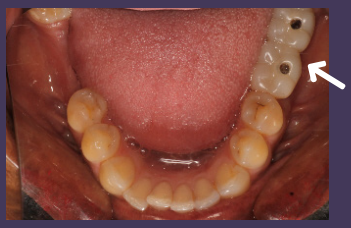

• MINIMIZING SURGERY WITH ORTHODONTICS •

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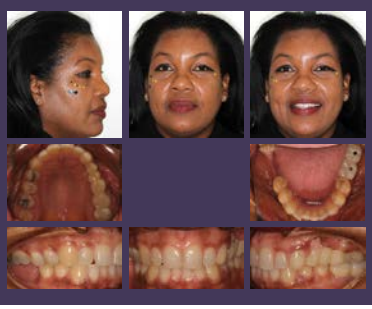


• MINIMIZING SURGERY WITH ORTHODONTICS •

SELF EVALUATION

Minimizing Surgery with Orthodontics – Part 1

True/False

1. Orthognathic surgery should be reserved for severe cases that require both dental and facial improvements.

2. There are several ways to close down an anterior open bite without surgery. They include extraction treatment, TAD's and Invisalign.

3. Invisalign generally does not work well with special needs patients. Braces are usually a better choice.

4. Extraction treatment does very little to change patient profiles.

5. If a patient is missing second bicuspids, we should always maintain the space and plan on placing implants when growth is complete.

6. A Gummy Smile can sometimes be corrected by intruding the upper anterior teeth with tads.

7. Single tooth forced eruption can be used effectively to minimize grafting prior to extraction treatment and implant placement

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

Steven M. Katz, DMD, MAGD

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

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

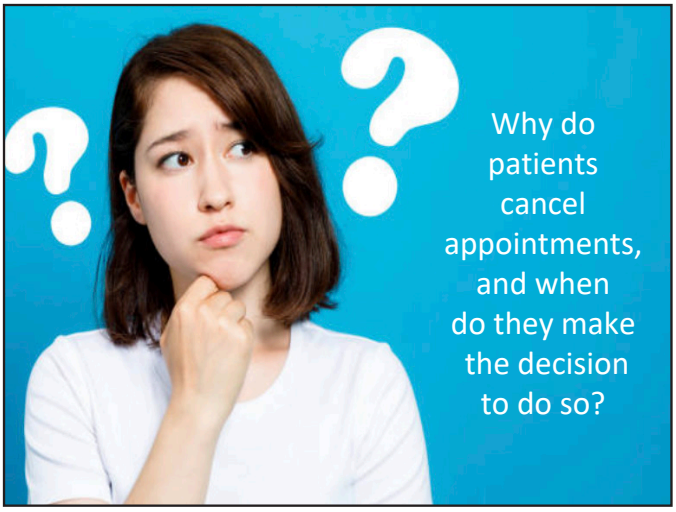
Smile Potential Practice Growth Coaching
Steven M. Katz, DMD, MAGD, FICD
https://smilepotential.com
coaching@smilepotential.com
516-599-0214

Hygiene Profitability and Practice Success

Hygienists Are Multi-Taskers

Educator
Liaison
Translator
Motivator
Salesperson
Confidant
Cheerleader
Complaint dept.

Greeter
Listener
Friend
Information gatherer
Information distributor
Diagnostician
Teeth cleaner
Periodontal therapist



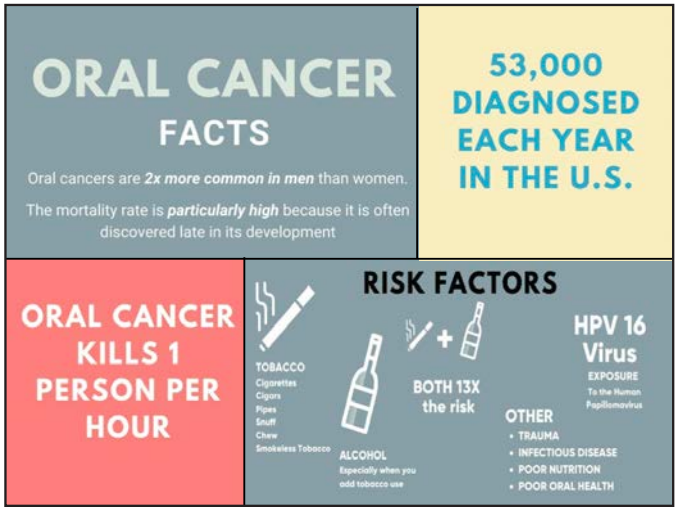
Create Value

What is Your Most Important Role?

3

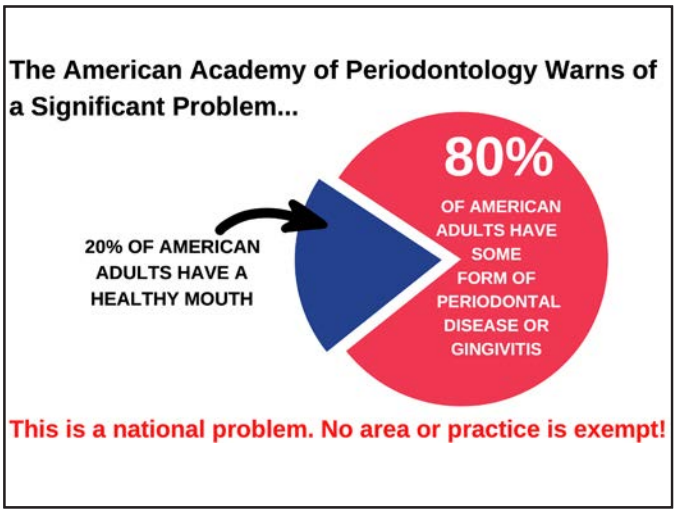
Are Your Patients Loyal Visitors to Your Prophy Palace?

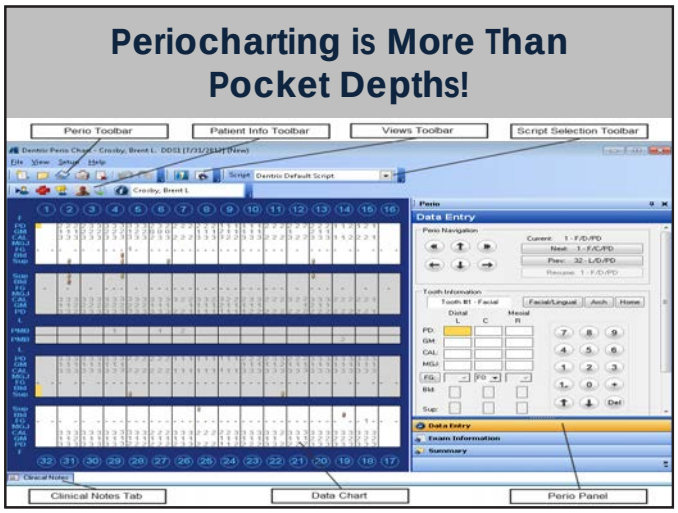
5

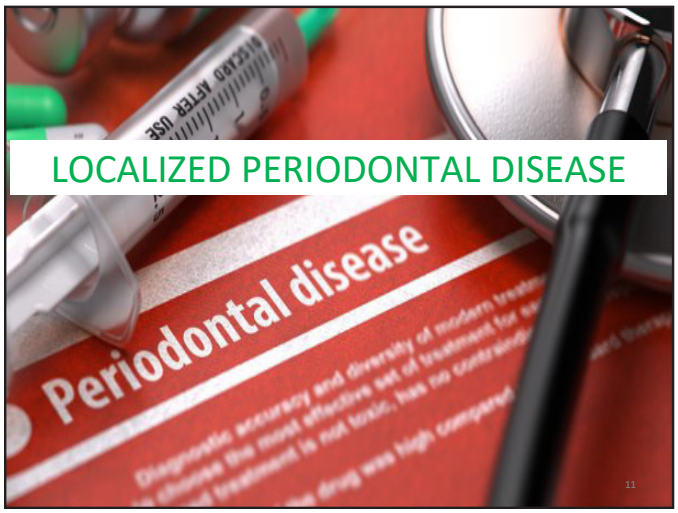


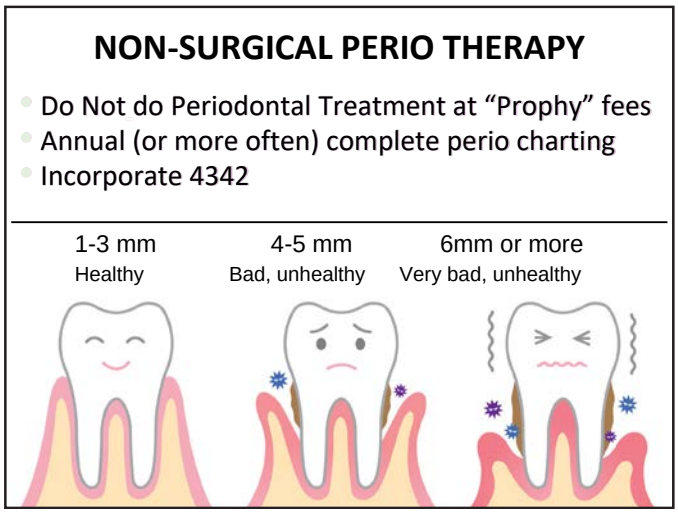

MORE THAN
90% OF ALL
SYSTEMIC DISEASES
have ORAL manifestations


Take patients' Blood Pressures…
Routinely
Screen for Diabetes

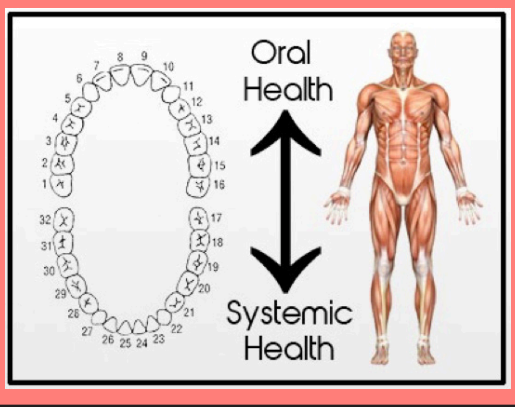

The American Academy of Periodontology Warns of a Significant Problem...
20% OF AMERICAN ADULTS HAVE A HEALTHY MOUTH
80%
OF AMERICAN ADULTS HAVE SOME FORM OF PERIODONTAL DISEASE OR GINGIVITIS
This is a national problem. No area or practice is exempt!

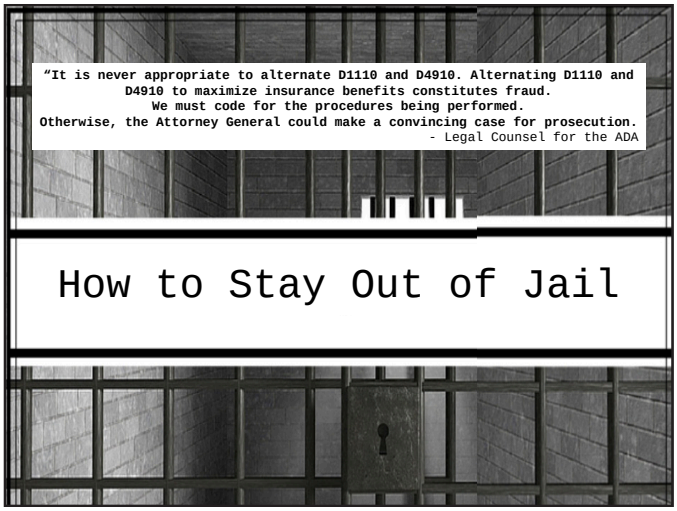

Periocharting is More Than Pocket Depths!
Perio Toolbar
Patient Info Toolbar
Views Toolbar
Script Selection Toolbar
Clinical Notes Tab
Data Chart
Perio Panel


LOCALIZED PERIODONTAL DISEASE
Periodontal disease


NON-SURGICAL PERIO THERAPY
Do Not do Periodontal Treatment at "Prophy" fees
Annual (or more often) complete perio charting
Incorporate 4342
1-3 mm
Healthy
4-5 mm
Bad, unhealthy
6mm or more
Very bad, unhealthy

"We now know !"



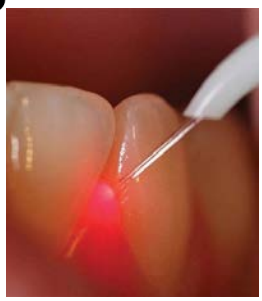


You should go…**"No Longer Than"**
for your next hygiene visit.

Note: "NLT"

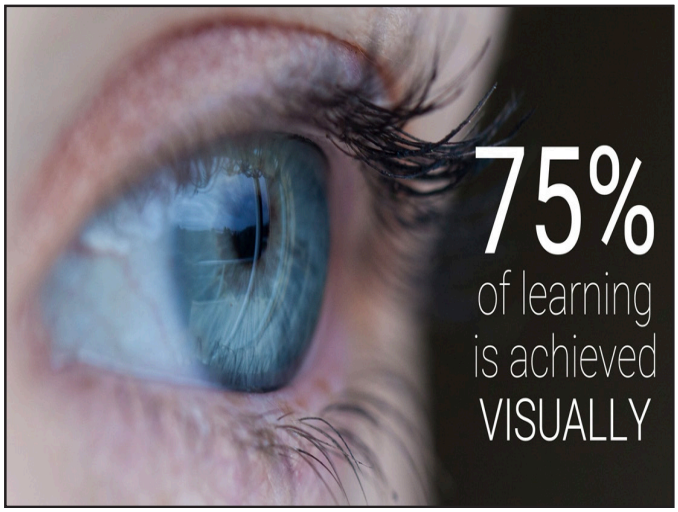
BEST CARE
EVERY PATIENT EVERY TIME

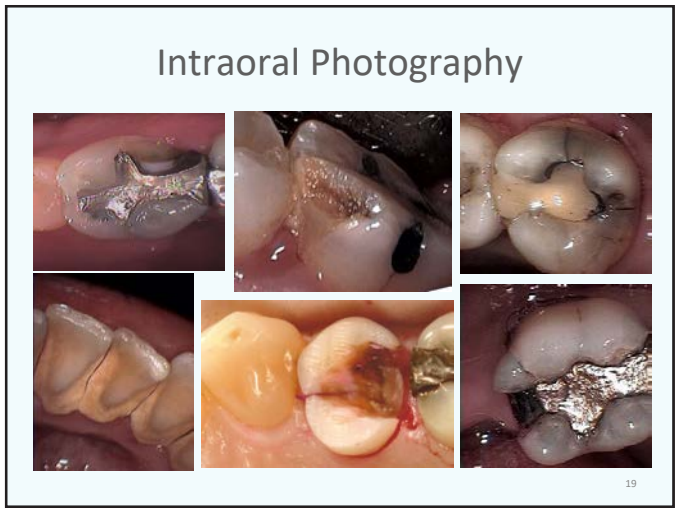
Irrigation



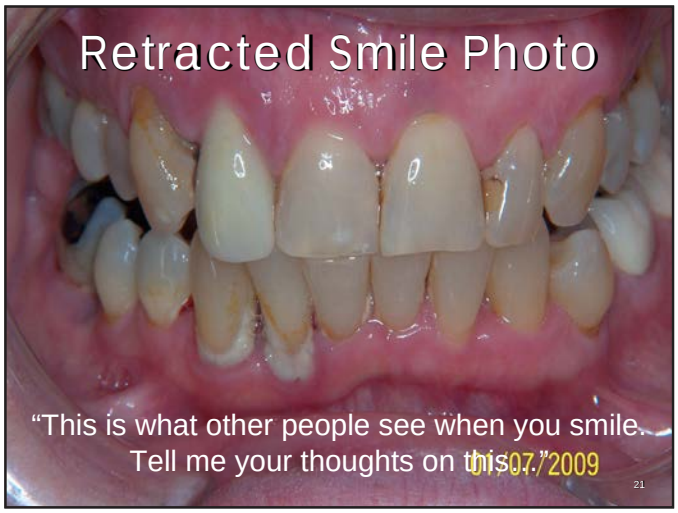
Laser

BENEFIT SCRIPTING



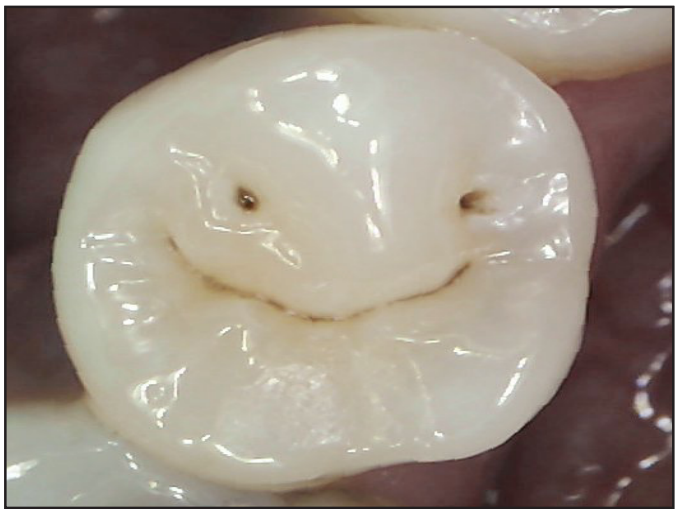

Intraoral Photography
19


Standardization of Care…
Complete Clarity
Diagnostic Criteria Photos

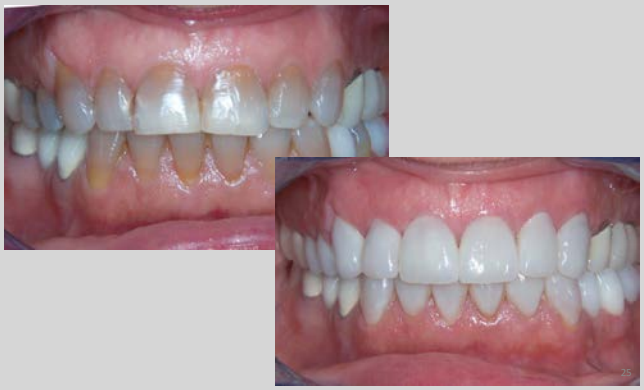

Retracted Smile Photo
"This is what other people see when you smile.
Tell me your thoughts on this."
01.07.2009
21

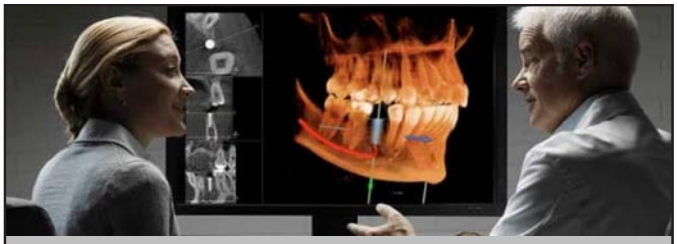

Occlusal Mirror View
22


A Hygiene Masterpiece

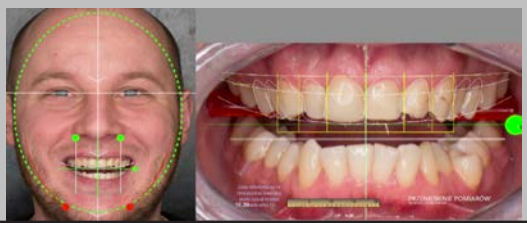


Before / After Photos





Create a "wow" with scanning & 3D Technology



WATCHING

DON'T BE A
DENTAL MONITOR

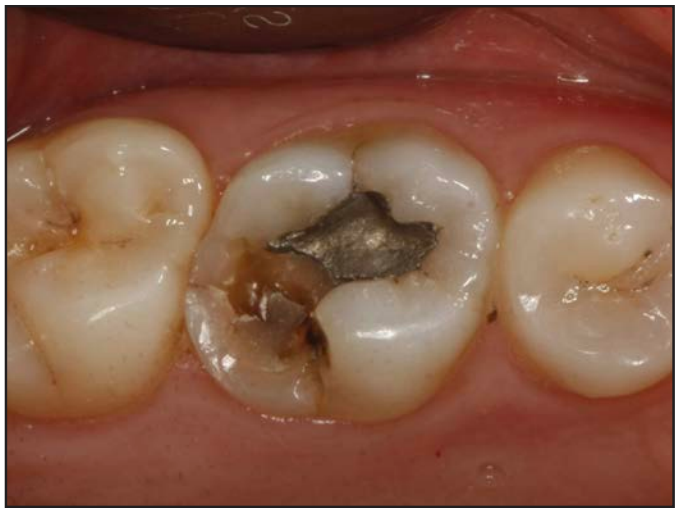
Don't sell yourself short_

CENSORED

~~"little"~~ ~~"small"~~
~~"slight"~~ ~~"minor"~~
~~"just a cleaning"~~
~~"we have a problem"~~

AVOID MINIMIZING TERMS

Are you using benefit oriented scripting ?



ZOOM Review of
Diagnostic Criteria Photos

To schedule your meeting:
Send text to 516-524-7573
Include your name, address
& the name of your practice.

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

Use QR code…

or send email to:
coaching@smilepotential.com

Include name and phone number.

SELF EVALUATION

Hygiene Profitability and Practice Success

1. When do patients make the decision that they can cancel an appointment?

- **a.** The morning of the appointment when you see it's a beach day
- **b.** When their hairdresser has an available appointment at the same time
- **c.** At the time of the previous appointment when value was not created
- **d.** On the spare of the moment for no good reason

2. Which of the following are ways a dental office can make a difference in someone's life?

- **a.** Doing a thorough oral cancer screening
- **b.** Taking routine blood pressures
- **c.** Screening for diabetes
- **d.** All of the above

3. In comprehensive periodontal charting one should measure and record: Which of the following are ways a dental office can make a difference in someone's life?

- **a.** Periodontal pockets
- **b.** Bleeding and suppuration points
- **c.** Areas of recession and furcations
- **d.** All of the above

4. T/F - It is appropriate to alternate the D1110 and D4910 codes in order to maximize insurance benefits.

5. When localized periodontal pockets are detected, the course of treatment should include:

- **a.** Doing a prophy and having the patient return for scaling
- **b.** Telling the patient everything is fine and just doing a prophy
- **c.** Performing localized scaling and then doing the prophy during the same appointment
- **d.** Beginning four quadrants of scaling and root planing.

6. An intraoral camera should be used:

- **a.** Only if the patient does not understand what they are being told
- **b.** On every recall patient
- **c.** Once in a while, when time allows
- **d.** Only if there are some obvious restorative needs

7. The three components of the triple hear message are:

- **a.** Tooth number, surfaces and material
- **b.** Depth of decay, position of decay, type of restoration
- **c.** Decay or fracture, time required to treat, prognosis
- **d.** Problem, Consequence, Benefits

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

Robert D. Kelsch, DMD

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

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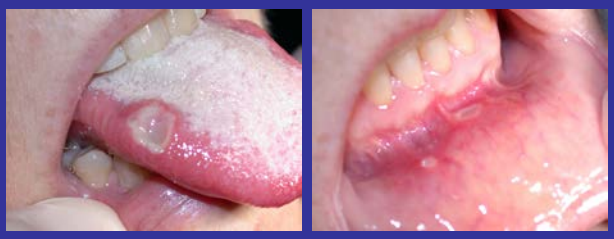
Associate Professor, Donald and Barbara Zucker School of Medicine at Hofstra Northwell
Director, Clinical Oral Pathology

Diagnosing and Treating Oral Mucosal Diseases

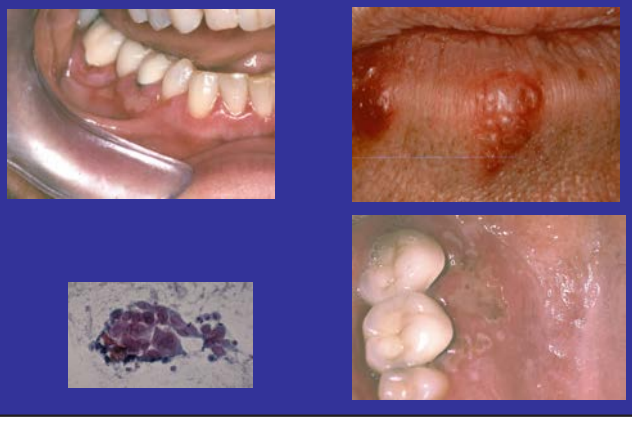
ORAL ULCERATIVE CONDITIONS

- APHTHOUS ULCERATIONS
- TRAUMATIC ULCERS/FACTITIAL
- HERPES SIMPLEX VIRUS INFECTIONS
- LICHEN PLANUS
- VESICULOBULLOUS DISEASE
  - PEMPHIGUS VULGARIS
  - PEMPHIGOID
  - ERYTHEMA MULTIFORME

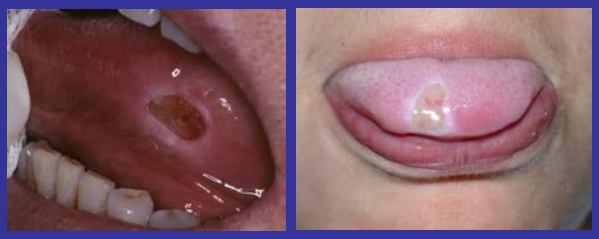
APHTHOUS ULCERATIONS



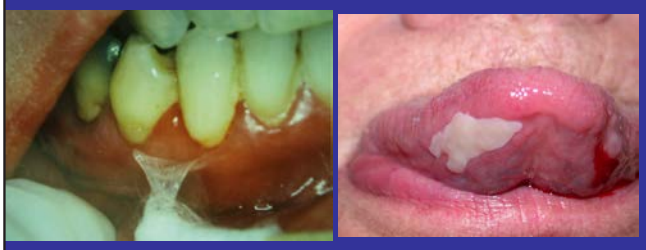
HERPES SIMPLEX

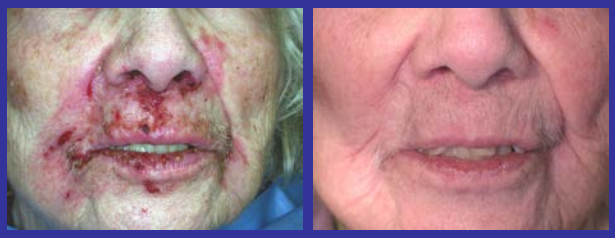


TRAUMATIC ULCER

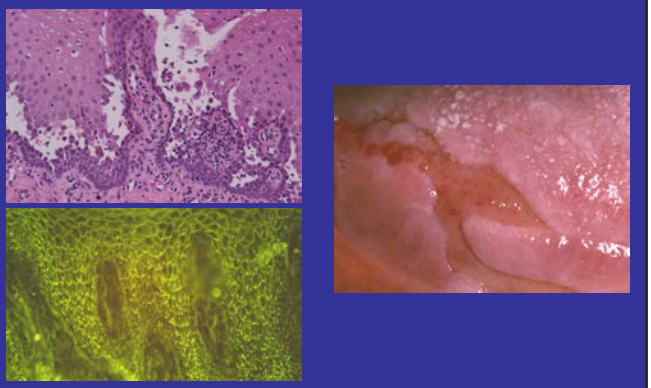


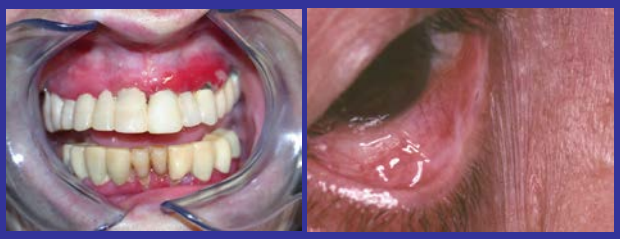
PEMPHIGUS VULGARIS



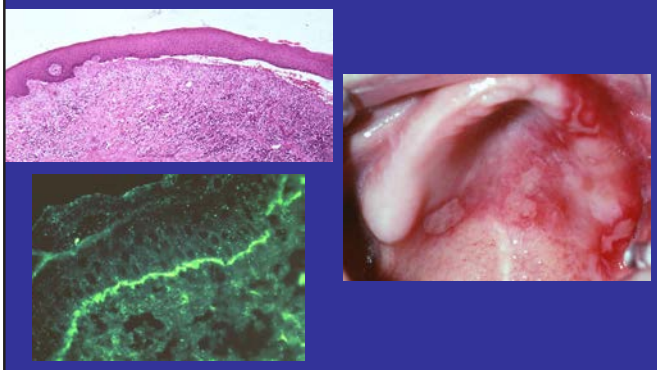


PEMPHIGUS VULGARIS



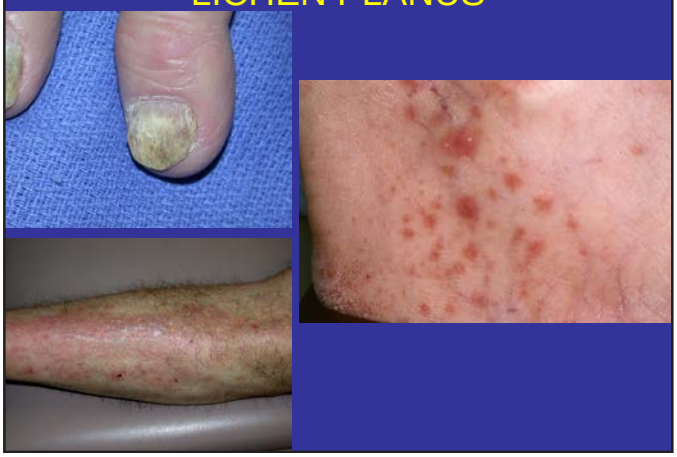


PEMPHIGOID



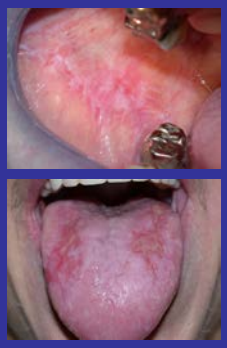
LICHEN PLANUS

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



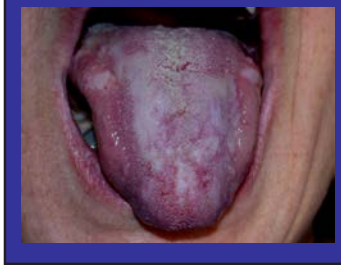
LICHEN PLANUS

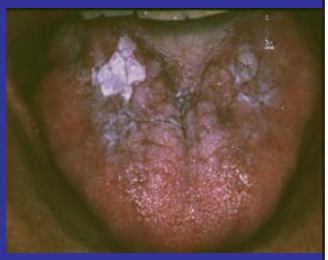
- RETICULAR
- EROSIVE



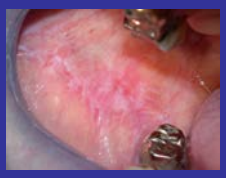
LICHEN PLANUS

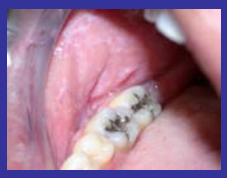
- PLAQUE LIKE

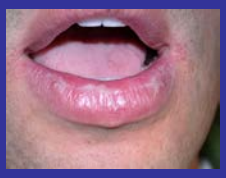


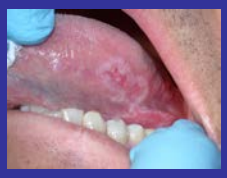


LICHEN PLANUS

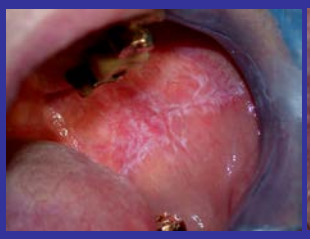


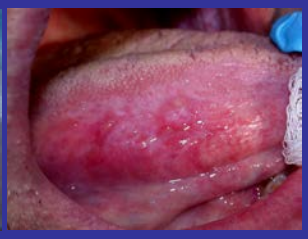






LICHEN PLANUS





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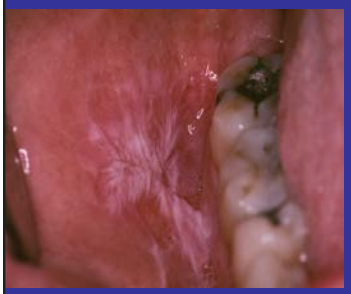
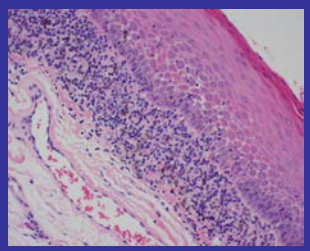


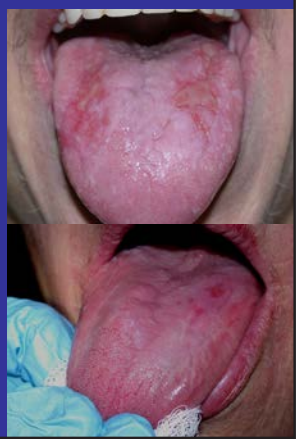


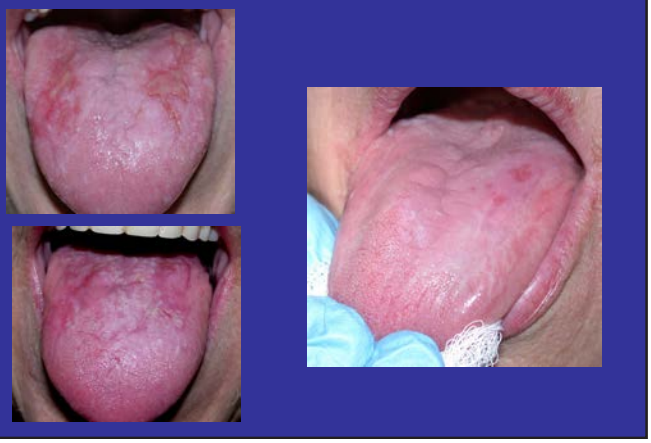
LICHEN PLANUS

- ASSOCIATIONS
  - LICHENOID REACTIONS TO AMALGAM
  - HEPATITIS B/C

LICHEN PLANUS

- TREATMENT
  - TOPICAL
    - STEROIDS
    - NON-STEROID
      - TACROLIMUS
  - SYSTEMIC
    - STEROIDS
    - HYDROXYCHLOROQUINE





LICHEN PLANUS

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

SELF EVALUATION

Diagnosing and Treating Oral Mucosal Diseases

1. T/F - Oral aphthous ulcerations are due to a microbial infection.

2. T/F - Systemic diseases such as Celiac disease or Crohn's disease may present with aphthous like ulcers.

3. T/F - Pemphigus and pemphigoid are considered autoimmune blistering diseases.

4. T/F - Blistering of the oral mucosa is always identified readily in intraoral herpetic infections.

5. Which of the following may present as a desquamative gingivitis?

a. Lichen planus
b. Pemphigoid
c. Pemphigus vulgaris
d. All of the above

Answer Key: 1. F, 2. T, 3. T, 4. F, 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 doctor focused 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 his latest, *Wealth Strategies for Today's Physician: A Multi-Media Playbook*. 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.

You may contact Mr. Mandell with any questions or comments at (877) 656–4362 or by email at mandell@ojmgroup.com.

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Increasing Practice Financial Efficiency & Reducing Doctor Stress

David B. Mandell, JD, MBA

Today's Hot Topics in Financial Efficiency

1. Why reducing financial stress matters
2. Avoiding liability in a practice's qualified retirement plan
3. Finding a practice and personal financial advisor you can trust
4. Success factors in M&A for medical and dental practices

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WHY REDUCING FINANCIAL STRESS MATTERS

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Doctors Under Financial Stress*

1. 87 percent of respondents said they are moderately-to-severely stressed/burned out on an average day.
2. 63 percent said they were more stressed or burned out than they were three years ago.
3. The top three things that they felt would help them reduce stress:
   a. Better work hours and/or less call (32.5 percent)
   b. More or better work/life balance (30.7 percent)
   c. **Improved finances, compensation, reimbursement (29 percent)**

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

AVOIDING LIABILITY IN YOUR QUALIFIED PLAN

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Are You Overpaying and Exposed?

- Parties involved in QRP administration
  - Recordkeeper
  - Third Party Administrator
  - Investment advisor
- "Bundled" services often lead to conflicts, kick-backs, expensive fund lineups
- Many small practice plans have not been reviewed
- As plan sponsor/trustee, you have fiduciary liability to employees
  - You can be sued for underperformance; high expense funds
    - U. of Chicago, MIT
    - MassMutual, Ameriprise, Nationwide settlements.
  - **Solution: have your plan audited independently with benchmarks**

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Case Study: Plastic Surgeon Overpaying and Exposed

- Employees: 1 physician, 4 employees, including spouse
- Fees: 1.50% Investment Advisory
  - 2.41% across mutual fund expenses, TPA/Recordkeeping, and Investment Advisory
- This was a pooled investment account, meaning all participant investments are managed in the same manner. This can cause liability for the plan since not all participants will be comfortable taking the same level of risk.

Solution

- Plan design changed to allow each participant to direct his/her individual investments, including target-date retirement options.
- Per industry benchmarking, the advisory fee was dropped to 0.60% for the plan. Total fees dropped from 2.41% to 1.63%, which saved the plan $4,000 annually.

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FINDING A PRACTICE AND PERSONAL FINANCIAL ADVISOR YOU CAN TRUST

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Are Financial Advisors "Worth It"?

- Not for everyone
  - Fee drag is real
  - Some have the passion, time, dedication to DIY
- But.... studies show those with advisors benefit over time
  - **Vanguard's study *Quantifying Vanguard Advisor's Alpha*** looked at many factors: Behavioral coaching, appropriate asset allocation/diversification, cost effective implementation, rebalancing, asset location/utilizing accounts efficiently, spending strategy and withdrawal order
  - Additional alpha varied widely through the population, but Vanguard estimated advisors can **potentially add 3 percent in net returns—calculated retroactively on an annual basis.**
  - **Morningstar's study *Alpha, Beta and Now…Gamma*** focused on investing for retirement. Many of same factors: customized withdrawal plans during retirement; tax efficiency; total wealth asset allocation; guaranteed income efficiency and asset allocation predicated on future spending needs.
  - Concluded that retiree could expect "**an annual return increase of plus 1.59 percent"**
- For physicians and dentists, opportunity cost and "highest and best use"

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When is a Good Time? Where to Find?

When? Anytime, but also…

- Practice: QRP review, interest in Non-Qualified plans, change in staff or partners
- Starting out/ Have funds to invest
- Key transition (new job, kids, move)
- Retirement "red zone"
- Other?

Where?

- Referrals from colleagues
- Research
- Specialization, expertise/publication
- Other?

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What Can Advisor Help With Beyond Investments?

- **Practice issues**
  - QRP and Non-qualified plan design, execution
  - Tax reduction
  - Asset protection
  - Contacts on most other areas – billing/coding, financial management, healthcare law, tax preparation, M&A, etc.
- **Personal planning**
  - Debt repayment/budgeting
  - Tax reduction
  - Asset protection
  - Insurances
  - College education funding
  - Retirement planning
  - Charitable/estate planning

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Why Is It Difficult to Determine If Your Advisor Is Working for You?

- "Financial Advisor" meaningless
  - Role of the financial professional is difficult to determine. Impossible to distinguish based on title
- Lack of transparency in the financial industry
- Difficult to determine what you are paying for advice and how you are charged
- Advisor's employing firm could be creating products under a different brand

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Types of Advisors

- Brokers and Banks
- Insurance Agents
- Fee-Only Financial Advisors
- Automated Investment Management (Robo-Advisors)
- Registered Investment Advisors (RIAs)
- Strategy/Sleeve Advisors such as Private Equity, Hedge Funds

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6 Questions to Ask Your Advisor/Prospective Advisor

1. Do you owe me a fiduciary duty as a client, or are you held only to a "suitability" standard?
2. Can you provide a detailed explanation of all the ways in which you are compensated?
3. Does your firm make money in other ways on my individual investments?
4. Do you use an outside custodian?
5. Do you utilize proprietary securities?
6. Does your firm engage in investment banking activities?

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Trust Is #1

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5 SUCCESS FACTORS IN PRACTICE M&A

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#1: PREPARING THE PRACTICE FINANCIALLY
MAXIMIZING VALUE

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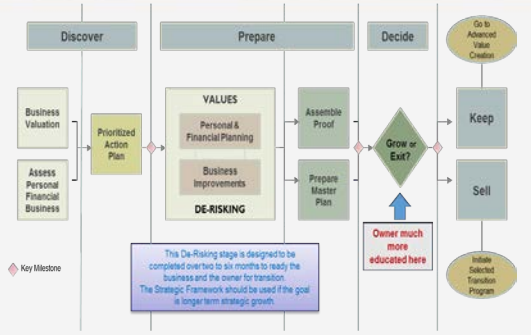
Value Acceleration Process



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Key Determinants of Value: Medical Practice

- Retention of key physicians and staff after transaction close
- A significant dollar amount of Adjusted EBITDA
  - Adjusted EBITDA = Practice Earnings Before Interest Expenses, Income Taxes, Depreciation and Amortization Expense + adding back non-recurring expenses + owner-related expenses + excess owner compensation
- Diversified sources of revenue (Medical & Ancillaries)
- Adjusted EBITDA margins that are consistently greater than 20%
- Highlighted growth opportunities (organic and add-on)

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#2: DETERMINING THE RIGHT TRANSACTION FOR YOU

ONE SIZE DOES NOT FIT ALL

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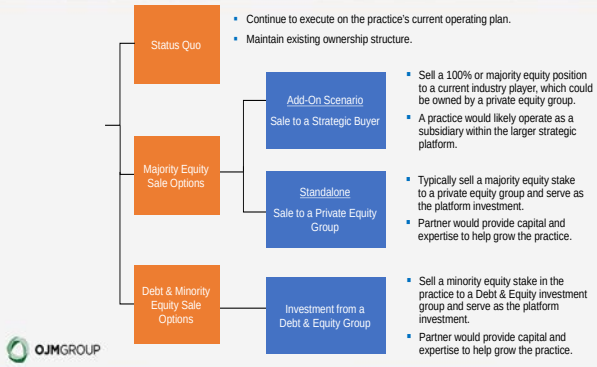
Strategic Options



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#3: FINDING THE RIGHT ADVISOR TEAM

EXPERIENCE & EXPERTISE MATTER

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Finding the Right Team

- **Wealth Advisor** – how does a transaction impact future financial life?
- **Practice Accountant** – know the books
- **Transaction Accountant** – may be the practice accountant or one who has experience in deals
  - Identify strengths and weaknesses
  - Review/improve financials before going to market
- **Experienced M&A Attorney** – ideally within healthcare transactions; orthopedic deals
- **Investment Banker –** key to create maximum value in deal, field competitive offers, negotiate terms
  - Compensation should be tied to success/value creation
  - Better off, net of fee

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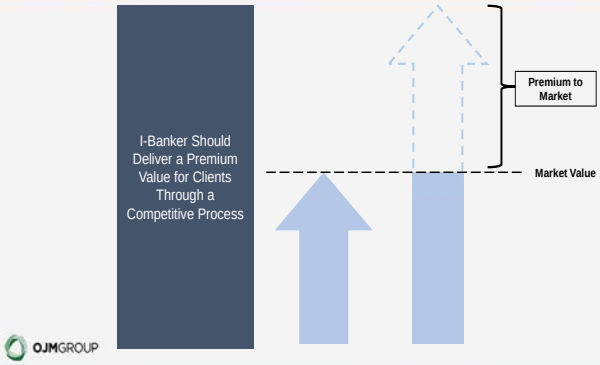
What an Investment Banker Can Offer



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#4: DEALING WITH PRIVATE EQUITY

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Dealing with Private Equity (PE)

These tips come our podcast Episodes 4.10 and 4.1

Podcast Guests: Investment banker Clint Bundy and private equity firm founder Matt Ebbel

- For practices that will become a platform to acquire others, there will be considerable interaction with PE firm(s)
  - Reverse due diligence (RDD) is crucial – other deals, principals of portfolio firms, firm reputation, etc.
  - Time and effort with key players
- For practices joining an existing platform
  - Most physicians/practices will not interact much with PE firms directly
  - Still, RDD is crucial – but easier
    - Speak extensively with the platform principals about business plan and vision
    - Speak with physicians, staff, even vendors (pharma reps) in practices already acquired
- For both, a key adviser who knows the players (attorney, investment banker) can be invaluable

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#5: PREPARING MENTALLY

UNDERSTAND & ACCEPT HOW THINGS WILL BE DIFFERENT

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Preparing Mentally

- Motivation is the fundamental factor to any deal: the WHY?
- Are you prepared to become an employee? Have bosses?
- How will this impact your daily life as a physician in the practice – managerially, medically?
- How will this impact you financially?
  - Liquidity event
  - Lower annual income
- How does this jive/not jive with your life goals?

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About OJM Group

- Specialized, fee-based wealth management firm
- 17 years in business; doctor 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 & Dentists

- **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 and Expertise for a Flat Fee**
- **Building a Relationship**

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Wealth Planning for the Modern Physician Podcast

- Physician wealth podcast hosted by David Mandell, JD, MBA
- Guests include physicians of all specialties and wealth management industry experts
- More than 75 episodes published to date
- Available on Apple Podcasts, Spotify and other popular podcast platforms
- Video versions of episodes now available on YouTube
- Scan the QR Code to listen and subscribe!

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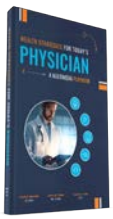
Wealth Strategies for Today's Physician: A Multi-Media Playbook

- New content from OJM: Our first book since 2020!
- Co-authored by OJM Group partners
- Innovative multi-media format includes more than 90 links to videos and podcast episodes that offer unique perspectives and real-world examples
- Videos to be periodically updated by OJM so that the Playbook remains current over time
- Crafted in six informative Strategies that can help physicians protect assets, reduce taxes, invest wisely and build wealth for retirement
- Bonus Strategy for medical practice owners and *doctorpreneurs*

Scan the QR Code to get a Free Copy!



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Contact the Presenter

David B. Mandell, JD, MBA
OJM Group Partner

- 877.656.4362
- mandell@ojmgroup.com

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SELF EVALUATION

Increasing Practice Financial Efficiency & Reducing Doctor Stress

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 - Many physicians in private practice are personally liable as fiduciaries for their practice's qualified retirement plan.

3. T/F - The Morningstar and Vanguard studies showed that most investors do not benefit from working with a professional advisor.

4. Which planning areas can professional advisors assist doctors with beyond investing:

a. Debt repayment/budgeting
b. Tax reduction
c. Asset protection
d. Insurances
e. All of the above.

5. T/F - The term "Financial Advisor" is standardized so that a physician or dentist working with a person with such a title knows exactly what their education and training will be.

6. T/F - "EBITDA" stands for "Earnings Before Interest Expenses, Income Taxes, Depreciation and Amortization Expense"

7. Which types of advisors are typically involved in a sale/merger of a medical or dental practice:

a. Personal Wealth Advisor
b. Practice Accountant
c. M&A Attorney
d. Investment Banker
e. All of the above

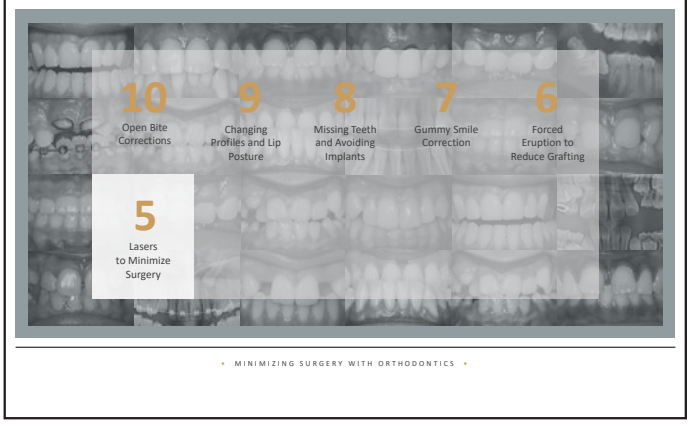
Answer Key: 1. D, 2. T, 3. F, 4. E, 5. F, 6. T, 7. E

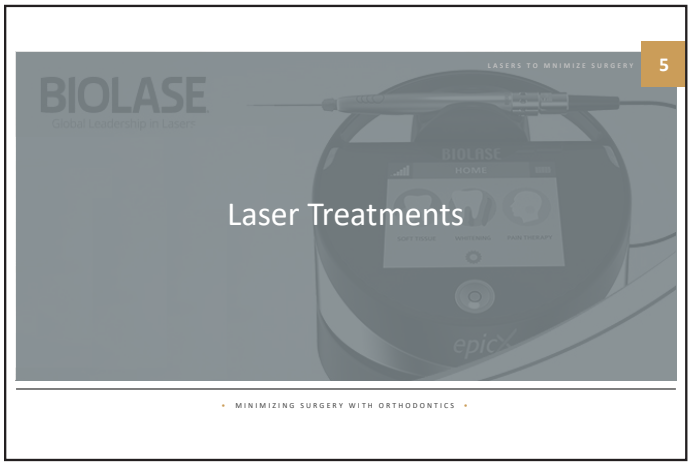
Luccarelli & Barrese
ORTHODONTICS

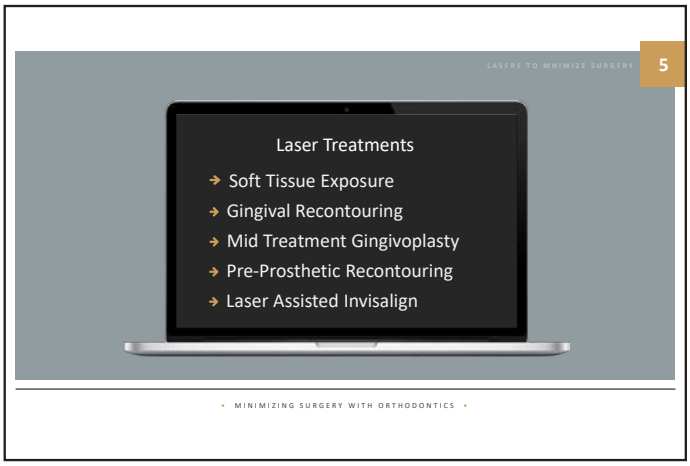
51 Charles Street
Mineola, NY 11501

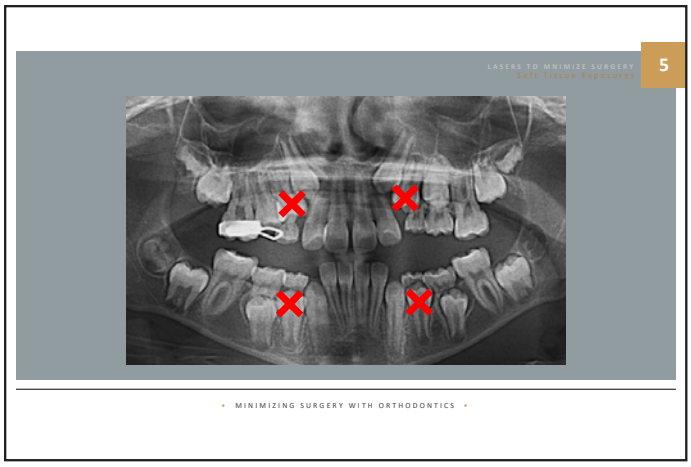
Minimizing Surgery with Orthodontics – Part 2

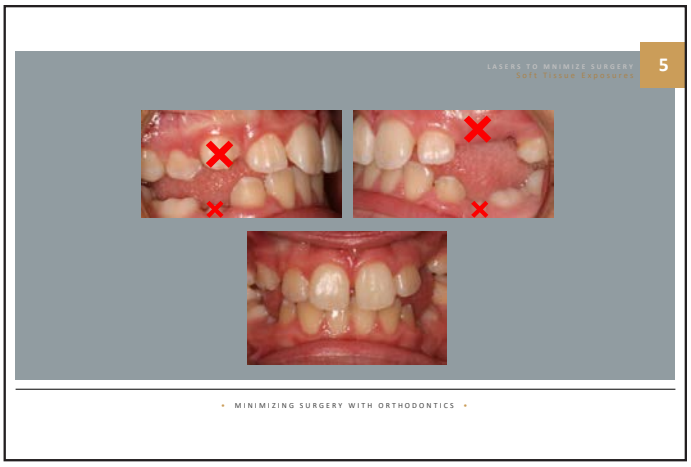
Steven J. Luccarelli, DDS








LASERS TO MNIMIZE SURGERY
Soft Tissue Exposures
5
MINIMIZING SURGERY WITH ORTHODONTICS


LASERS TO MNIMIZE SURGERY
Soft Tissue Exposures
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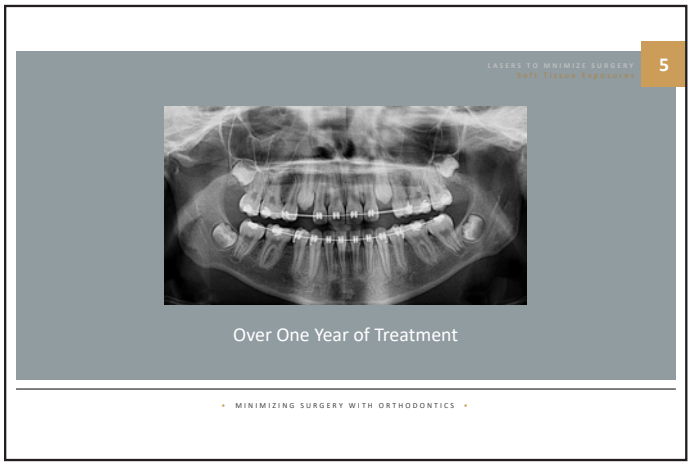
MINIMIZING SURGERY WITH ORTHODONTICS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Soft Tissue Exposures
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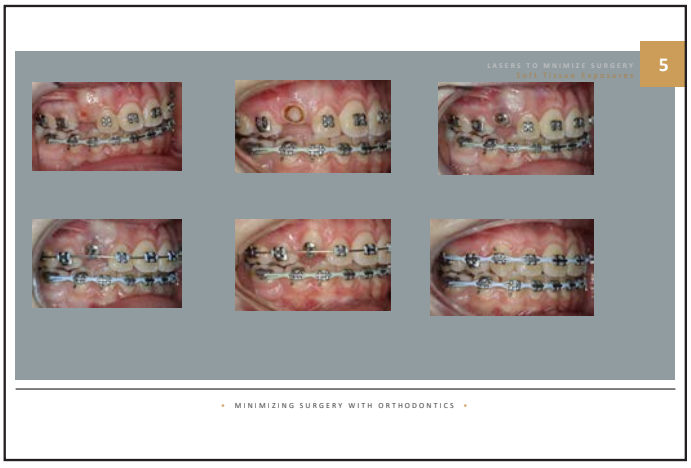
Over One Year of Treatment
MINIMIZING SURGERY WITH ORTHODONTICS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Soft Tissue Exposures
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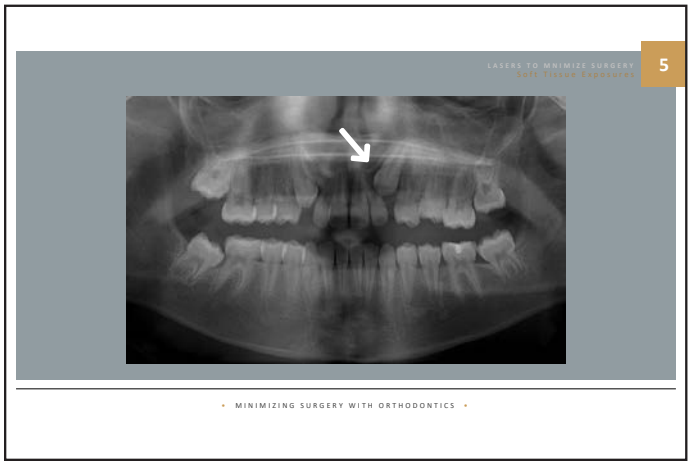
MINIMIZING SURGERY WITH ORTHODONTICS


LASERS TO MNIMIZE SURGERY
Soft Tissue Exposures
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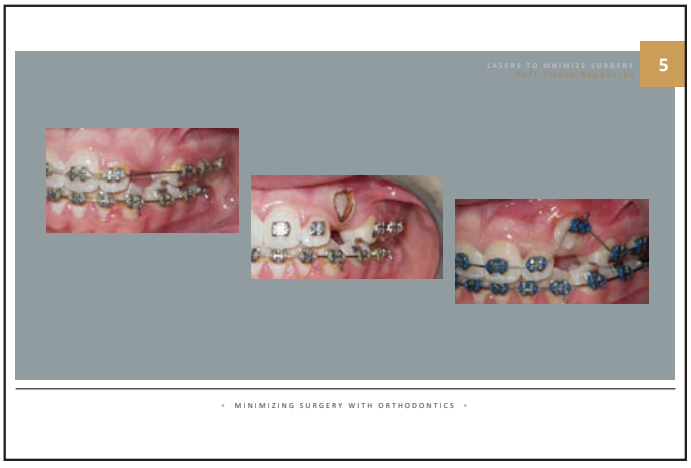
MINIMIZING SURGERY WITH ORTHODONTICS


LASERS TO MNIMIZE SURGERY
Soft Tissue Exposures
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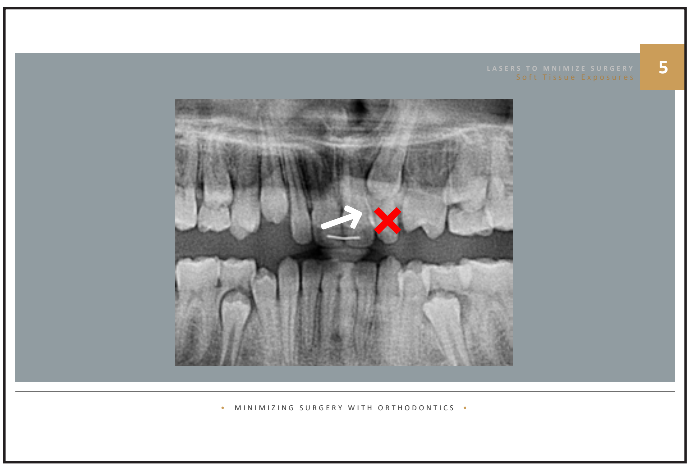
MINIMIZING SURGERY WITH ORTHODONTICS


LASERS TO MNIMIZE SURGERY
Soft Tissue Exposures
5
Five Months Later
MINIMIZING SURGERY WITH ORTHODONTICS


LASERS TO MNIMIZE SURGERY
Soft Tissue Exposures
5
MINIMIZING SURGERY WITH ORTHODONTICS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Soft Tissue Exposures
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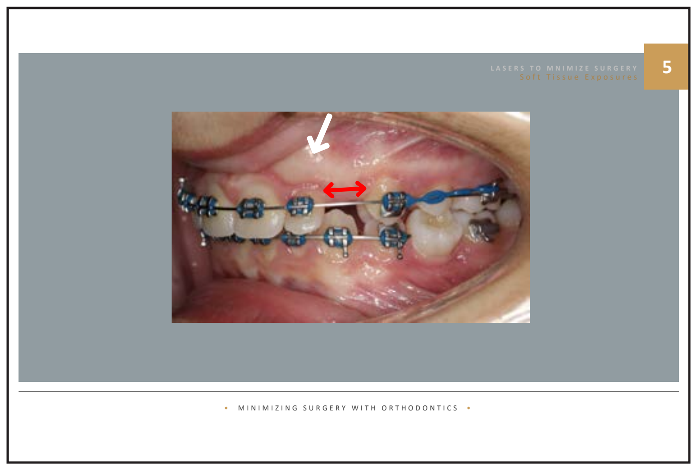
MINIMIZING SURGERY WITH ORTHODONTICS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Soft Tissue Exposures
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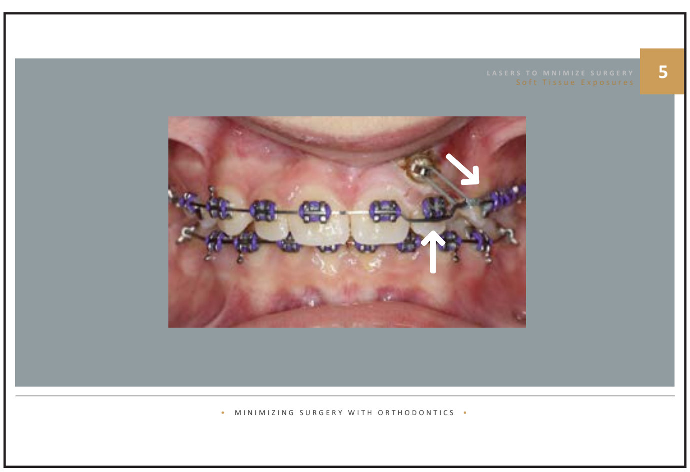
MINIMIZING SURGERY WITH ORTHODONTICS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Soft Tissue Exposures
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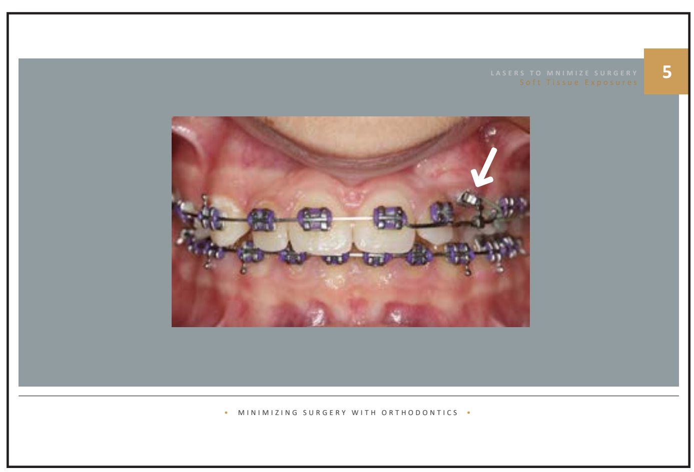
MINIMIZING SURGERY WITH ORTHODONTICS


LASERS TO MNIMIZE SURGERY
Soft Tissue Exposures
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MINIMIZING SURGERY WITH ORTHODONTICS

LASERS TO MNIMIZE SURGERY
Soft Tissue Exposures
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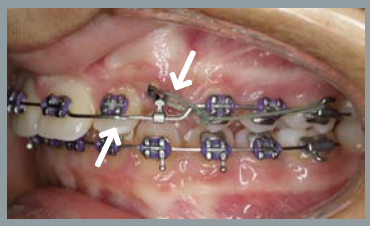

• MINIMIZING SURGERY WITH ORTHODONTICS •

LASERS TO MNIMIZE SURGERY
Soft Tissue Exposures
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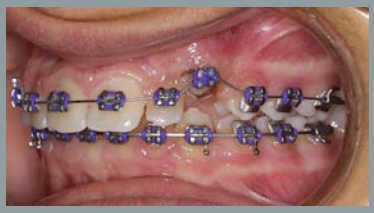

Six Months Later

• MINIMIZING SURGERY WITH ORTHODONTICS •

LASERS TO MNIMIZE SURGERY
Soft Tissue Exposures
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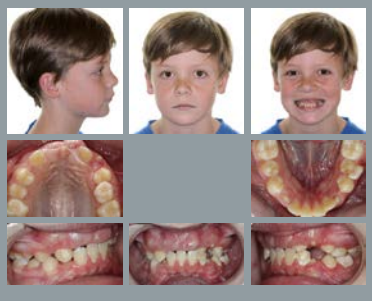

• MINIMIZING SURGERY WITH ORTHODONTICS •

LASERS TO MNIMIZE SURGERY
Soft Tissue Exposures
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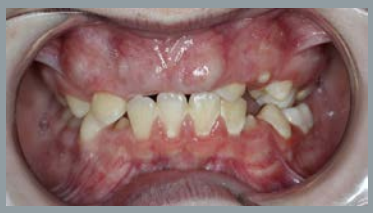

11-Year-Old

• MINIMIZING SURGERY WITH ORTHODONTICS •

LASERS TO MNIMIZE SURGERY
Soft Tissue Exposures
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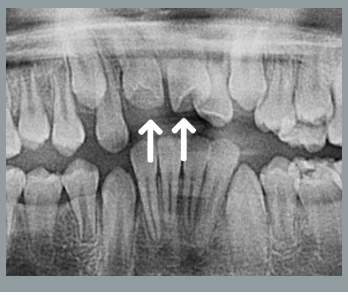


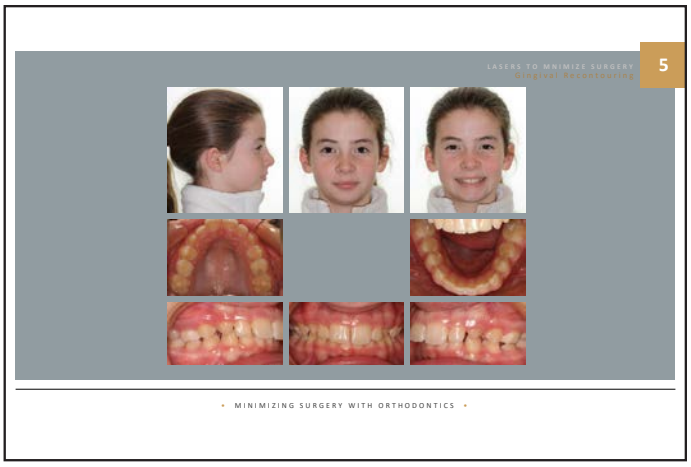
• MINIMIZING SURGERY WITH ORTHODONTICS •

LASERS TO MNIMIZE SURGERY
Soft Tissue Exposures
5

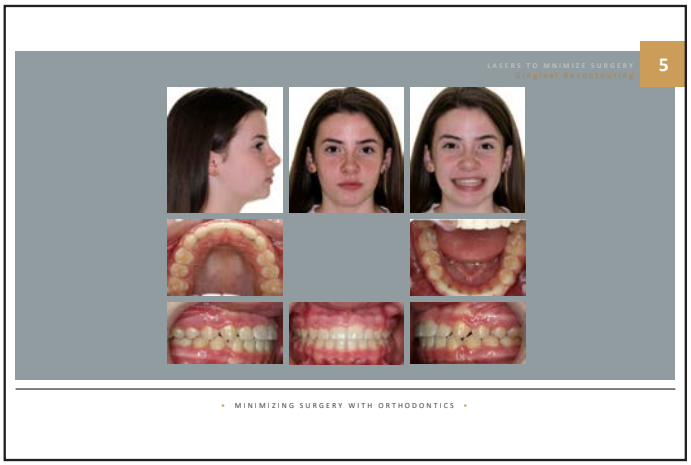
Sixteen Weeks Later

• MINIMIZING SURGERY WITH ORTHODONTICS •


LASERS TO MNIMIZE SURGERY
5
Gingival Recontouring
• MINIMIZING SURGERY WITH ORTHODONTICS •


LASERS TO MNIMIZE SURGERY
Gingival Recontouring
5
• MINIMIZING SURGERY WITH ORTHODONTICS •


LASERS TO MNIMIZE SURGERY
Gingival Recontouring
5
Thick Biotype
• MINIMIZING SURGERY WITH ORTHODONTICS •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Gingival Recontouring
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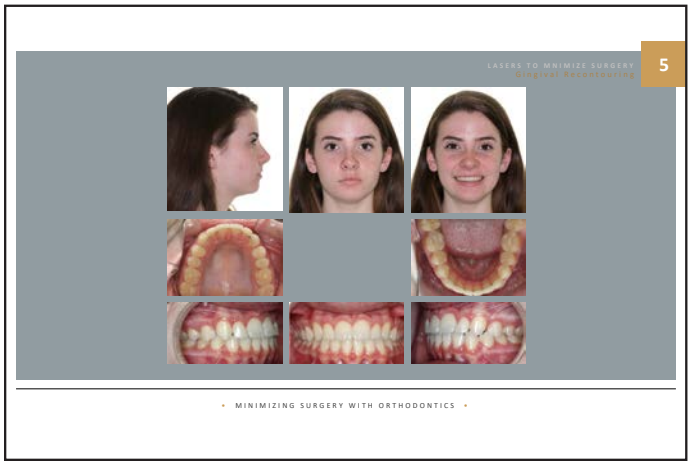
• MINIMIZING SURGERY WITH ORTHODONTICS •


LASERS TO MNIMIZE SURGERY
Gingival Recontouring
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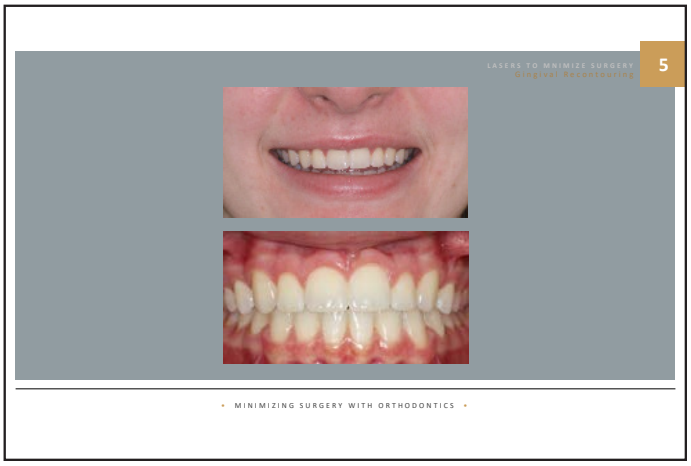
• MINIMIZING SURGERY WITH ORTHODONTICS •


LASERS TO MNIMIZE SURGERY
Gingival Recontouring
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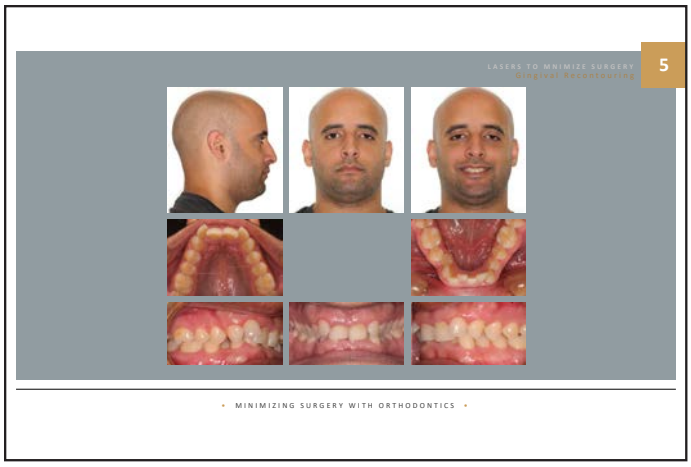
• MINIMIZING SURGERY WITH ORTHODONTICS •


LASERS TO MNIMIZE SURGERY
Gingival Recontouring
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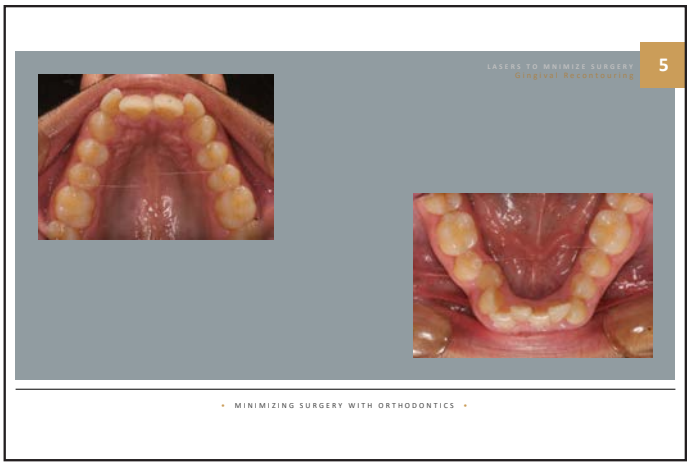
• MINIMIZING SURGERY WITH ORTHODONTICS •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Gingival Recontouring
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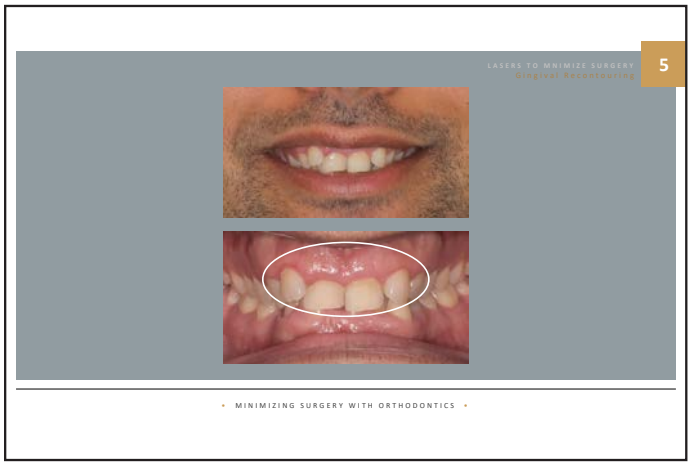
• MINIMIZING SURGERY WITH ORTHODONTICS •


LASERS TO MNIMIZE SURGERY
Gingival Recontouring
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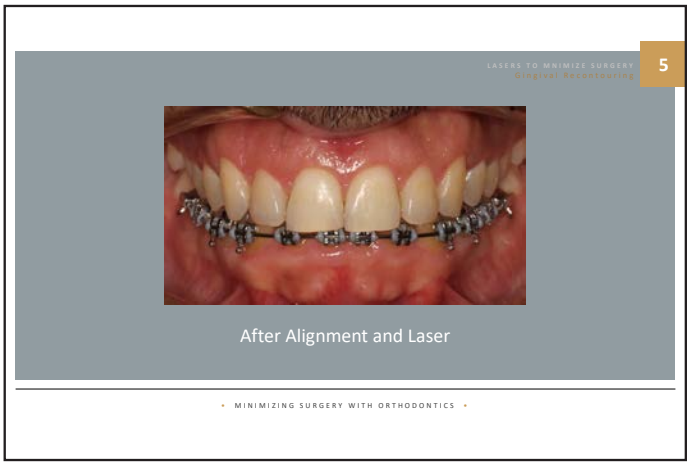
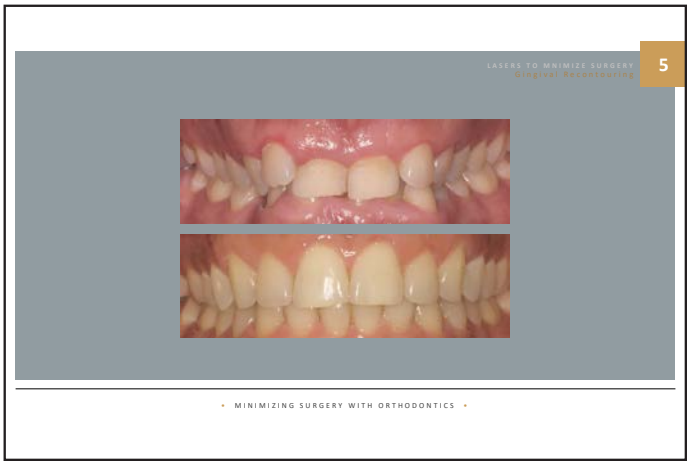
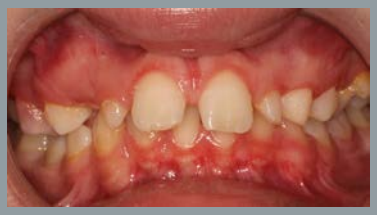
• MINIMIZING SURGERY WITH ORTHODONTICS •


LASERS TO MNIMIZE SURGERY
Gingival Recontouring
5
After Alignment and Laser
• MINIMIZING SURGERY WITH ORTHODONTICS •


LASERS TO MNIMIZE SURGERY
Gingival Recontouring
5
• MINIMIZING SURGERY WITH ORTHODONTICS •


LASERS TO MNIMIZE SURGERY
Gingival Recontouring
5
• MINIMIZING SURGERY WITH ORTHODONTICS •

Mid Treatment Recontouring



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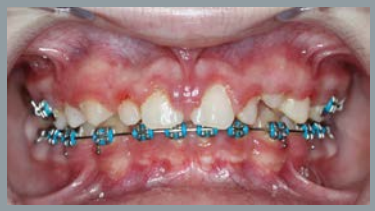
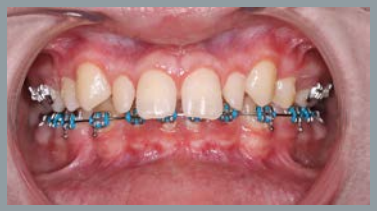
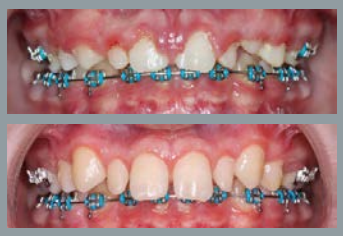


Just Three Months of Braces



Six Weeks After Gingival Recontouring

LASERS TO MNIMIZE SURGERY
Mid Treatment Recontouring
5



• MINIMIZING SURGERY WITH ORTHODONTICS •

LASERS TO MNIMIZE SURGERY
Mid Treatment Recontouring
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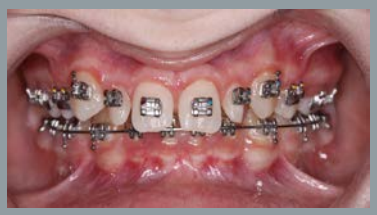


Replace Brackets

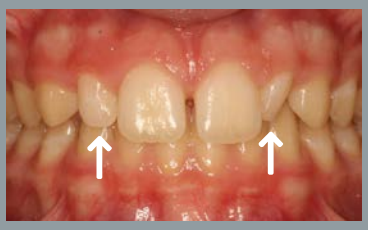
• MINIMIZING SURGERY WITH ORTHODONTICS •

LASERS TO MNIMIZE SURGERY
5

Pre-Prosthetic Recontouring

• MINIMIZING SURGERY WITH ORTHODONTICS •

LASERS TO MNIMIZE SURGERY
Pre-Prosthetic Recontouring
5



• MINIMIZING SURGERY WITH ORTHODONTICS •

LASERS TO MNIMIZE SURGERY
Pre-Prosthetic Recontouring
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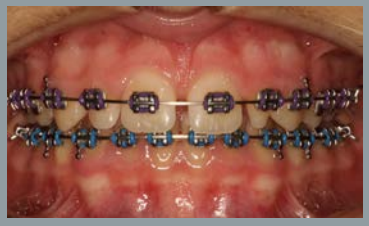
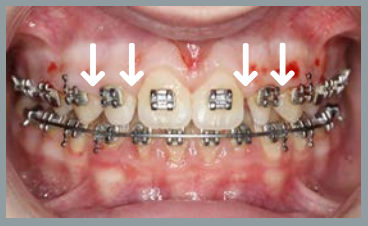
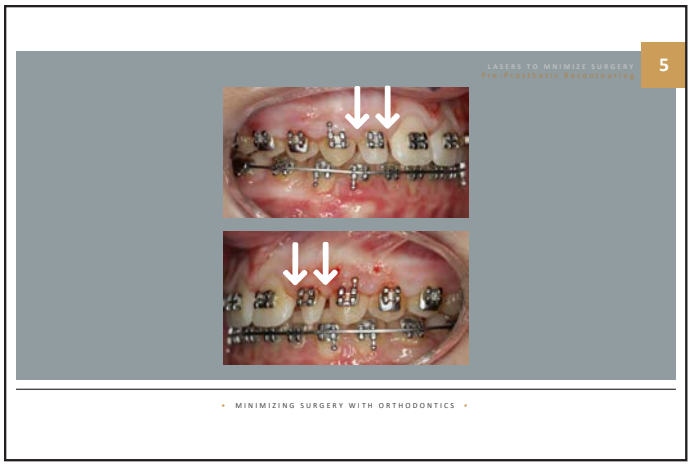


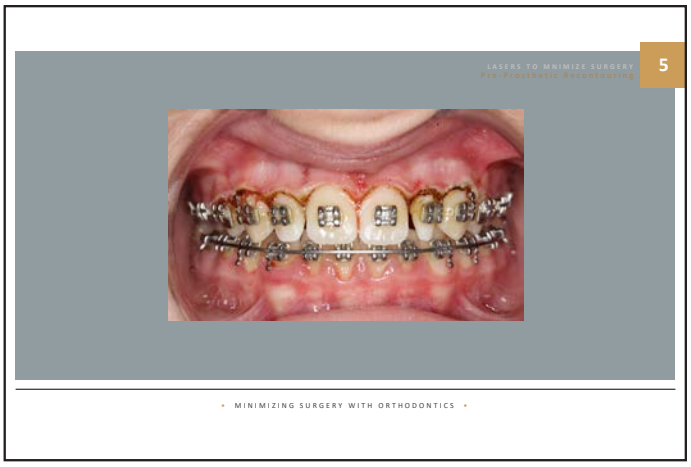
• MINIMIZING SURGERY WITH ORTHODONTICS •

LASERS TO MNIMIZE SURGERY
Pre-Prosthetic Recontouring
5



• MINIMIZING SURGERY WITH ORTHODONTICS •


LASERS TO MNIMIZE SURGERY
Pre-Prosthetic Recontouring
5
MINIMIZING SURGERY WITH ORTHODONTICS


LASERS TO MNIMIZE SURGERY
Pre-Prosthetic Recontouring
5
MINIMIZING SURGERY WITH ORTHODONTICS


LASERS TO MNIMIZE SURGERY
Pre-Prosthetic Recontouring
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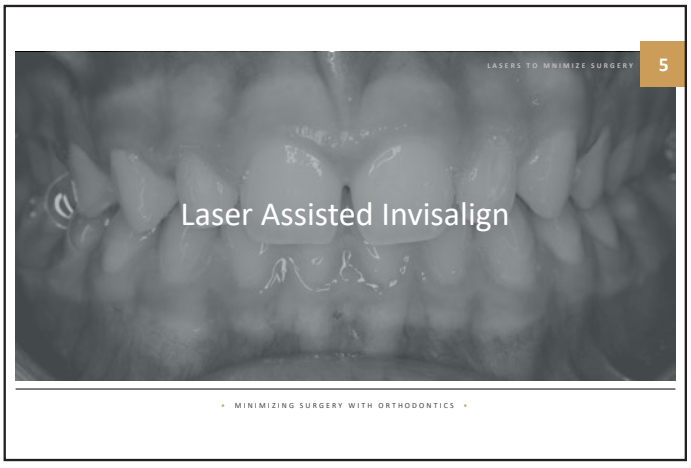
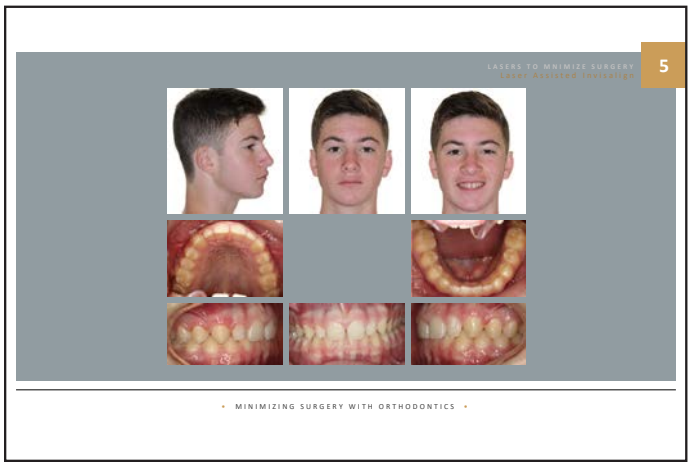
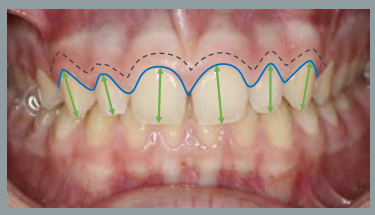
Laterals Bonded
MINIMIZING SURGERY WITH ORTHODONTICS

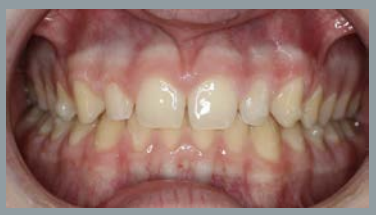

LASERS TO MNIMIZE SURGERY
5
Laser Assisted Invisalign
MINIMIZING SURGERY WITH ORTHODONTICS


LASERS TO MNIMIZE SURGERY
Laser Assisted Invisalign
5
MINIMIZING SURGERY WITH ORTHODONTICS

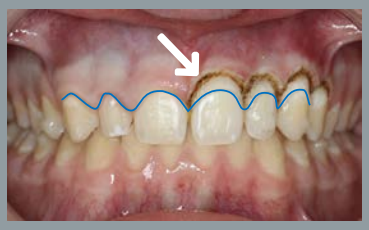

LASERS TO MNIMIZE SURGERY
Laser Assisted Invisalign
5
Two Main Reasons
for Invisalign Success
1. Compliance!
2. Surface Area!
MINIMIZING SURGERY WITH ORTHODONTICS

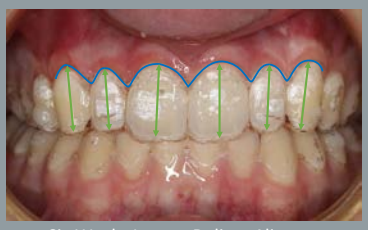


Minimal Surface Area

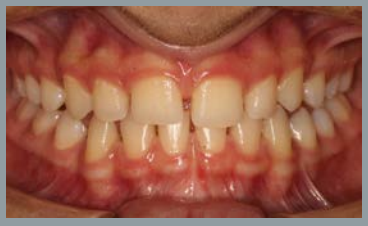


Ready for Laser and Refinement Scan

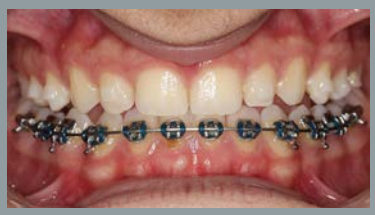




Six Weeks Later – Deliver Aligners



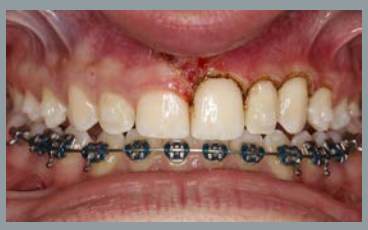
LASERS TO MNIMIZE SURGERY
Laser Assisted Invisalign
5



Ready for Laser and Refinement Scan

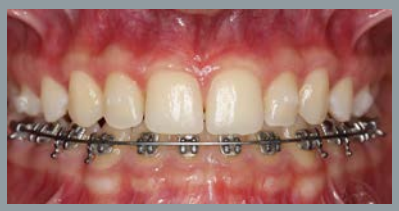
• MINIMIZING SURGERY WITH ORTHODONTICS •

LASERS TO MNIMIZE SURGERY
Laser Assisted Invisalign
5



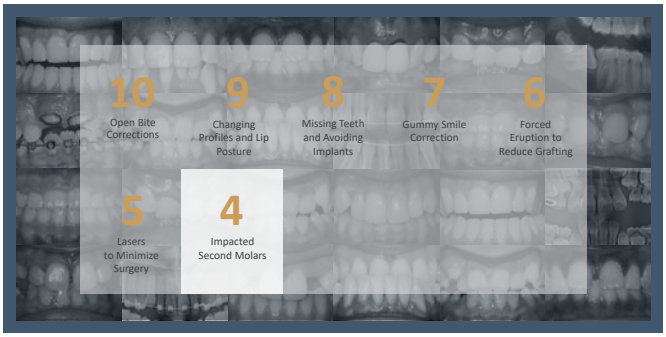
• MINIMIZING SURGERY WITH ORTHODONTICS •

LASERS TO MNIMIZE SURGERY
Laser Assisted Invisalign
5



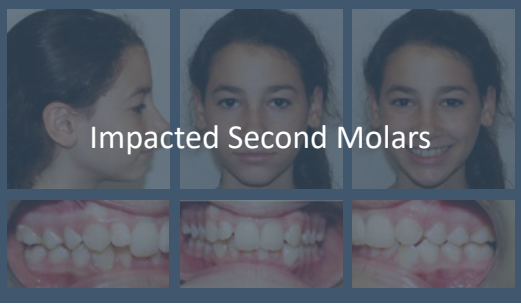
Six Weeks Later

• MINIMIZING SURGERY WITH ORTHODONTICS •



• MINIMIZING SURGERY WITH ORTHODONTICS •

4

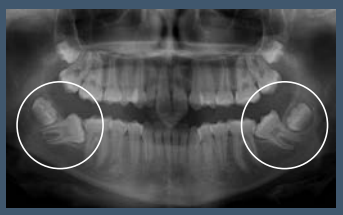


• MINIMIZING SURGERY WITH ORTHODONTICS •

IMPACTED SECOND MOLARS
4

• MINIMIZING SURGERY WITH ORTHODONTICS •

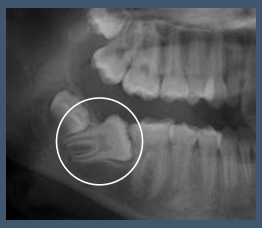
IMPACTED SECOND MOLARS 4



Impacted Second Molars

• MINIMIZING SURGERY WITH ORTHODONTICS •

IMPACTED SECOND MOLARS 4



• MINIMIZING SURGERY WITH ORTHODONTICS •

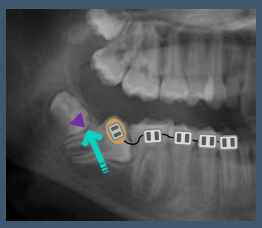
IMPACTED SECOND MOLARS 4

Options for
Impacted Second Molars

- Extract Second Molar and Hope!
- Surgical Upright Second Molar
- Orthodontically Upright?

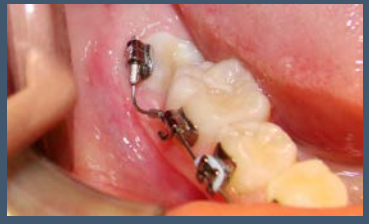
• MINIMIZING SURGERY WITH ORTHODONTICS •

IMPACTED SECOND MOLARS 4



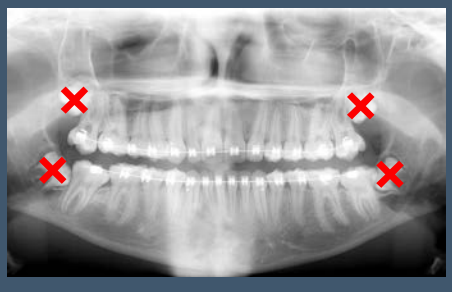
• MINIMIZING SURGERY WITH ORTHODONTICS •

IMPACTED SECOND MOLARS 4



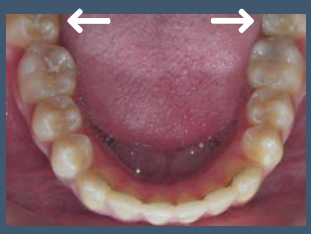
• MINIMIZING SURGERY WITH ORTHODONTICS •

IMPACTED SECOND MOLARS 4



• MINIMIZING SURGERY WITH ORTHODONTICS •

IMPACTED SECOND MOLARS 4

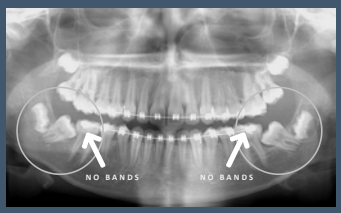


• MINIMIZING SURGERY WITH ORTHODONTICS •

IMPACTED SECOND MOLARS 4

• MINIMIZING SURGERY WITH ORTHODONTICS •

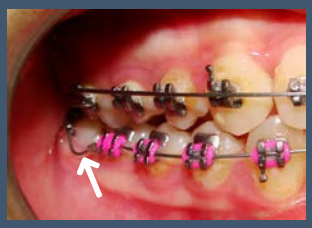
IMPACTED SECOND MOLARS 4



Six Months Into Treatment

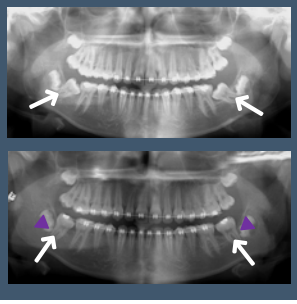
• MINIMIZING SURGERY WITH ORTHODONTICS •

IMPACTED SECOND MOLARS 4



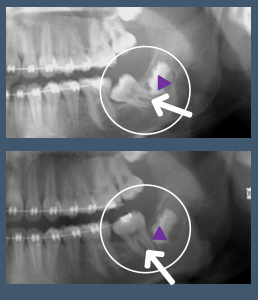
• MINIMIZING SURGERY WITH ORTHODONTICS •

IMPACTED SECOND MOLARS 4



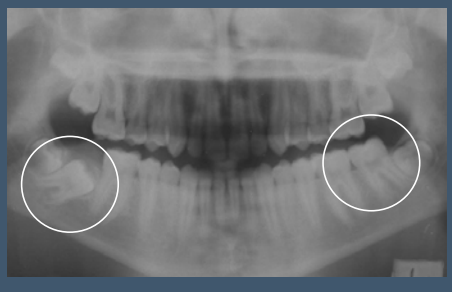
• MINIMIZING SURGERY WITH ORTHODONTICS •

IMPACTED SECOND MOLARS 4



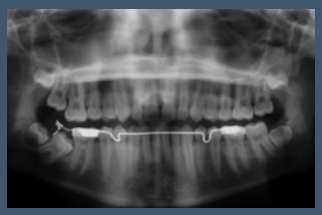
• MINIMIZING SURGERY WITH ORTHODONTICS •

IMPACTED SECOND MOLARS 4



• MINIMIZING SURGERY WITH ORTHODONTICS •

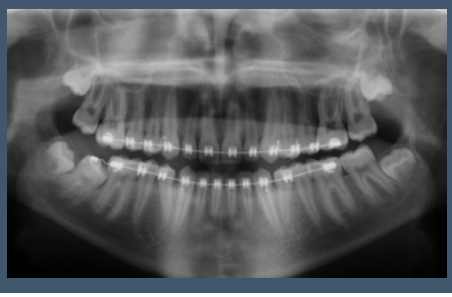
IMPACTED SECOND MOLARS 4



Laser and Bracket

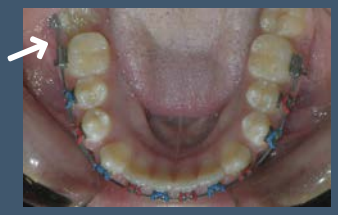
• MINIMIZING SURGERY WITH ORTHODONTICS •

IMPACTED SECOND MOLARS 4



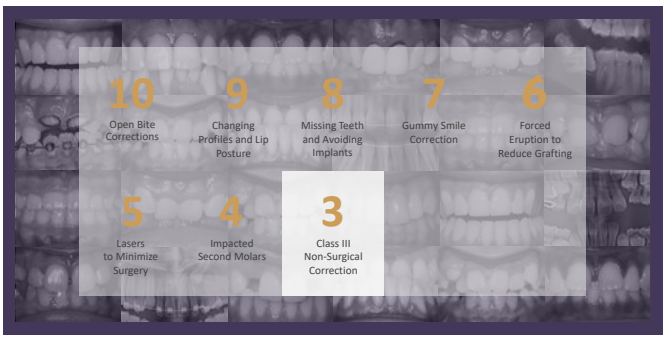
• MINIMIZING SURGERY WITH ORTHODONTICS •

IMPACTED SECOND MOLARS 4



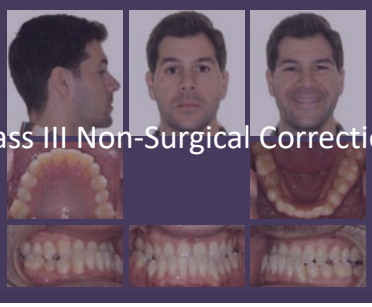
Laser Again

• MINIMIZING SURGERY WITH ORTHODONTICS •



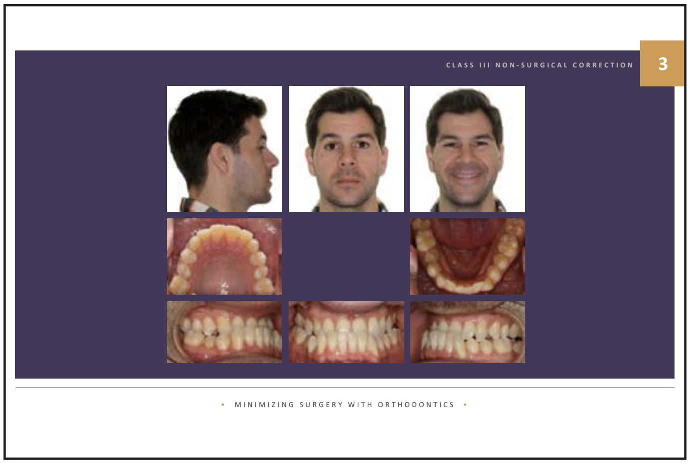
• MINIMIZING SURGERY WITH ORTHODONTICS •

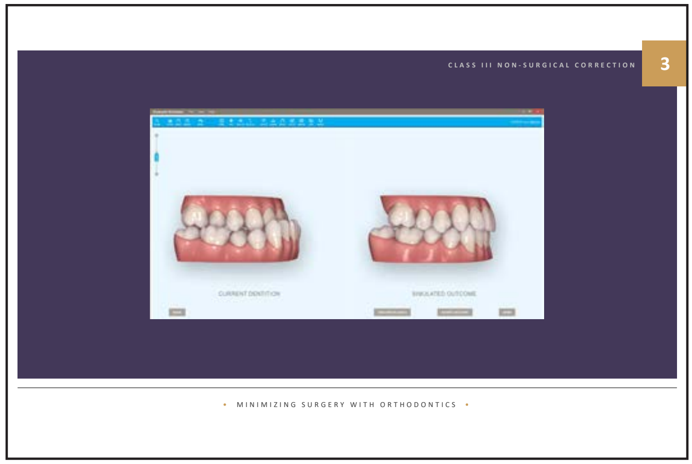
3



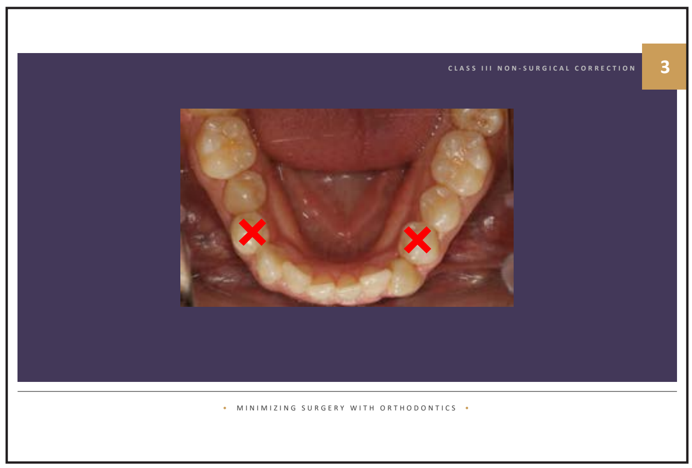
Class III Non-Surgical Correction

• MINIMIZING SURGERY WITH ORTHODONTICS •


CLASS III NON-SURGICAL CORRECTION
3
MINIMIZING SURGERY WITH ORTHODONTICS


CLASS III NON-SURGICAL CORRECTION
3
MINIMIZING SURGERY WITH ORTHODONTICS


CLASS III NON-SURGICAL CORRECTION
3
MINIMIZING SURGERY WITH ORTHODONTICS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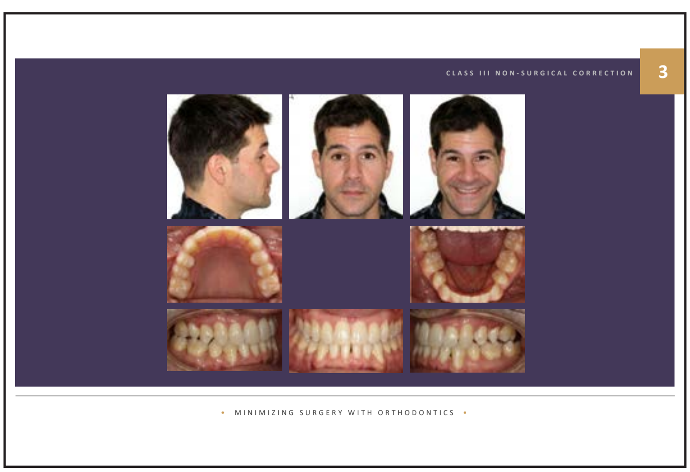
MINIMIZING SURGERY WITH ORTHODONTICS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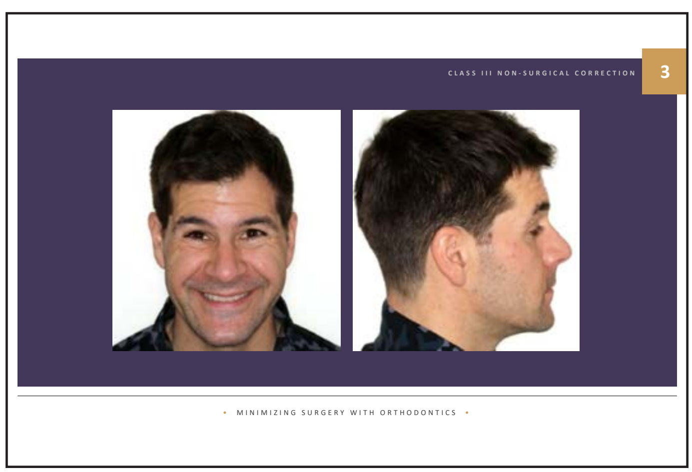
MINIMIZING SURGERY WITH ORTHODONTICS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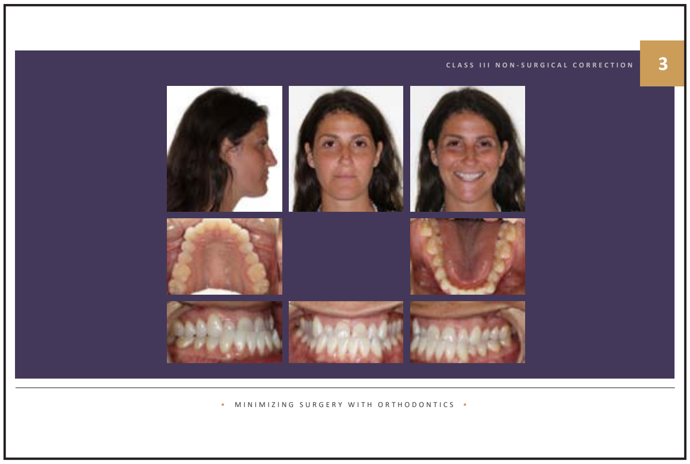
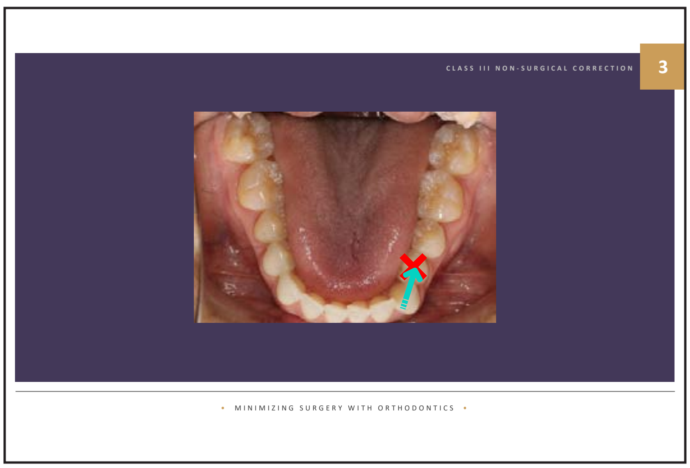
MINIMIZING SURGERY WITH ORTHODONTICS


CLASS III NON-SURGICAL CORRECTION
3
• MINIMIZING SURGERY WITH ORTHODONTICS •


CLASS III NON-SURGICAL CORRECTION
3
• MINIMIZING SURGERY WITH ORTHODONTICS •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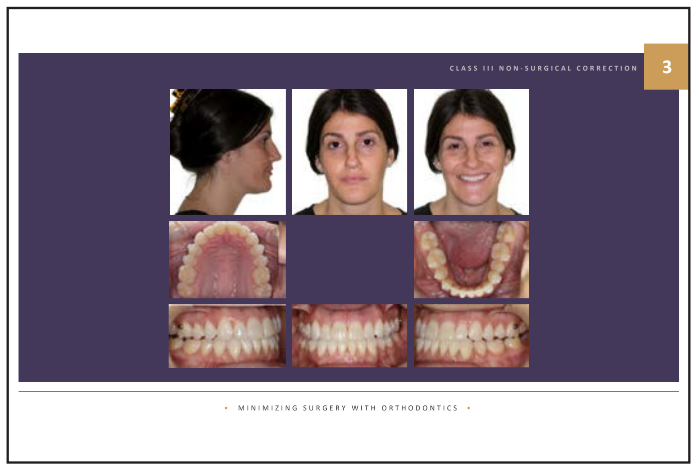
• MINIMIZING SURGERY WITH ORTHODONTICS •


CLASS III NON-SURGICAL CORRECTION
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• MINIMIZING SURGERY WITH ORTHODONTICS •


CLASS III NON-SURGICAL CORRECTION
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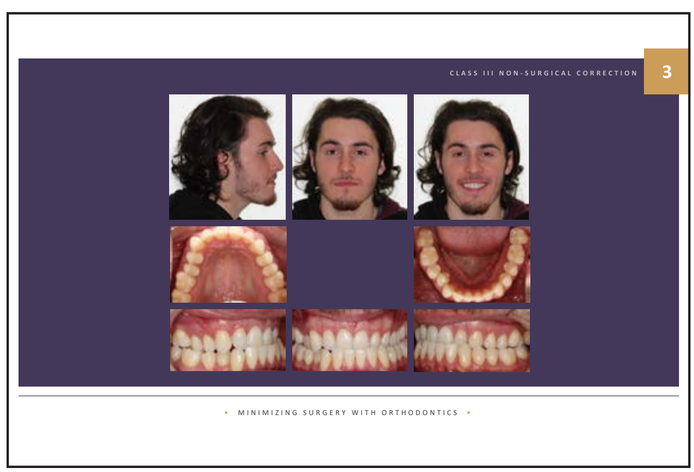
CLASS III NON-SURGICAL CORRECTION
3
• MINIMIZING SURGERY WITH ORTHODONTICS •


CLASS III NON-SURGICAL CORRECTION
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MINIMIZING SURGERY WITH ORTHODONTICS


CLASS III NON-SURGICAL CORRECTION
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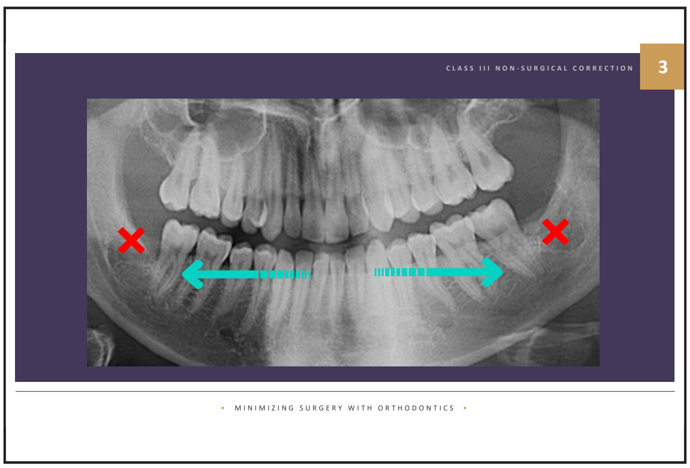
MINIMIZING SURGERY WITH ORTHODONTICS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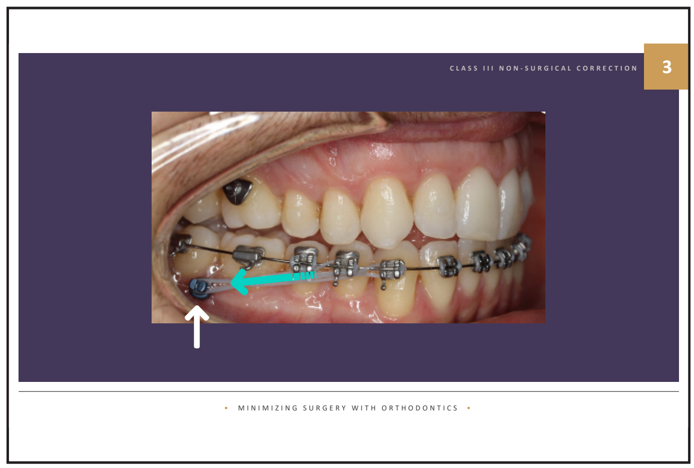
MINIMIZING SURGERY WITH ORTHODONTICS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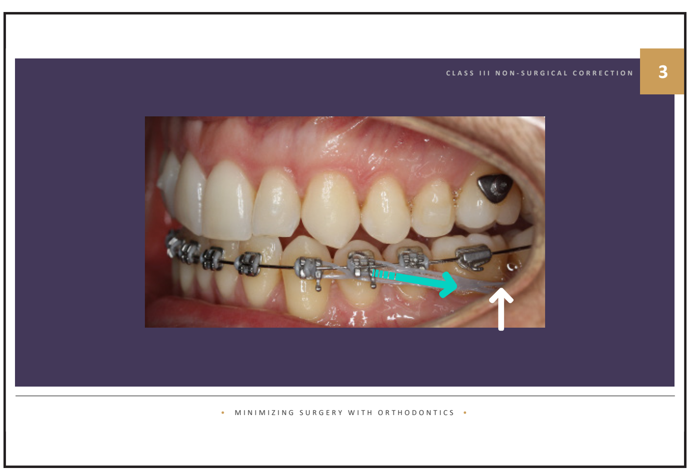
MINIMIZING SURGERY WITH ORTHODONTICS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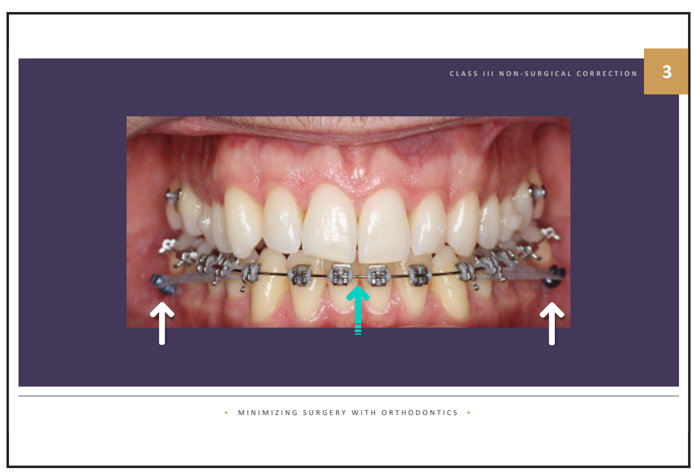
MINIMIZING SURGERY WITH ORTHODONTICS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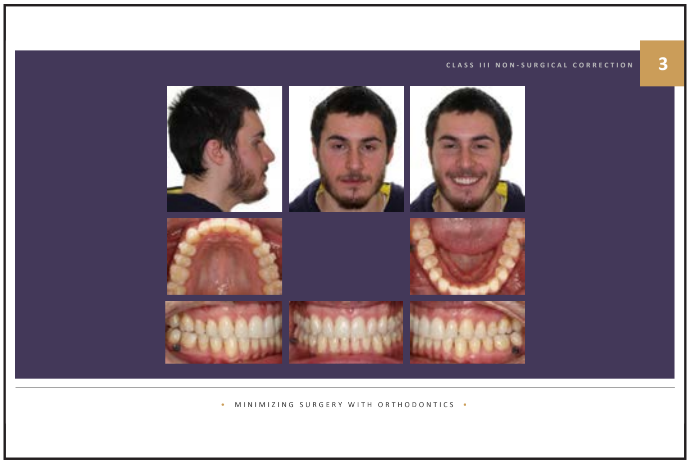
MINIMIZING SURGERY WITH ORTHODONTICS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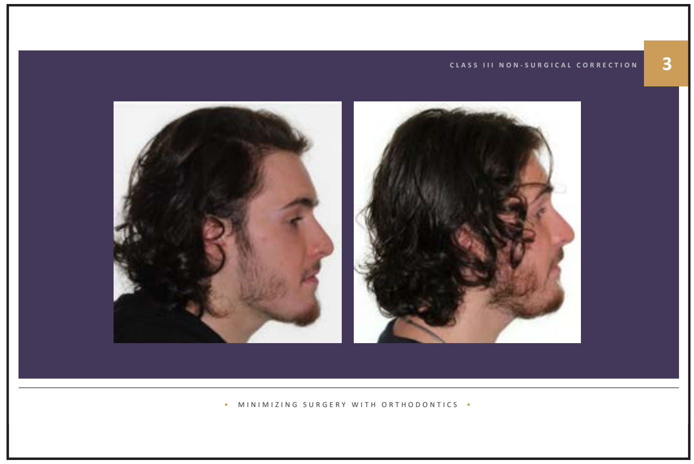
MINIMIZING SURGERY WITH ORTHODONTICS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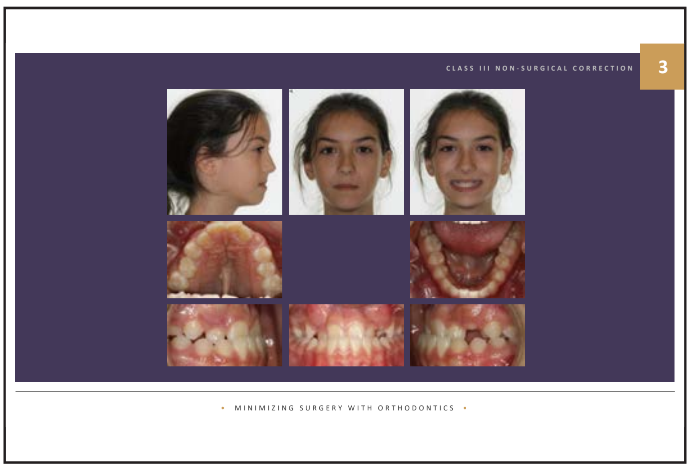
MINIMIZING SURGERY WITH ORTHODONTICS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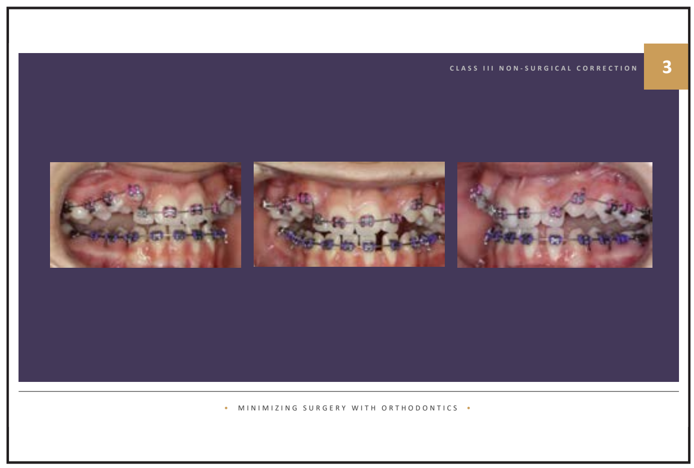
MINIMIZING SURGERY WITH ORTHODONTICS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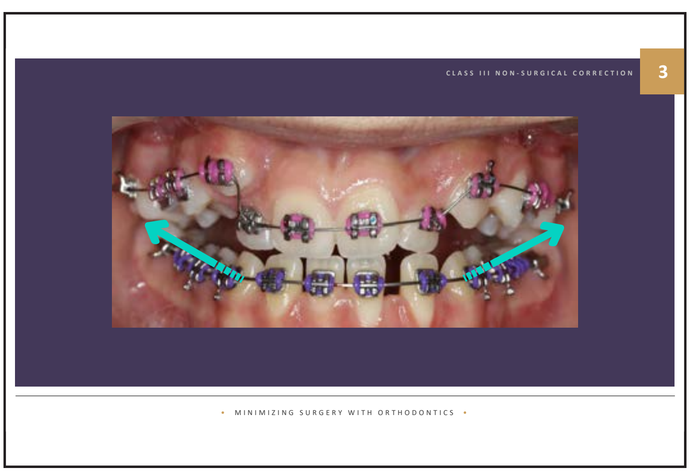
MINIMIZING SURGERY WITH ORTHODONTICS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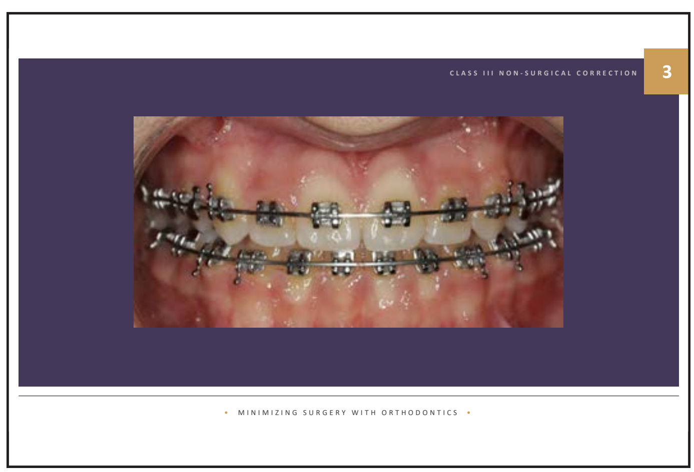
MINIMIZING SURGERY WITH ORTHODONTICS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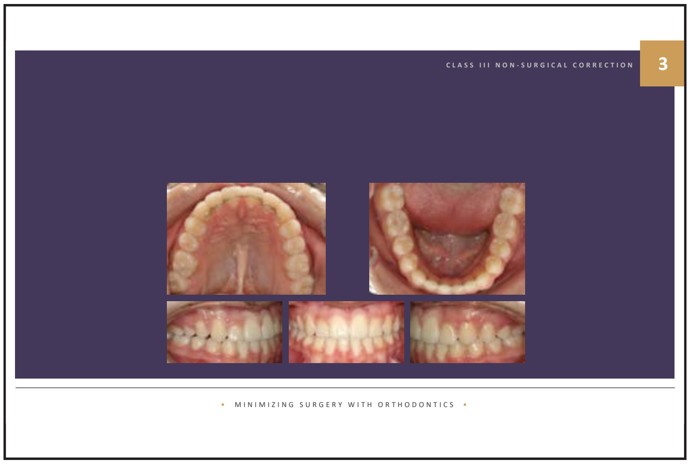
MINIMIZING SURGERY WITH ORTHODONTICS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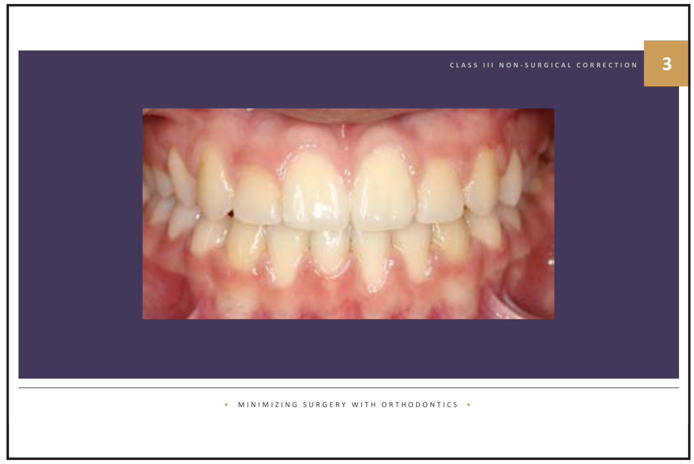
MINIMIZING SURGERY WITH ORTHODONTICS


CLASS III NON-SURGICAL CORRECTION
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MINIMIZING SURGERY WITH ORTHODONTICS


CLASS III NON-SURGICAL CORRECTION
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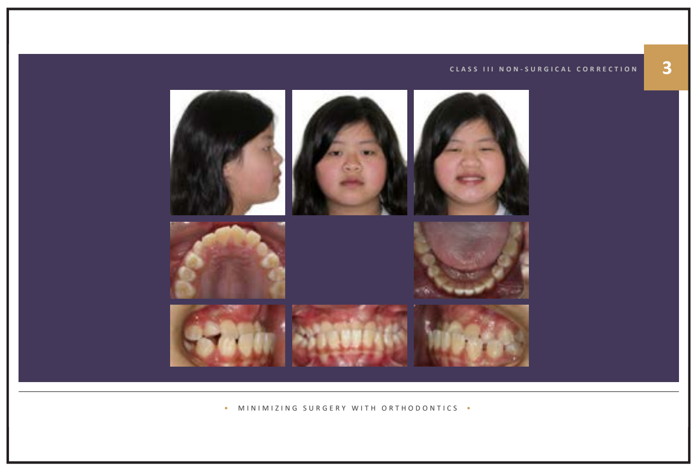
MINIMIZING SURGERY WITH ORTHODONTICS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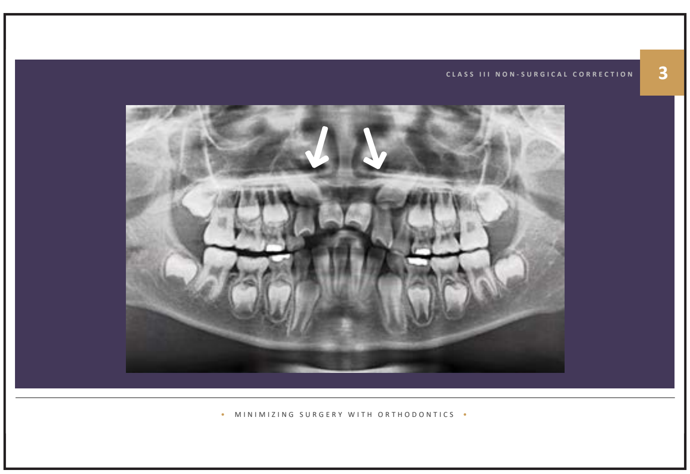
MINIMIZING SURGERY WITH ORTHODONTICS


CLASS III NON-SURGICAL CORRECTION
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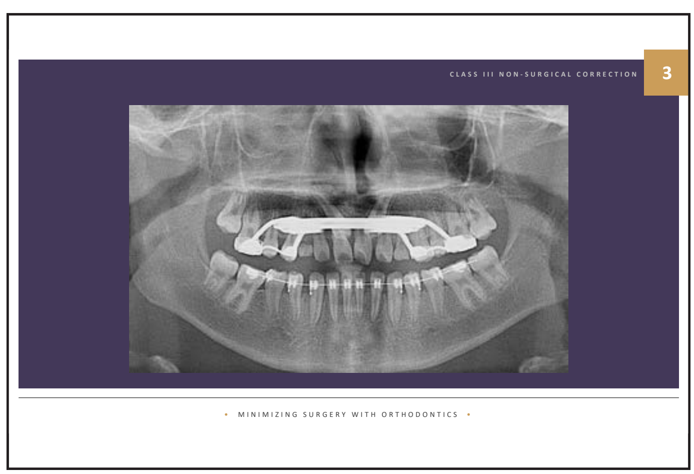
MINIMIZING SURGERY WITH ORTHODONTICS


CLASS III NON-SURGICAL CORRECTION
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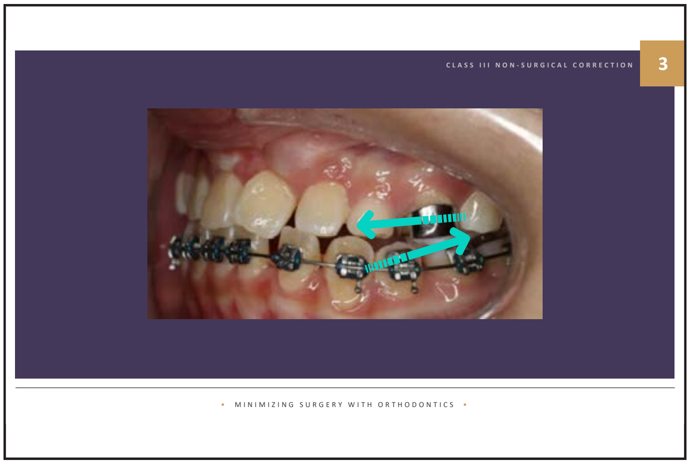
MINIMIZING SURGERY WITH ORTHODONTICS


CLASS III NON-SURGICAL CORRECTION
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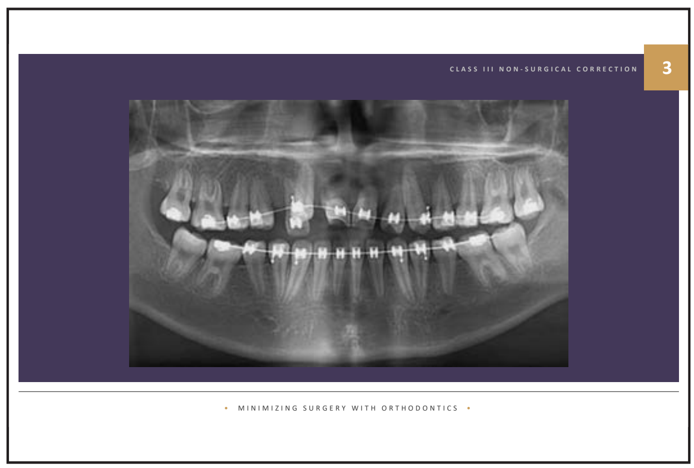
MINIMIZING SURGERY WITH ORTHODONTICS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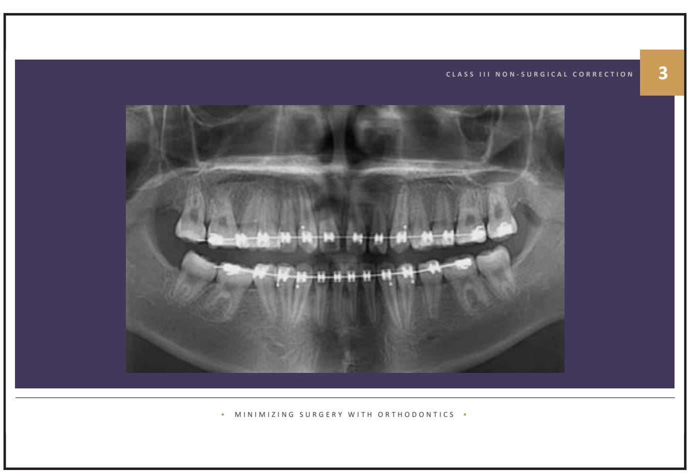
MINIMIZING SURGERY WITH ORTHODONTICS


CLASS III NON-SURGICAL CORRECTION
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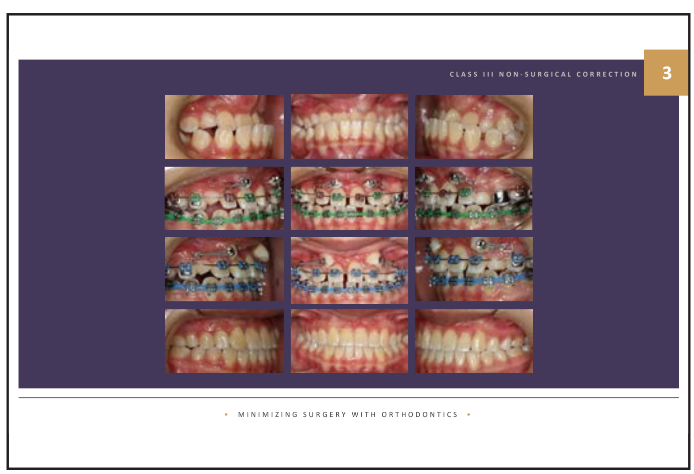
MINIMIZING SURGERY WITH ORTHODONTICS


CLASS III NON-SURGICAL CORRECTION
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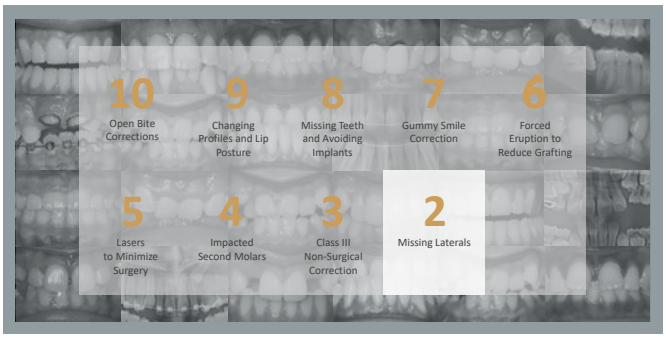

• MINIMIZING SURGERY WITH ORTHODONTICS •

• MINIMIZING SURGERY WITH ORTHODONTICS •

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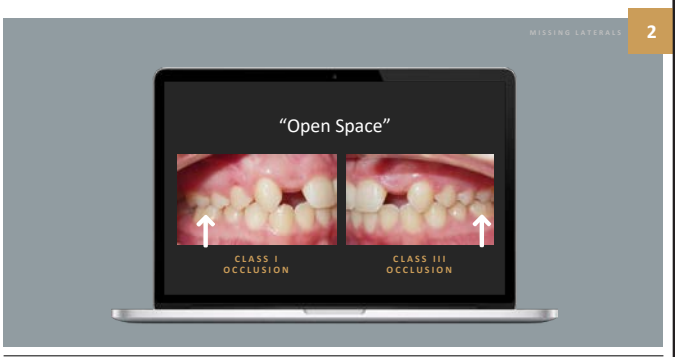
• MINIMIZING SURGERY WITH ORTHODONTICS •



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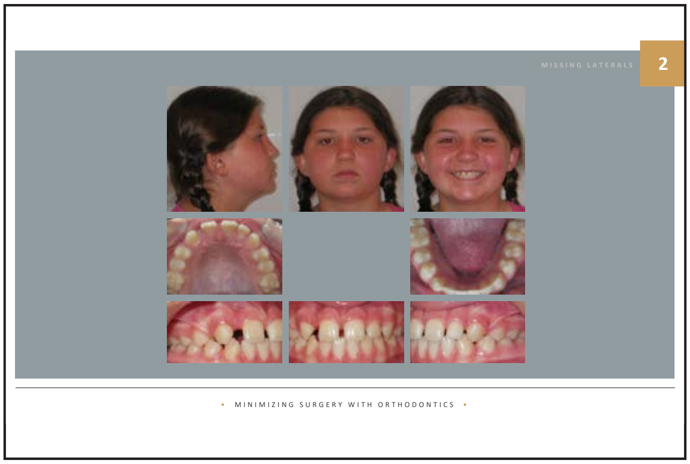
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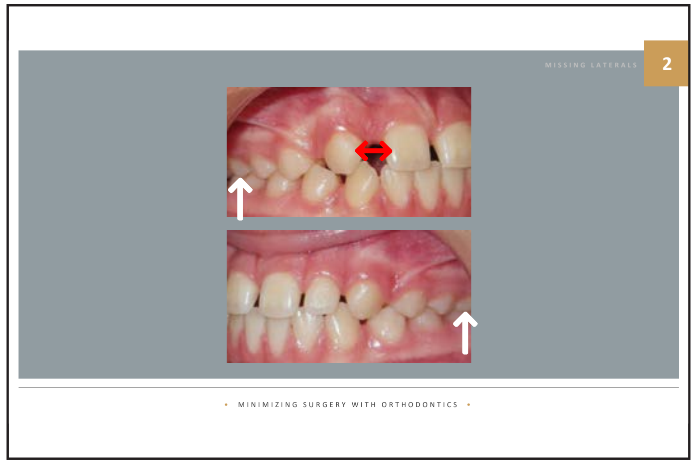
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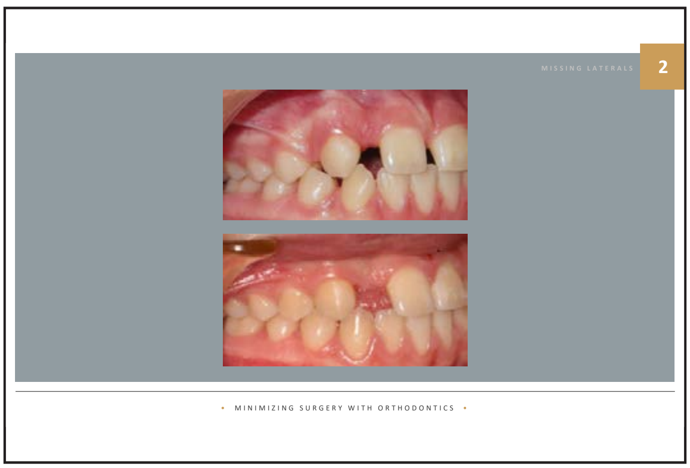
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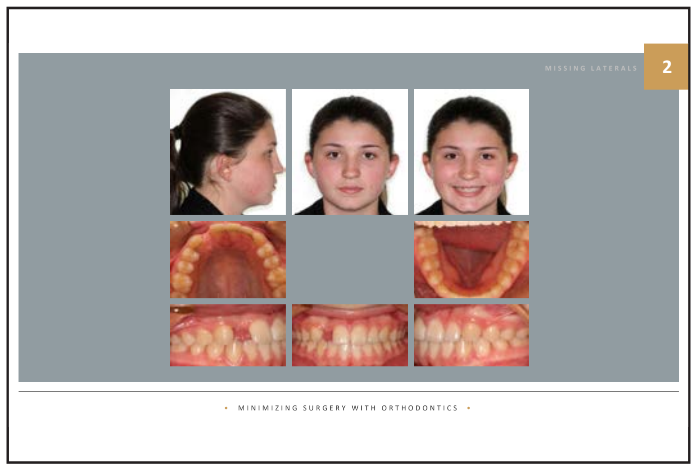
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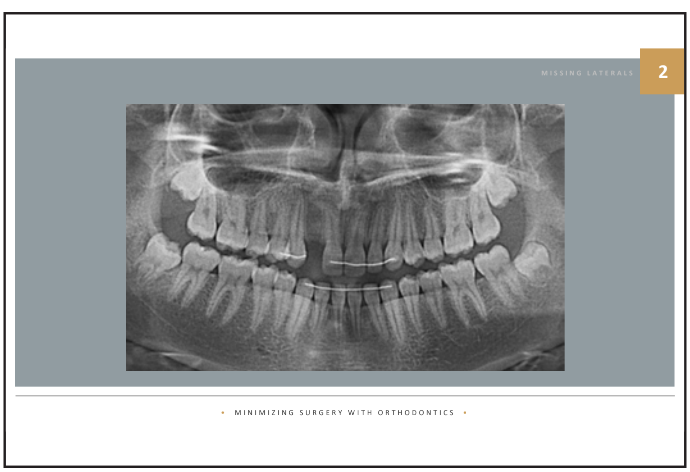
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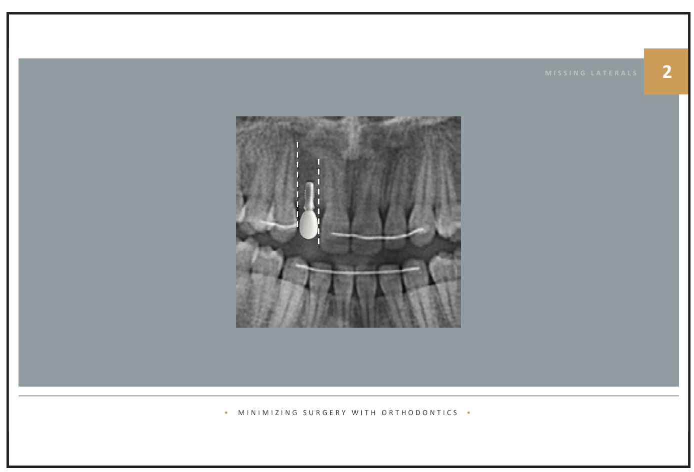
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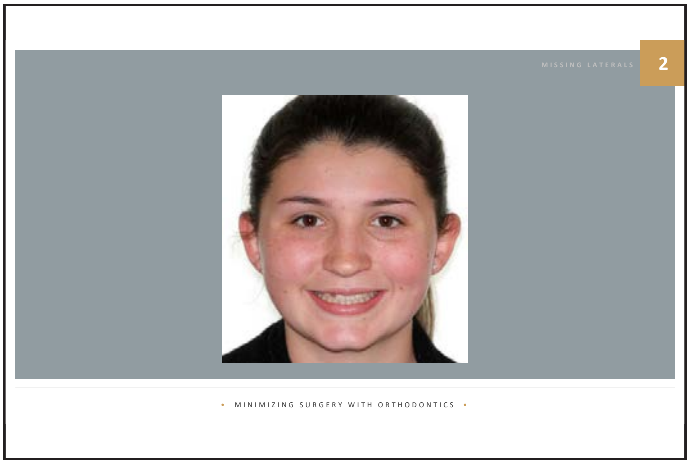
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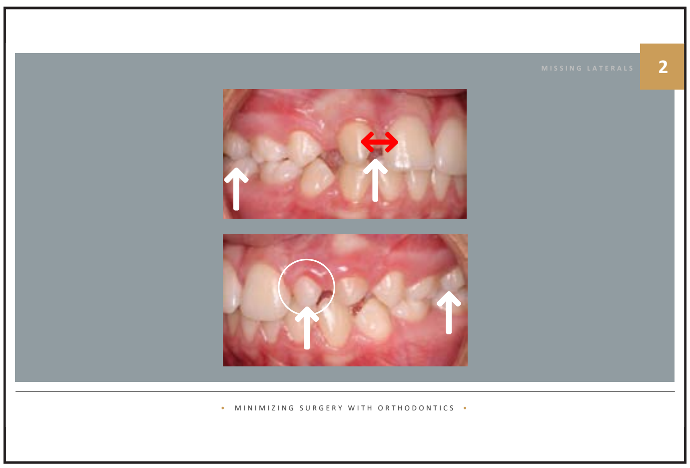
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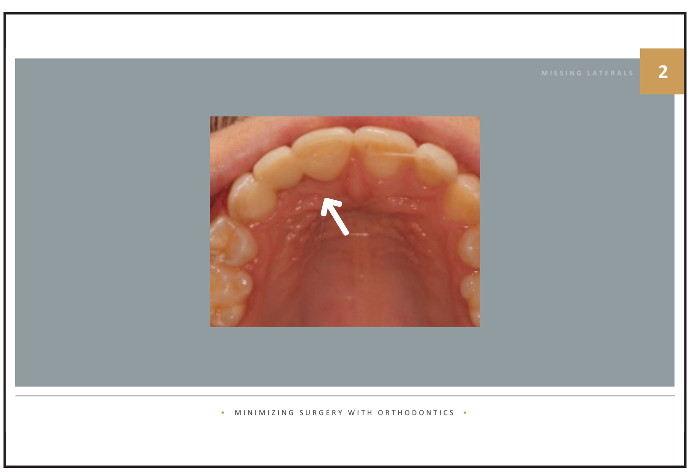
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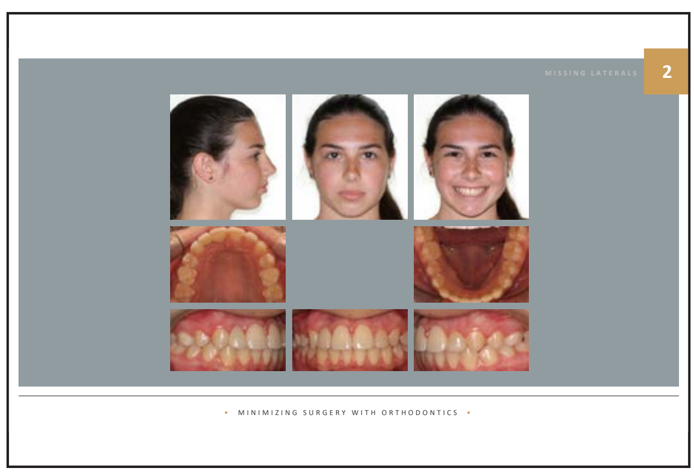
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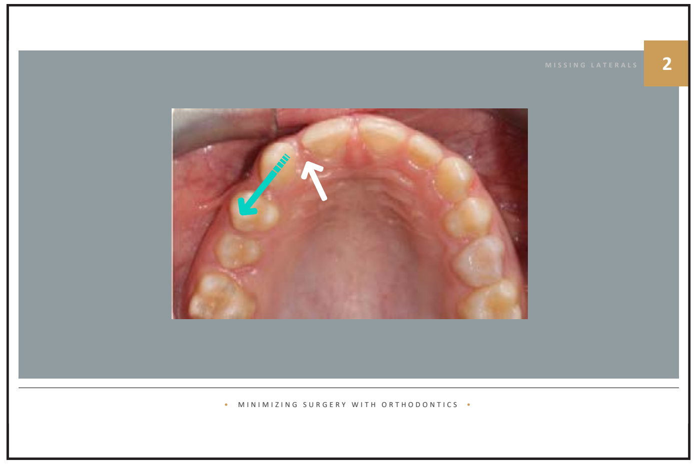
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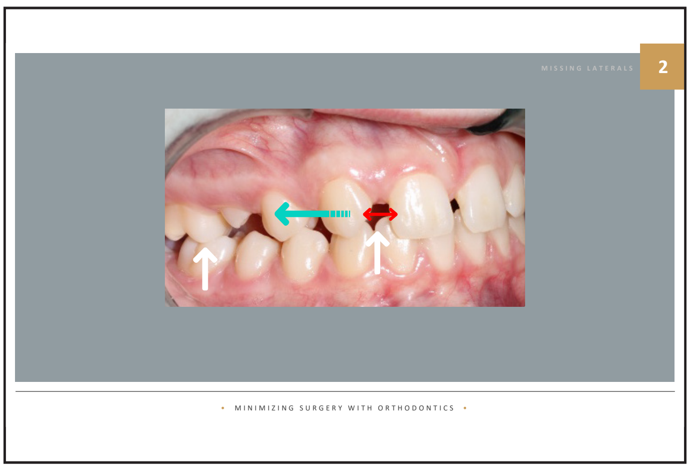
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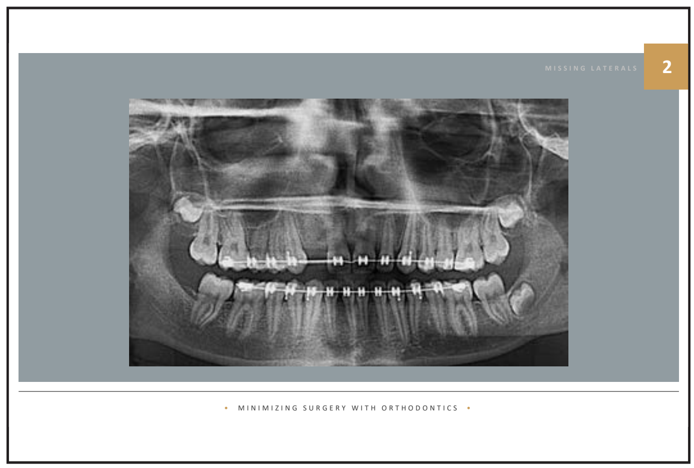
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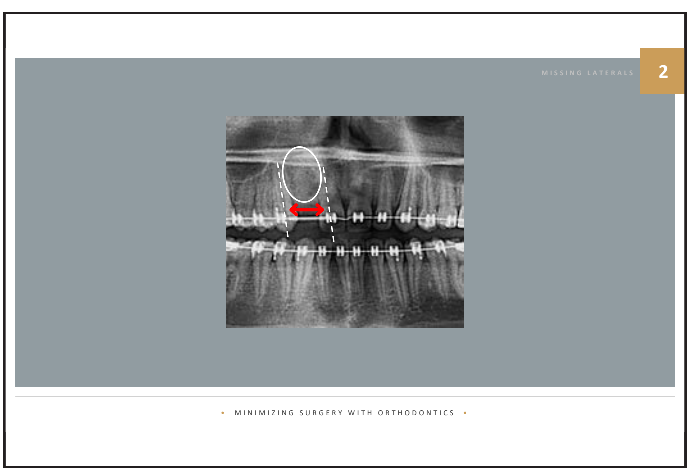
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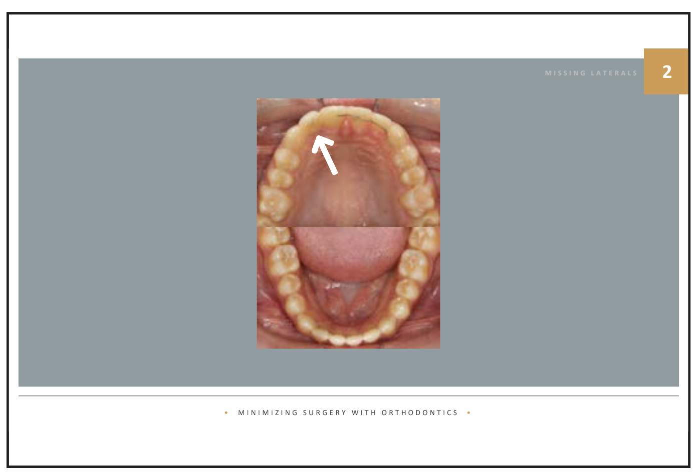
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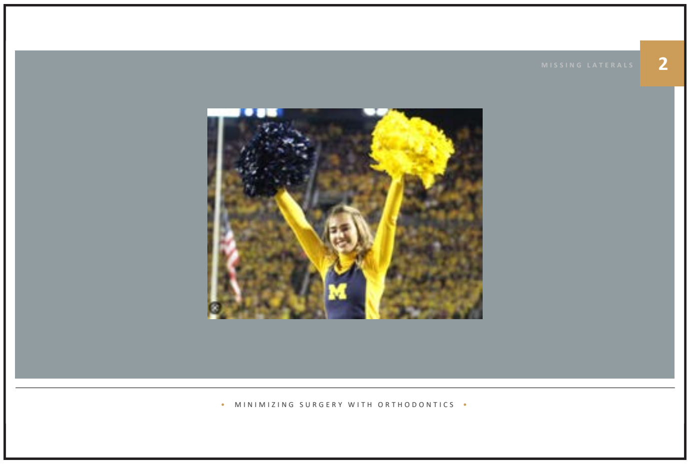
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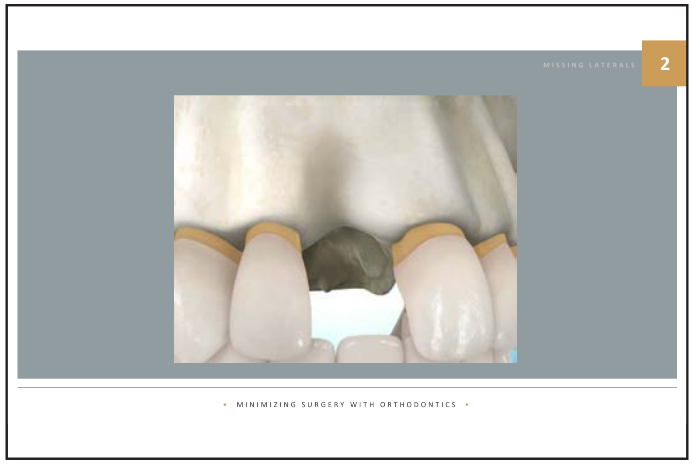
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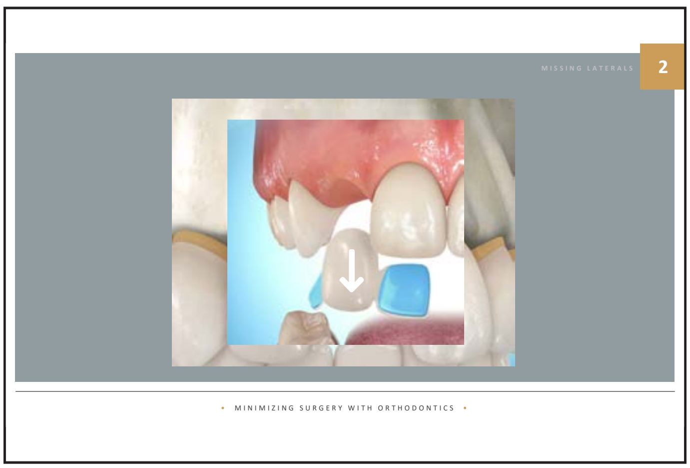
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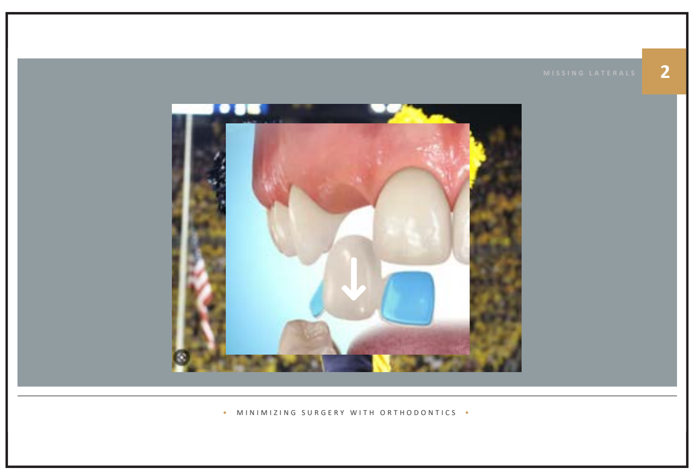
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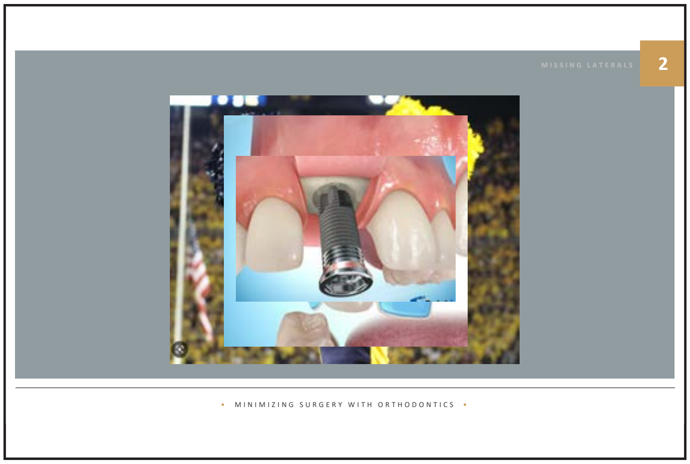
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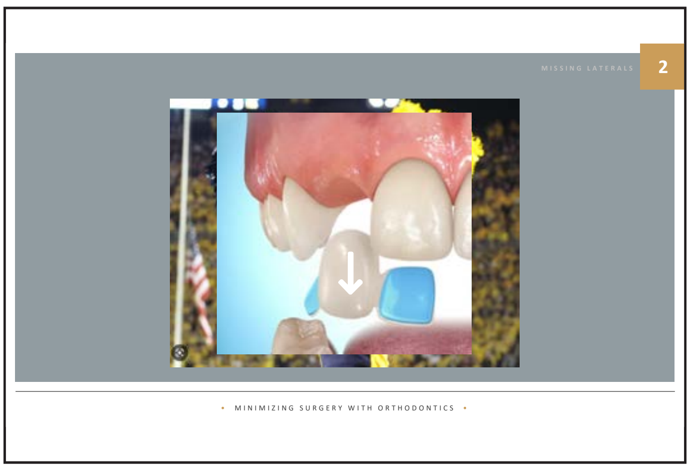
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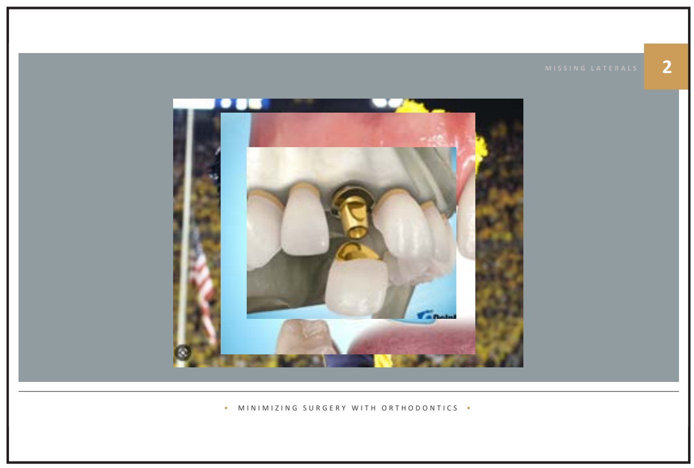
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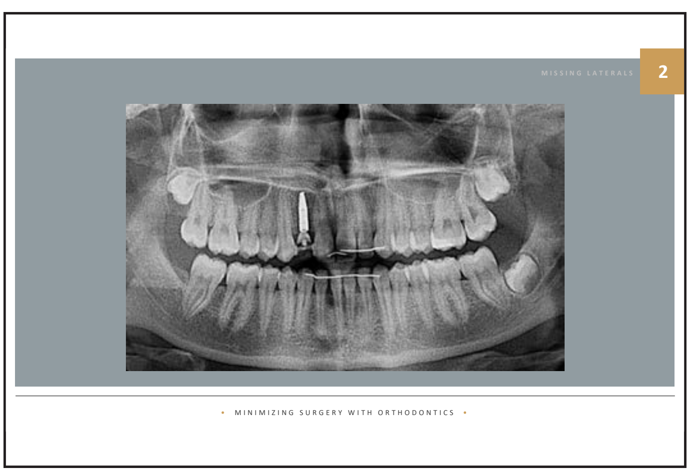
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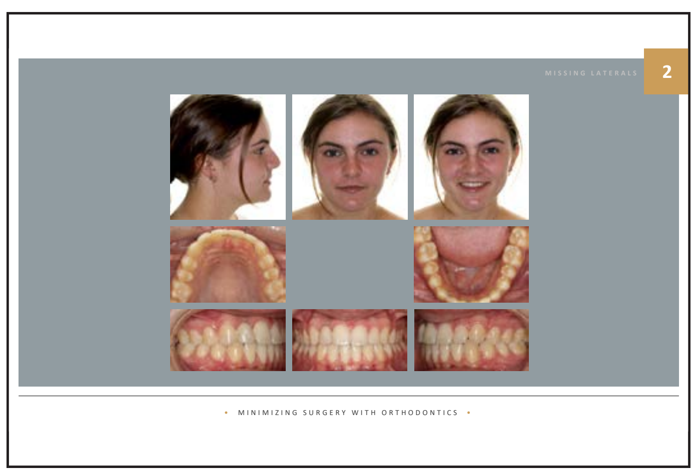
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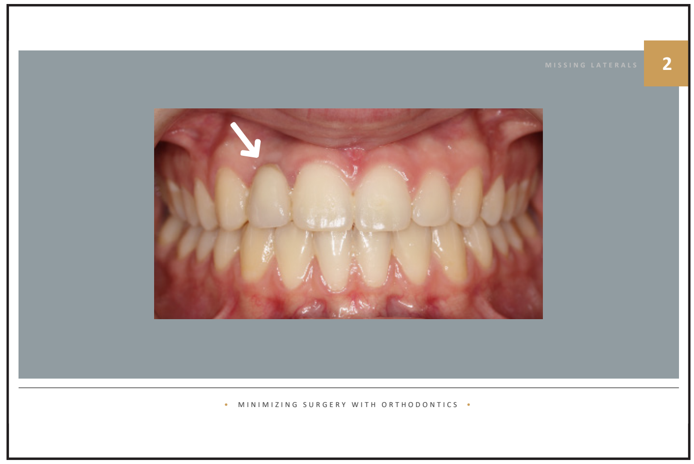
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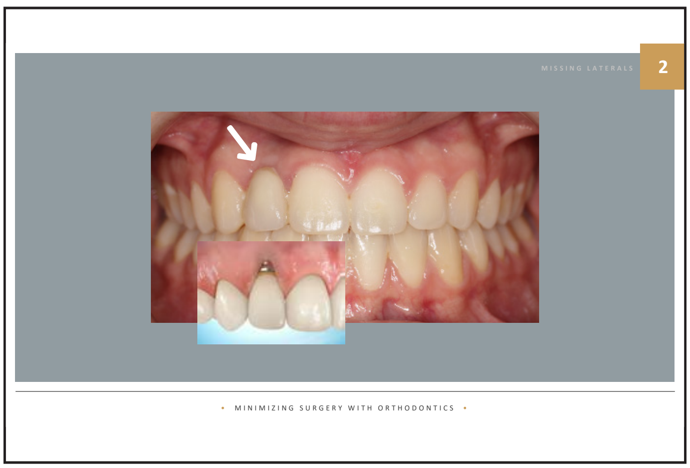
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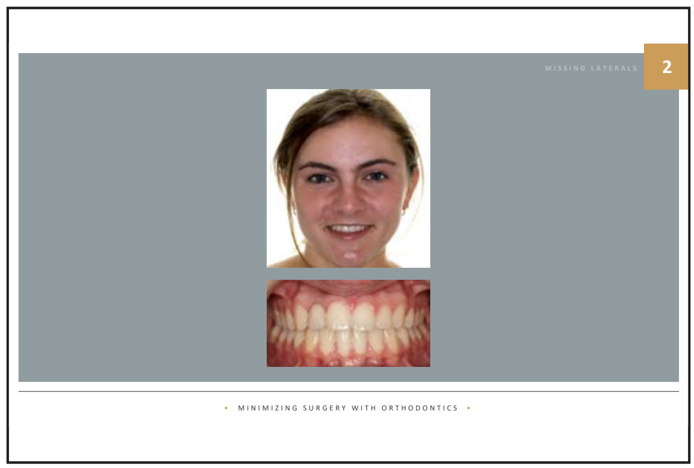
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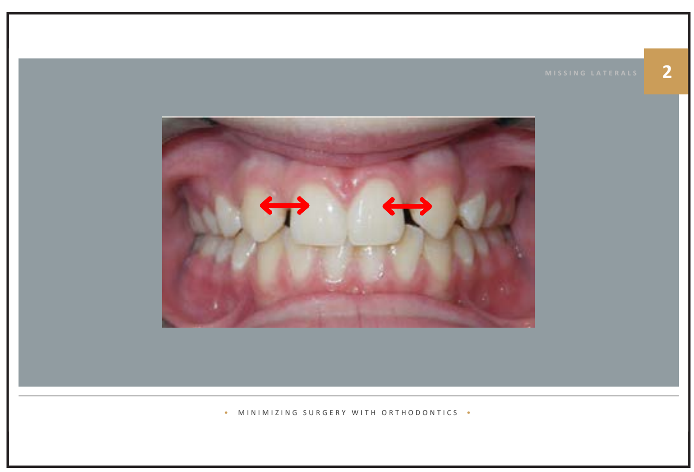
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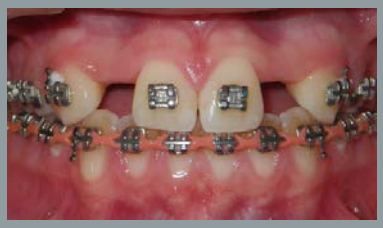

• MINIMIZING SURGERY WITH ORTHODONTICS •

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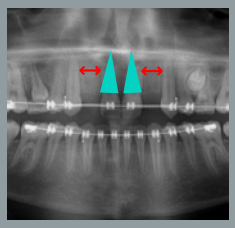

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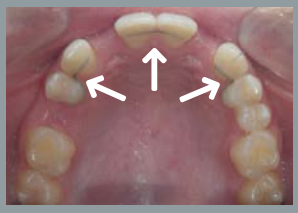

Retention For Flipper

• MINIMIZING SURGERY WITH ORTHODONTICS •

MISSING LATERALS 2

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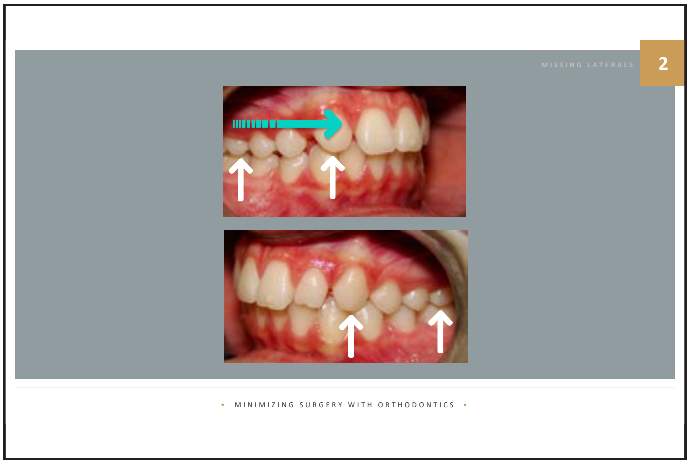
• MINIMIZING SURGERY WITH ORTHODONTICS •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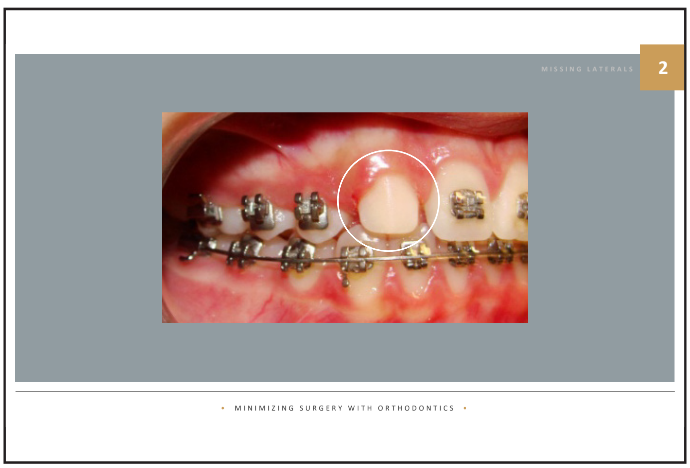
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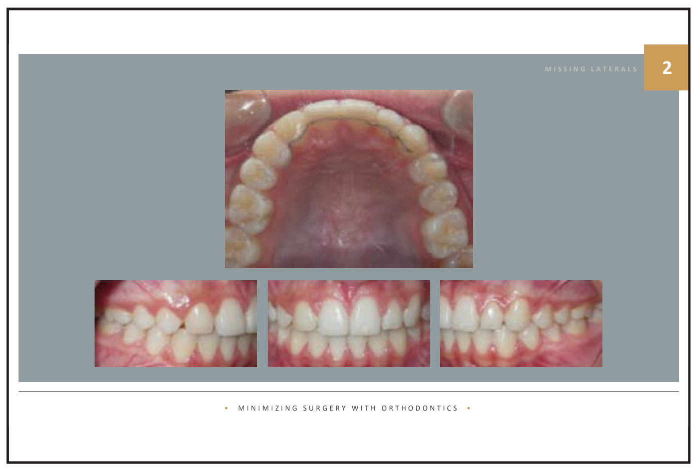
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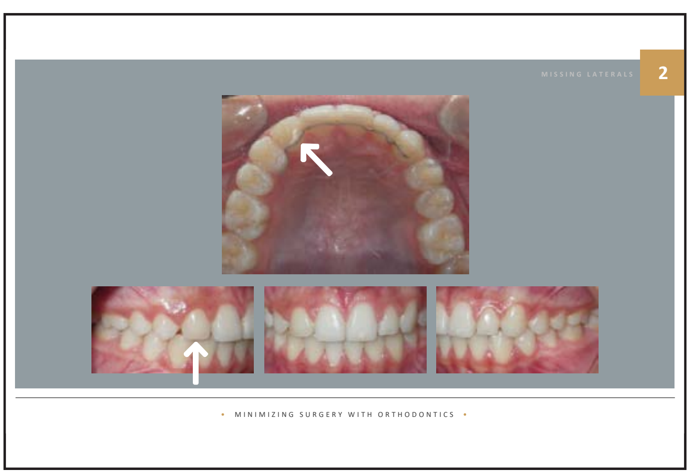
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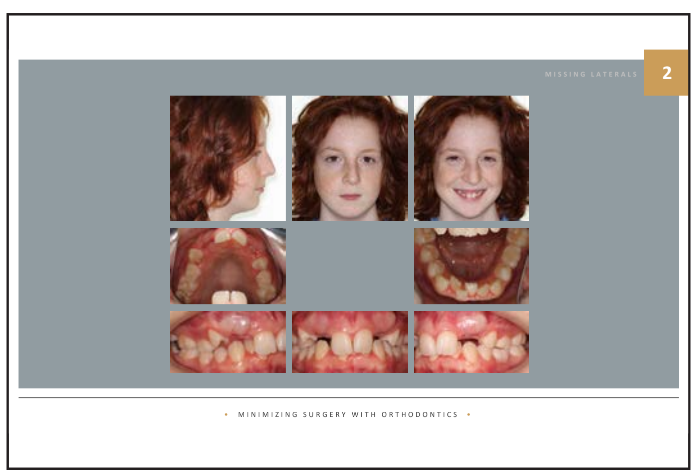
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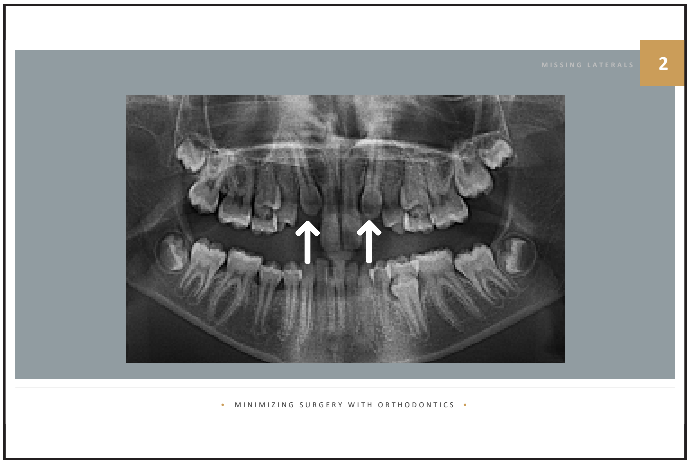
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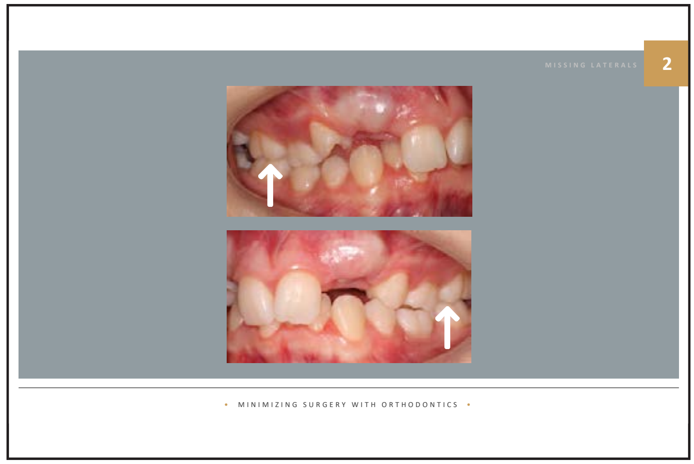
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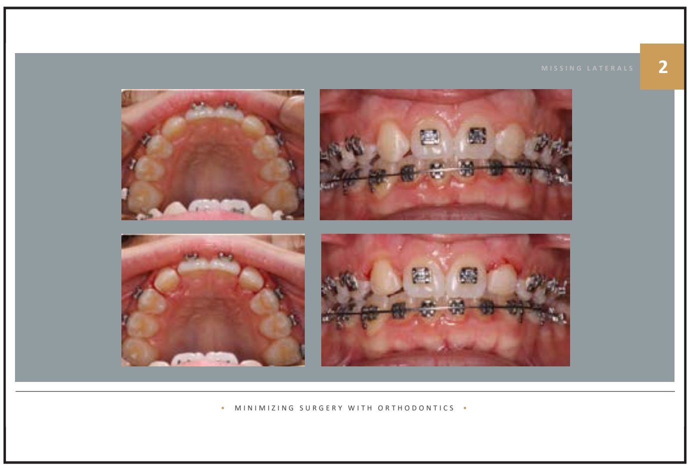
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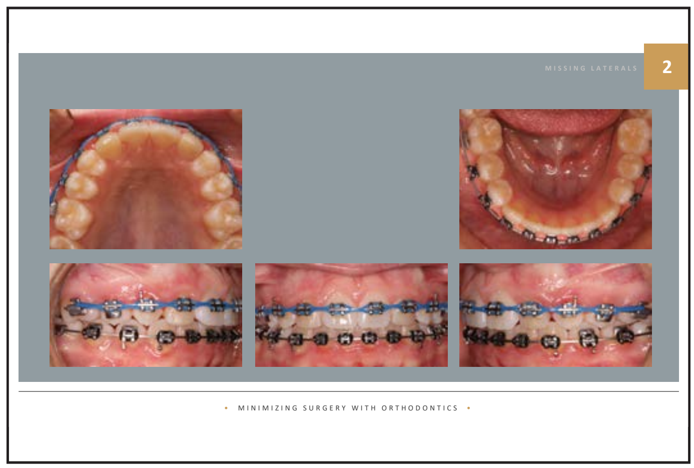
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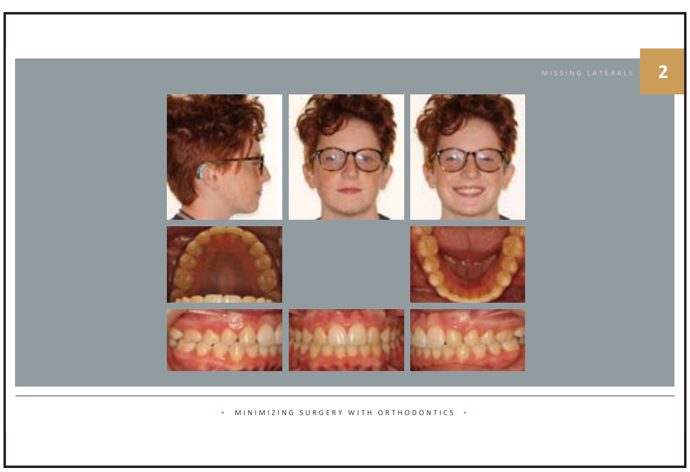
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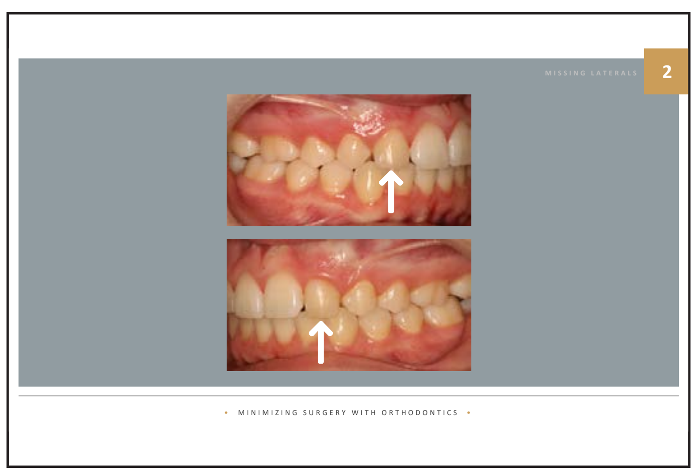
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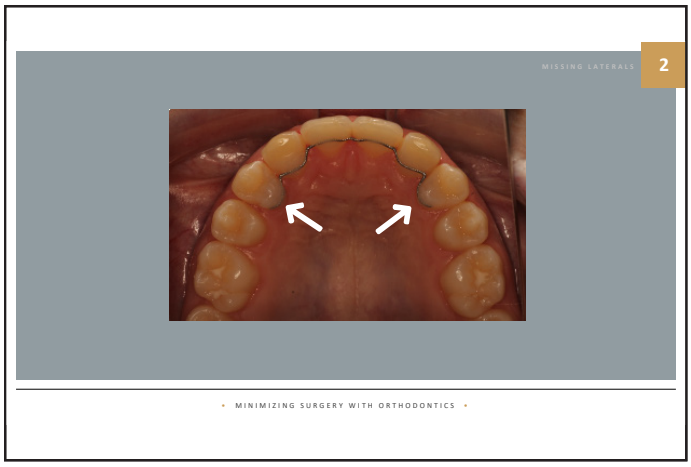
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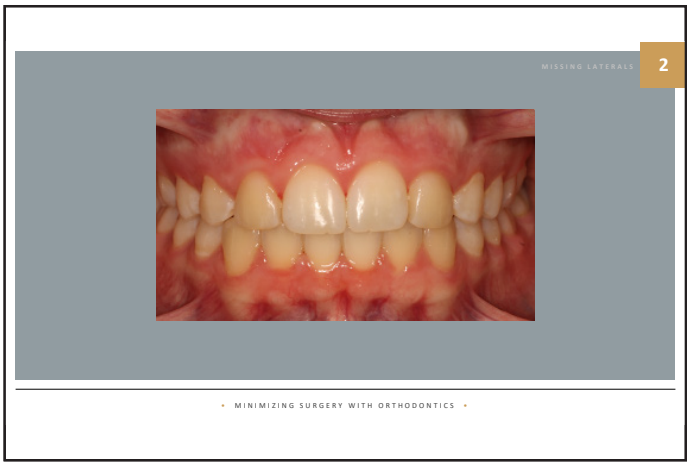
• MINIMIZING SURGERY WITH ORTHODONTICS •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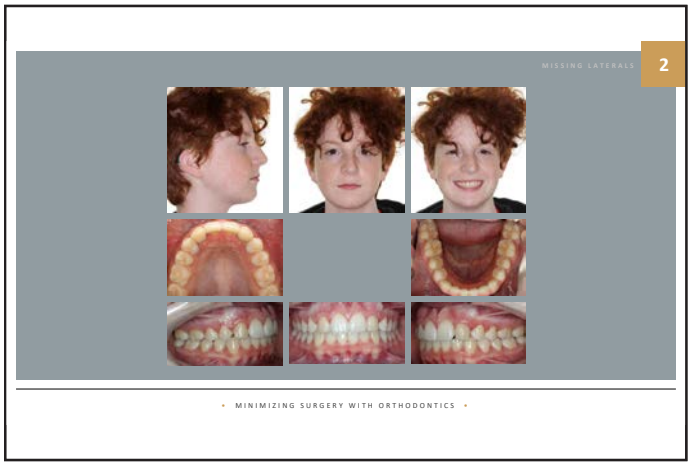
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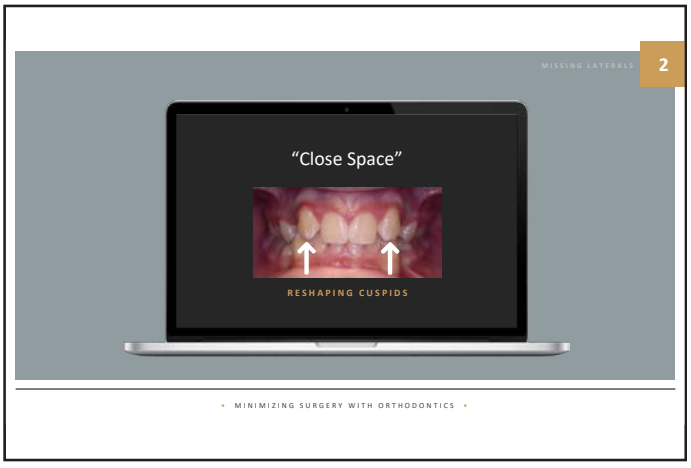
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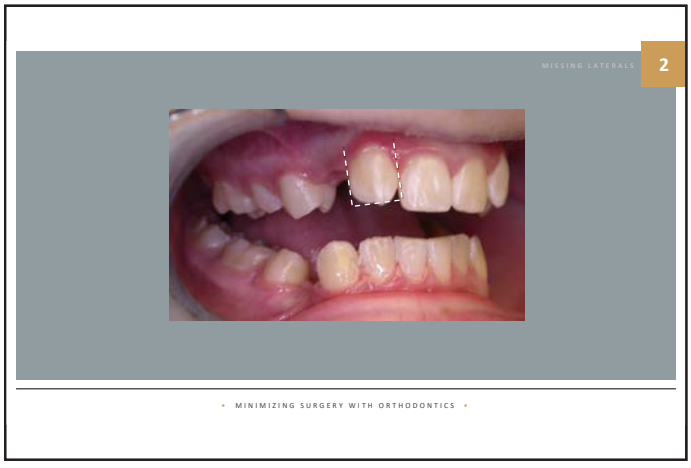
"Close Space"
RESHAPING CUSPIDS
• MINIMIZING SURGERY WITH ORTHODONTICS •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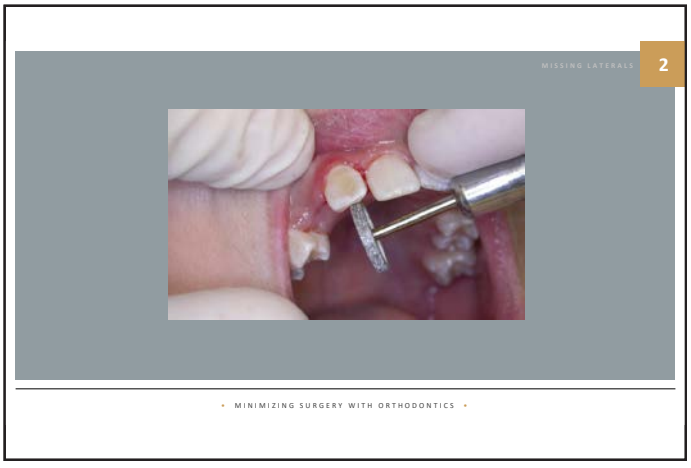
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• MINIMIZING SURGERY WITH ORTHODONTICS •


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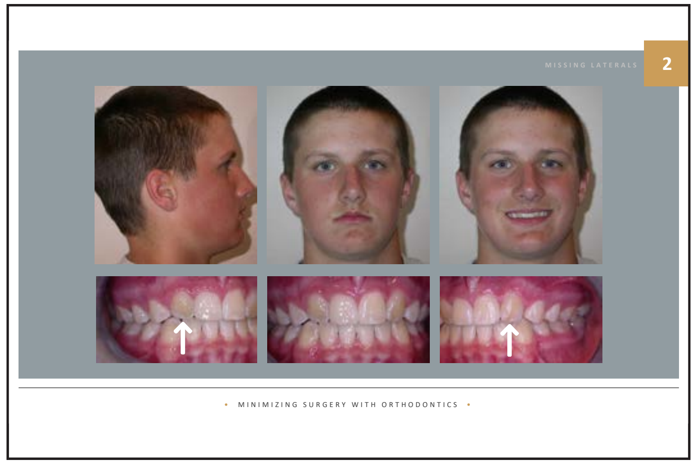
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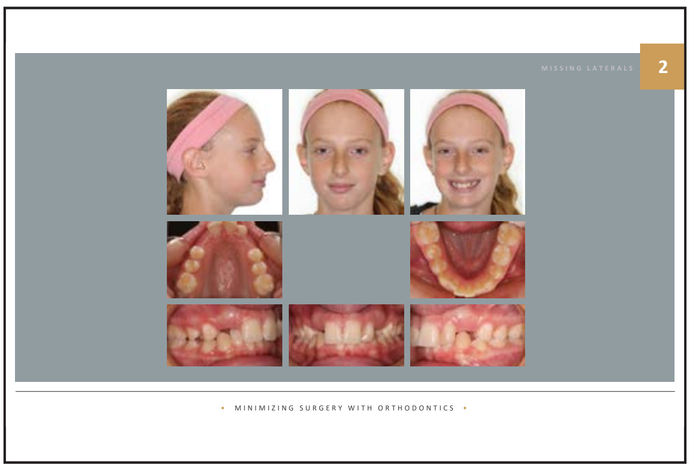
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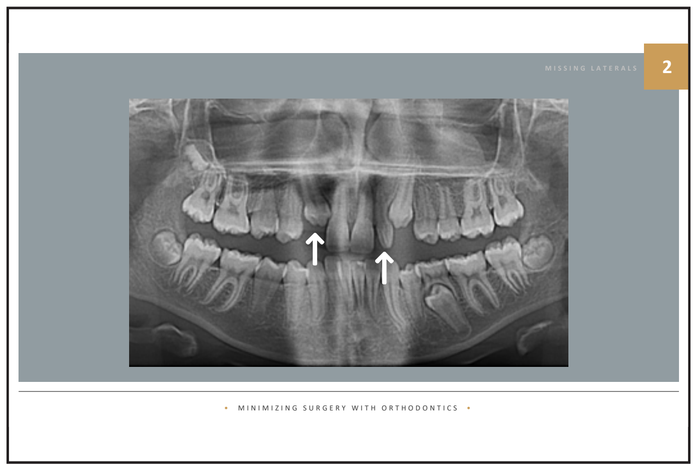
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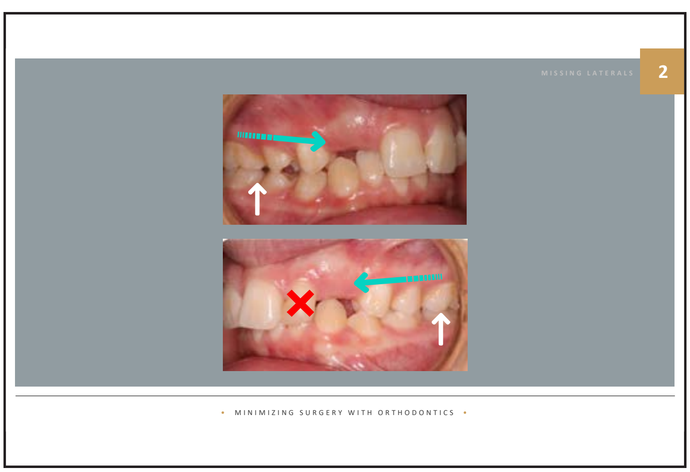
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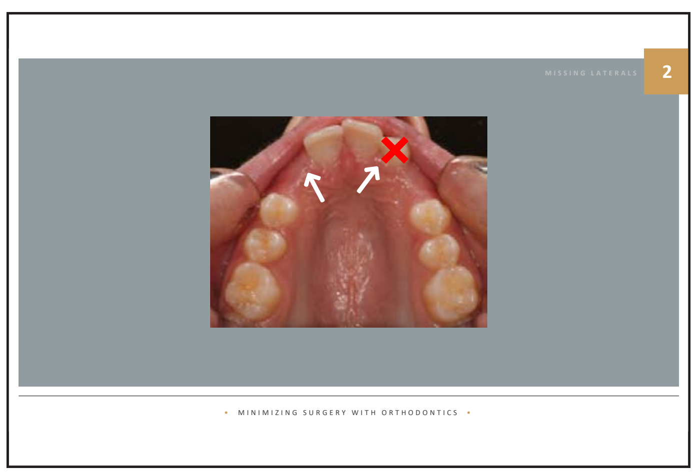
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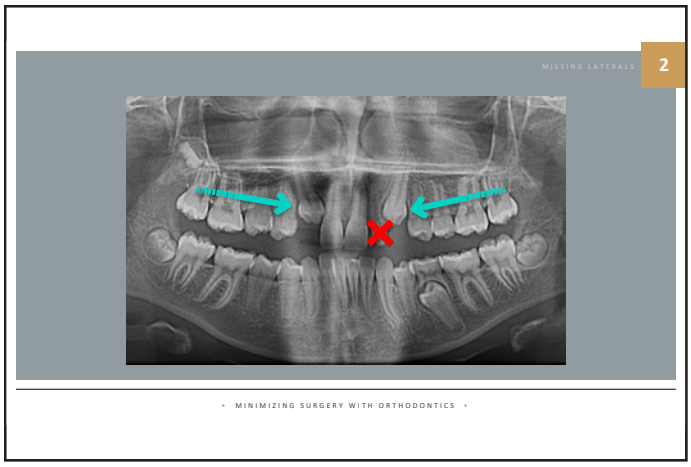
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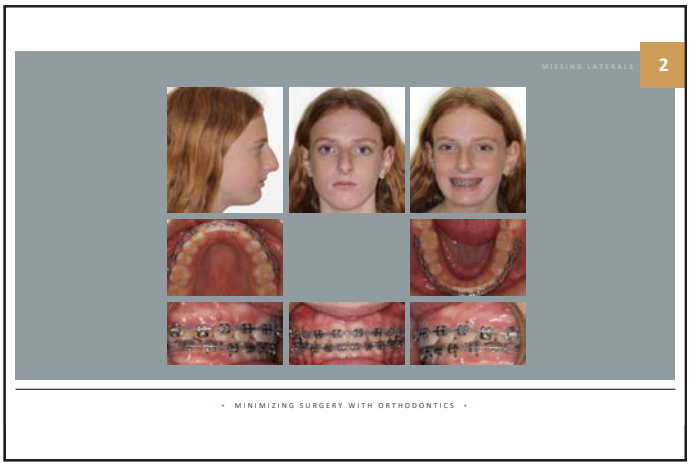
• MINIMIZING SURGERY WITH ORTHODONTICS •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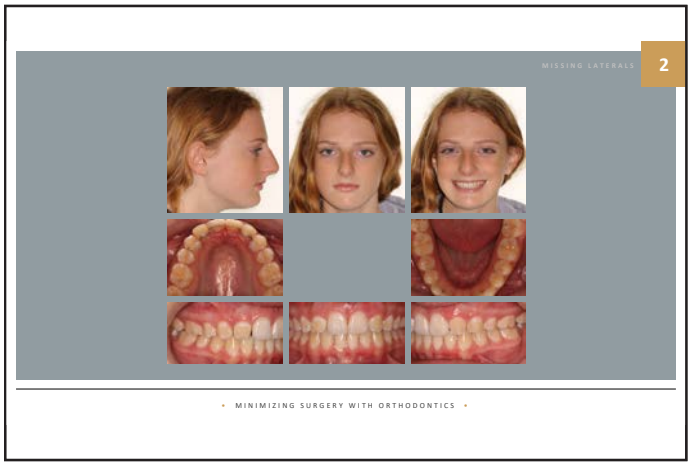
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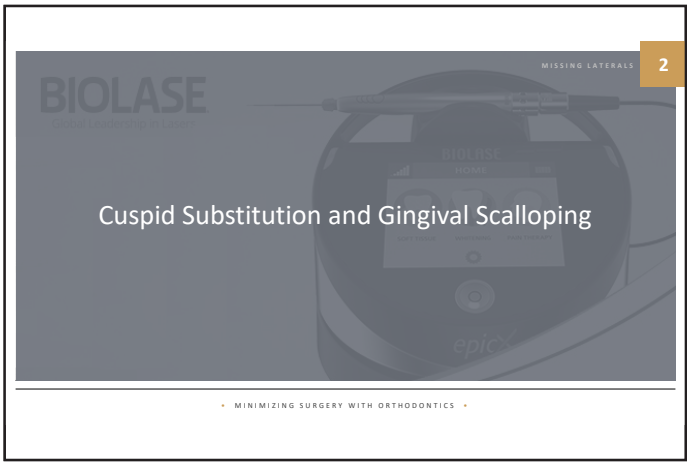
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BIOLASE
Global Leadership in Lasers
Cuspid Substitution and Gingival Scalloping
• MINIMIZING SURGERY WITH ORTHODONTICS •


MISSING LATERALS
Cuspid Substitution and Gingival Scalloping
2
• MINIMIZING SURGERY WITH ORTHODONTICS •


MISSING LATERALS
Cuspid Substitution and Gingival Scalloping
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• MINIMIZING SURGERY WITH ORTHODONTICS •

MISSING LATERALS
Cuspid Substitution and Gingival Scalloping

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MISSING LATERALS
Cuspid Substitution and Gingival Scalloping

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Cuspid Substitution and Gingival Scalloping

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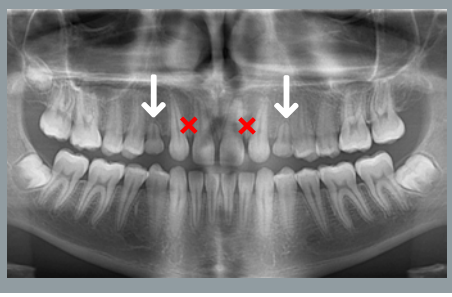

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MISSING LATERALS
Cuspid Substitution and Gingival Scalloping

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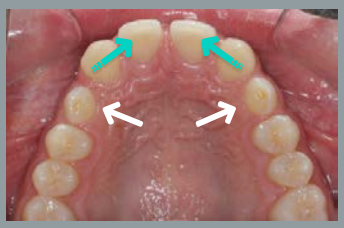

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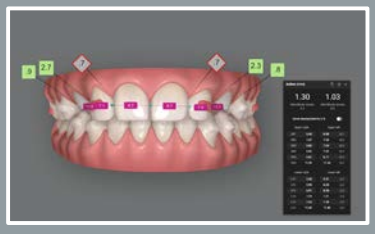

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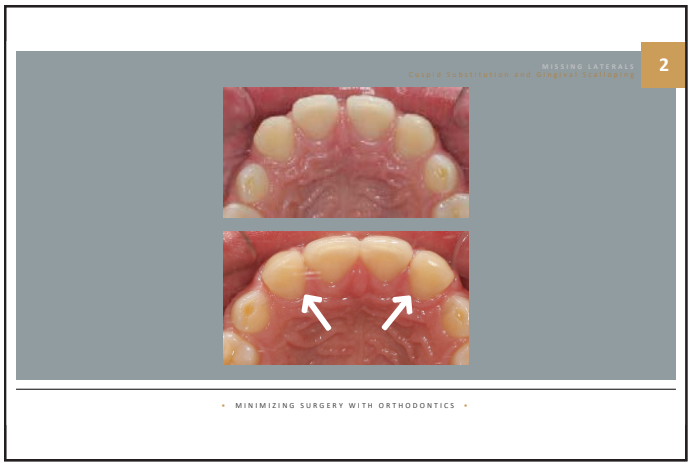
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Cuspid Substitution and Gingival Scalloping
2
MINIMIZING SURGERY WITH ORTHODONTICS


MISSING LATERALS
Cuspid Substitution and Gingival Scalloping
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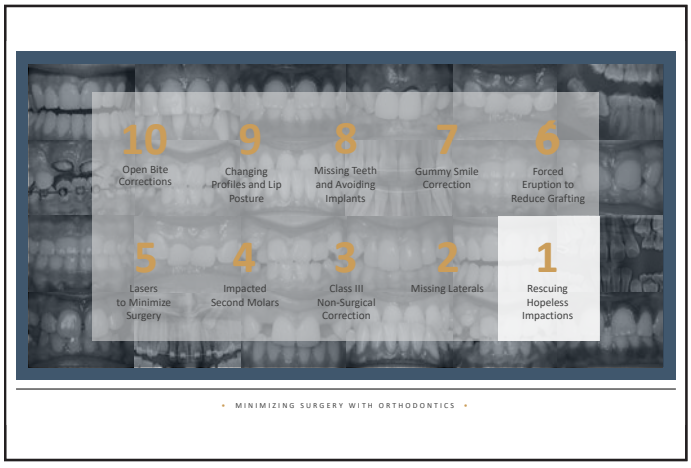
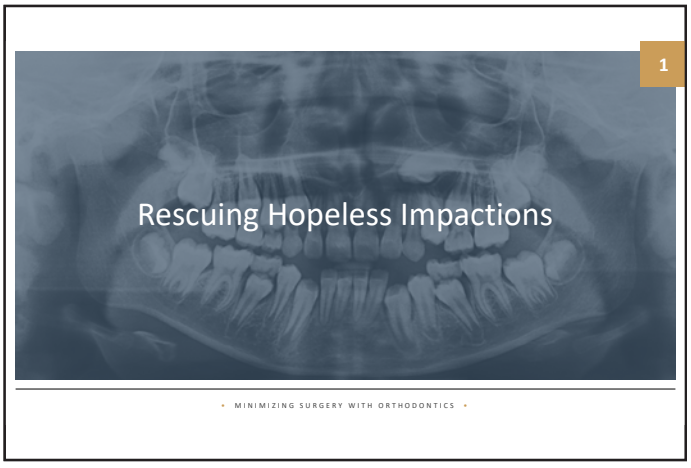
No Maryland Bridge!
No Grafting for an Implant!
Bond Deciduous Cuspid!
Great Spot for an Implant
MINIMIZING SURGERY WITH ORTHODONTICS


10 Open Bite Corrections
9 Changing Profiles and Lip Posture
8 Missing Teeth and Avoiding Implants
7 Gummy Smile Correction
6 Forced Eruption to Reduce Grafting
5 Lasers to Minimize Surgery
4 Impacted Second Molars
3 Class III Non-Surgical Correction
2 Missing Laterals
1 Rescuing Hopeless Impactions
MINIMIZING SURGERY WITH ORTHODONTICS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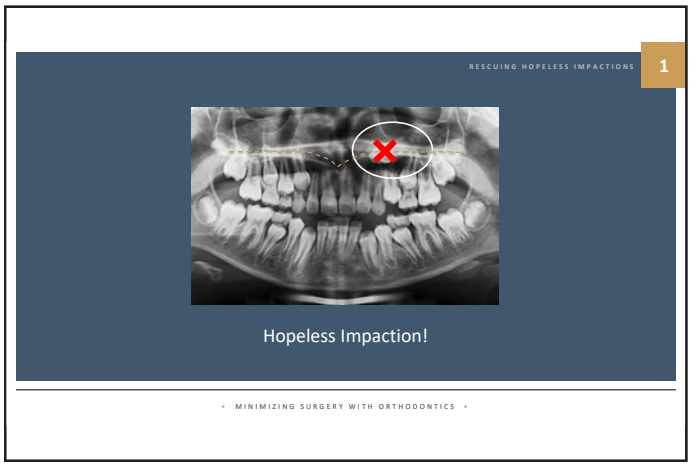
Rescuing Hopeless Impactions
MINIMIZING SURGERY WITH ORTHODONTICS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Hopeless Impaction!
MINIMIZING SURGERY WITH ORTHODONTICS


RESCUING HOPELESS IMPACTIONS
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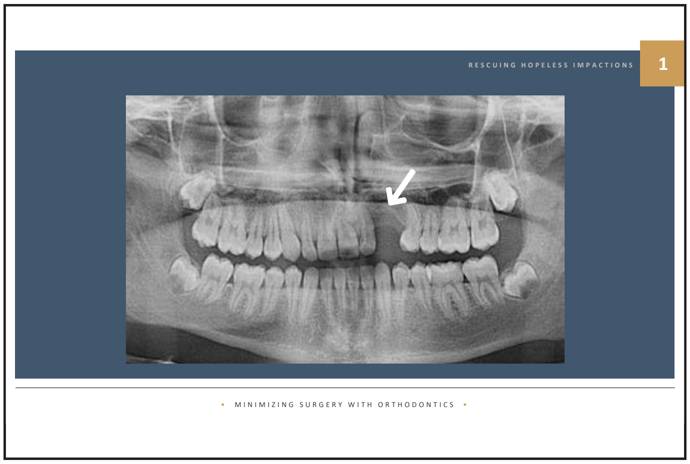
MINIMIZING SURGERY WITH ORTHODONTICS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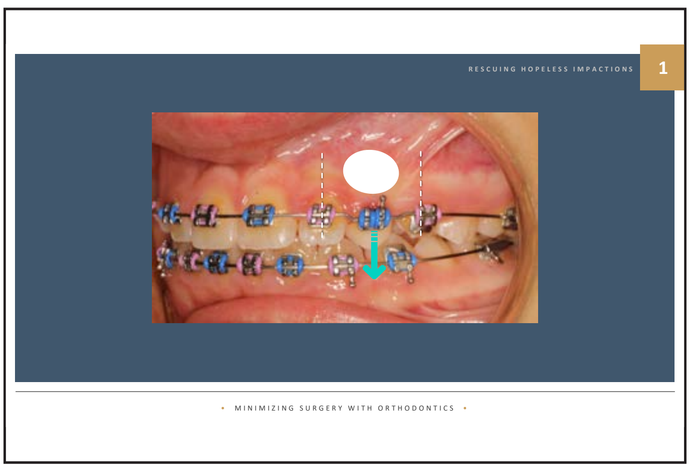
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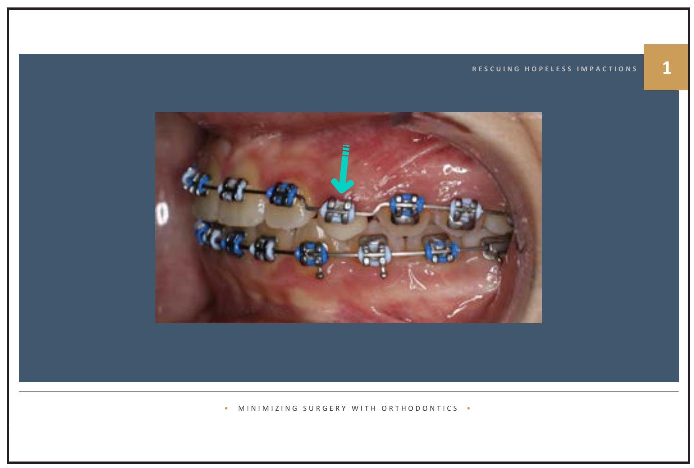
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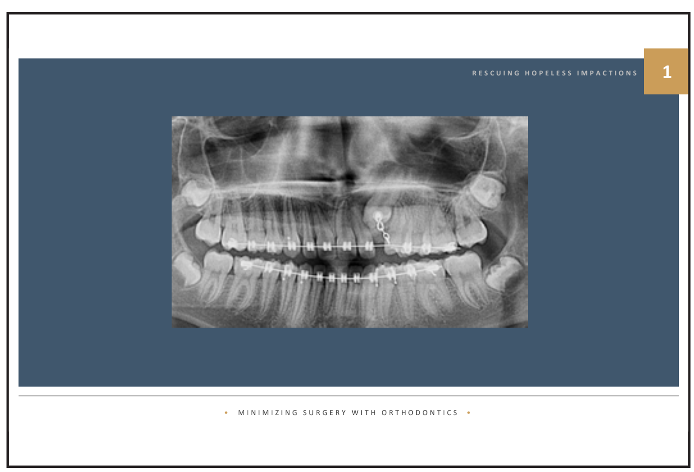
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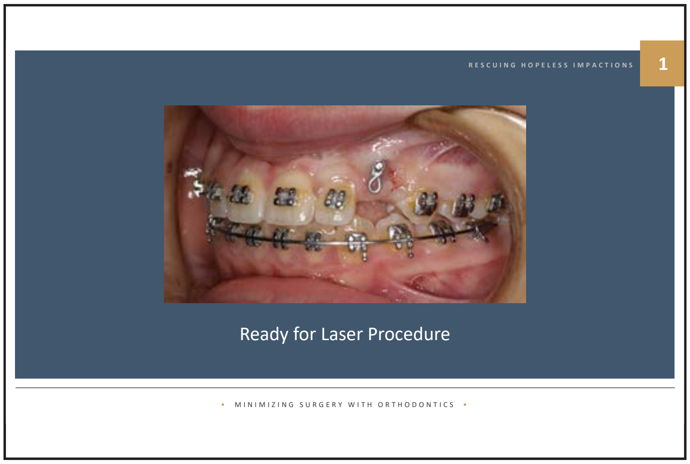
RESCUING HOPELESS IMPACTIONS
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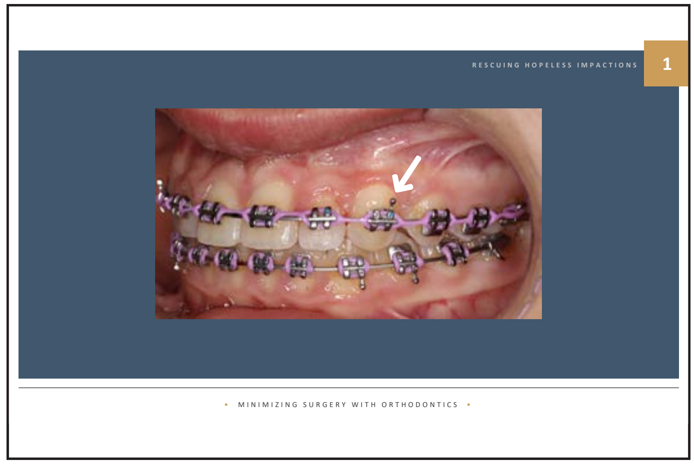
Ready for Laser Procedure
MINIMIZING SURGERY WITH ORTHODONTICS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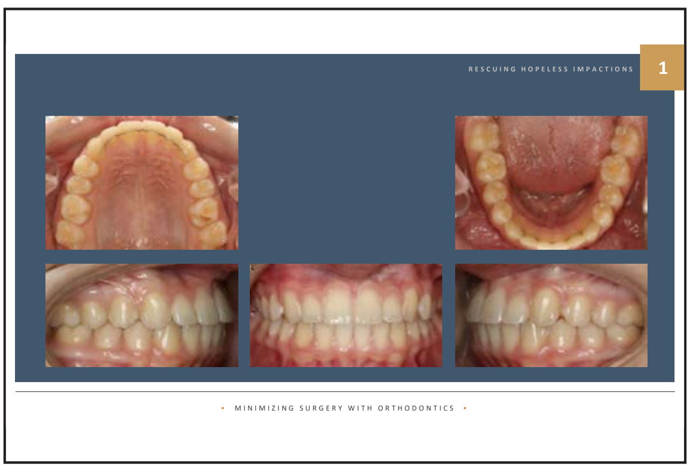
MINIMIZING SURGERY WITH ORTHODONTICS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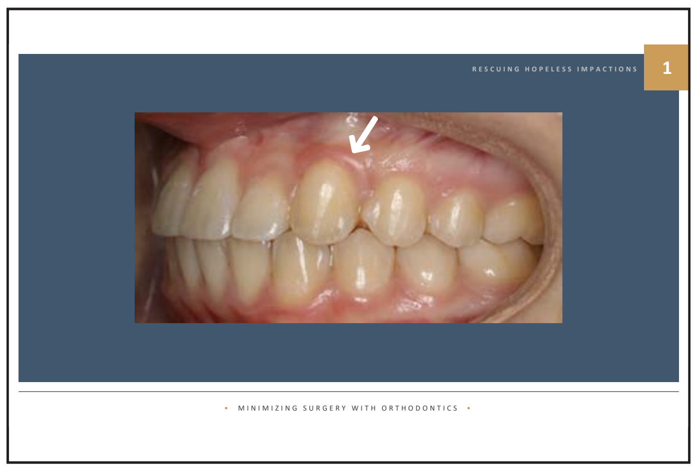
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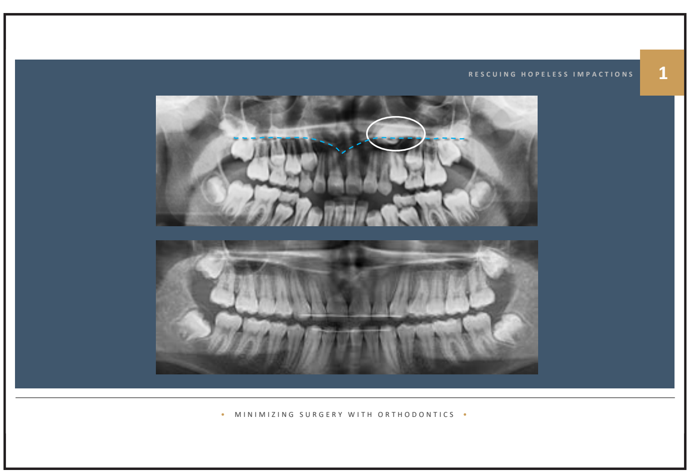
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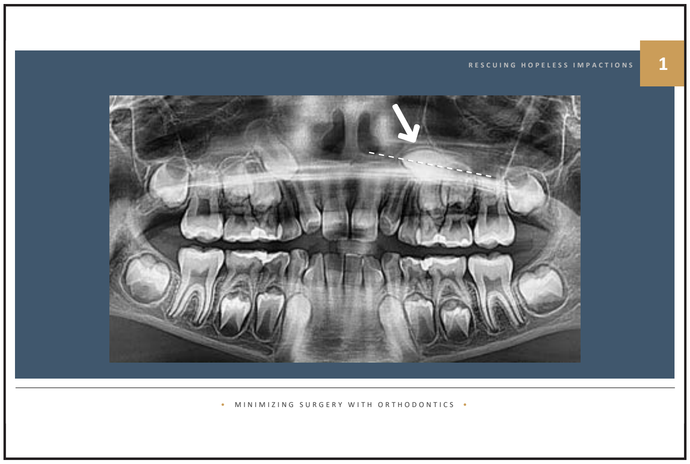
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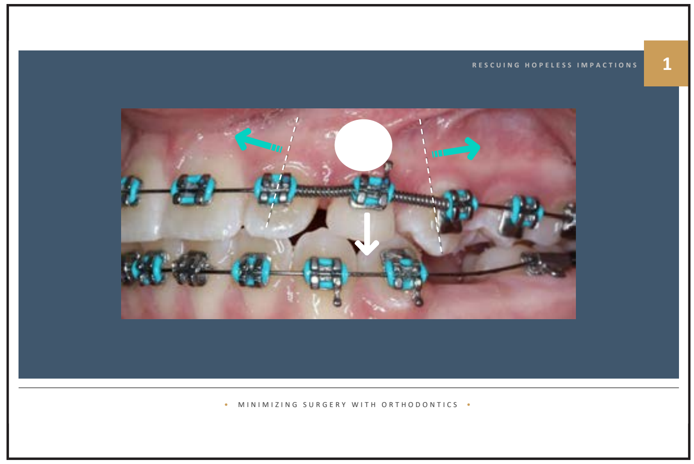
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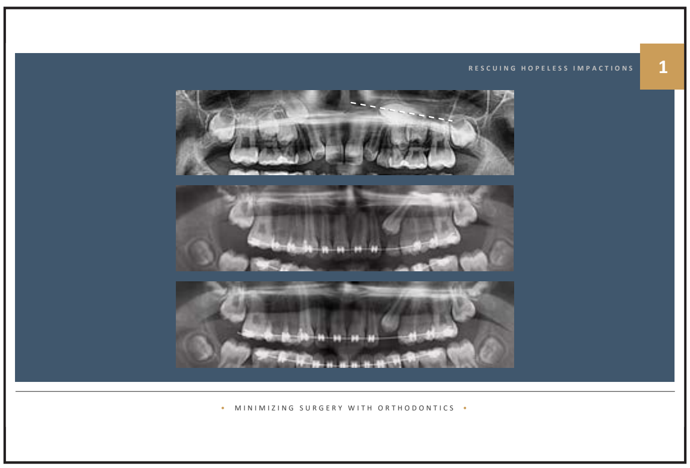
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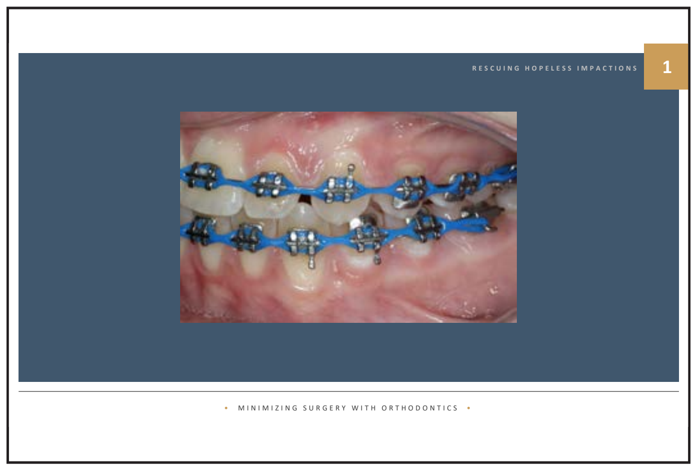
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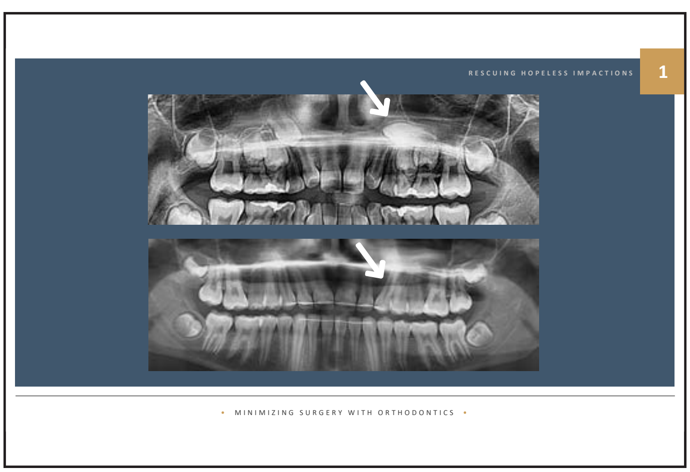
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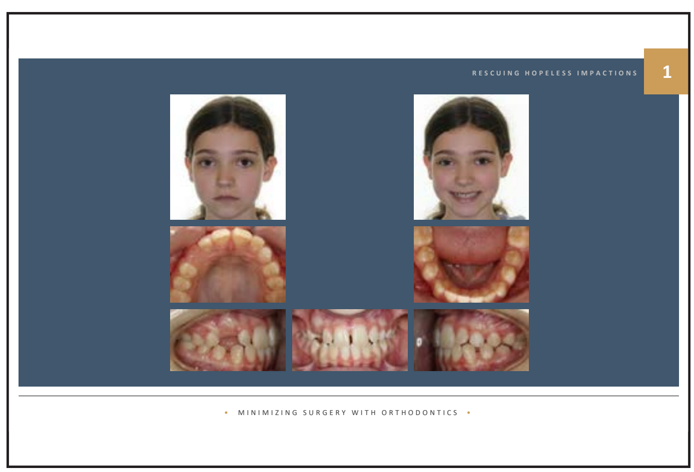
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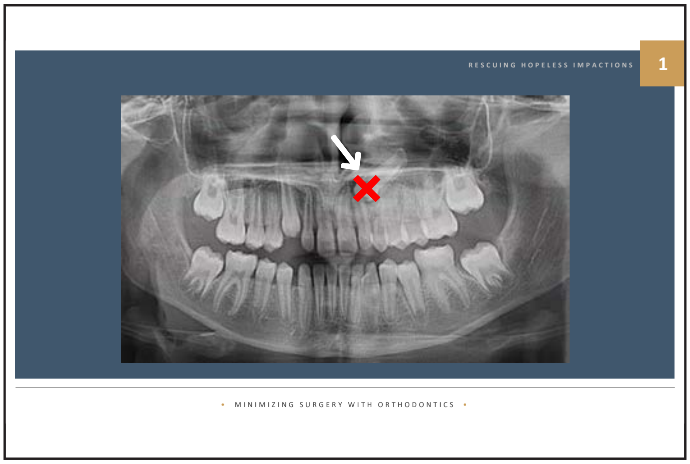
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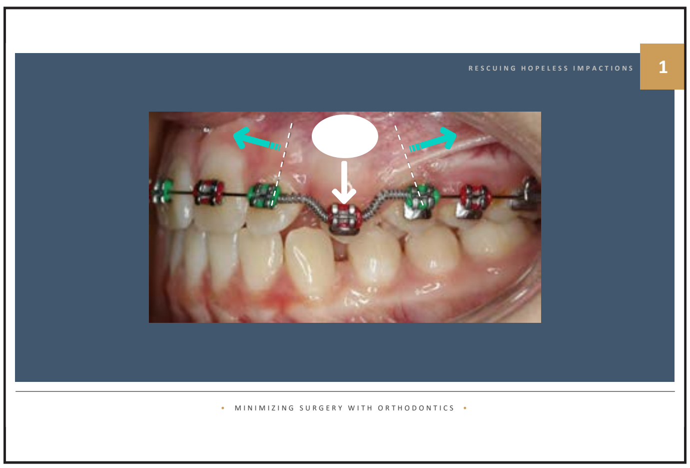
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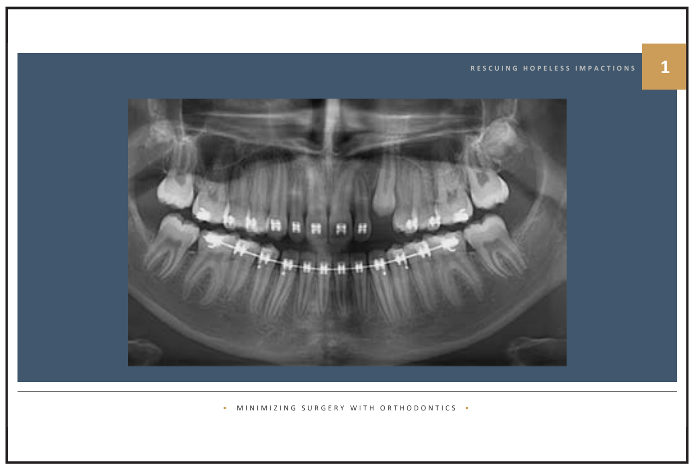
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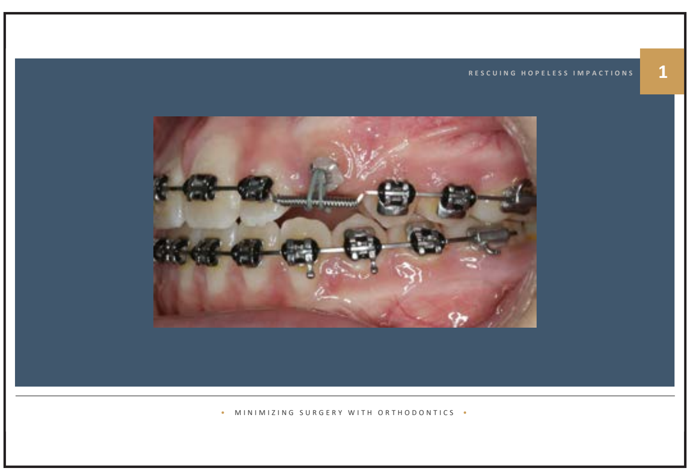
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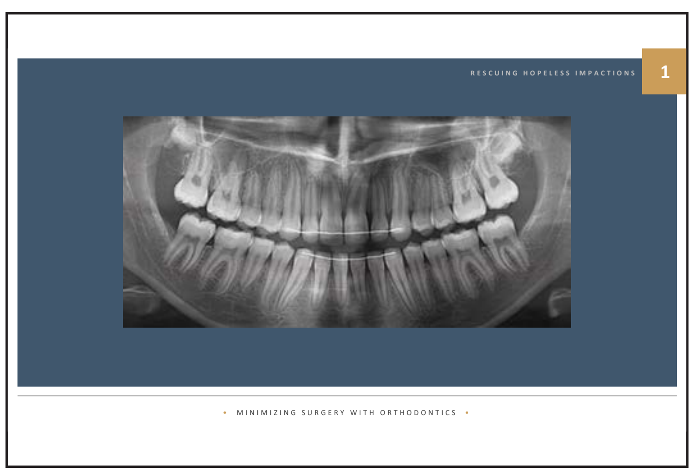
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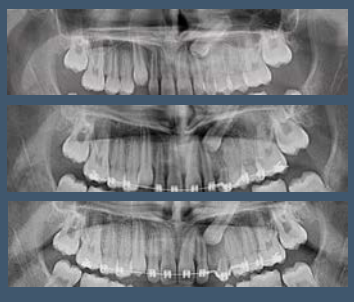

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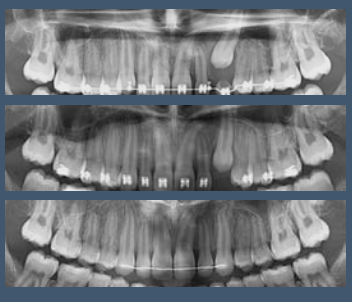

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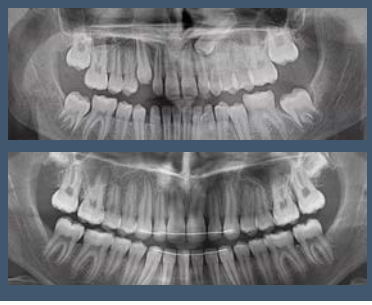

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SELF EVALUATION

Minimizing Surgery with Orthodontics – Part 2

True/False

1. Soft tissue laser exposures should only be done by a periodontist.

2. Laser procedures during Invisalign treatment can often help with aligner success and predictability.

3. The only way to treat a severely impacted second molar is to extract it, and allow the third molar to erupt in its place.

4. Extraction treatment can be used to correct Class III malocclusions and avoid orthognathic surgery.

5. If an adolescent patient is missing their maxillary lateral incisors, we often choose to open space and prepare the areafor implants. When we choose this treatment option, the patient will most likely need a bone graft prior to implant placement

6. If a patient has a severely impacted cuspid, we will always need to do a surgical exposure in order to erupt the cuspid into the arch

7. If a cuspid is causing root resorption to the apex of a lateral incisor, usually the best treatment option is the extract the cuspid or to extract the lateral incisor

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

Eric J. Ploumis, DMD, JD

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

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

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453 Second Avenue
New York, NY 10010
EPloumis@DentalPracticeLawyers.com

Understanding Standard of Care and Informed Consent

Why am I Speaking to You Today?

- We are going to review Informed Consent and its importance to your practice.
- We will discuss what defines the Standard of Care and how that standard is set.

1

Informed Consent: Objectives

- We will review the legal requirements for effective informed consent
- We will understand how to obtain effective informed consent
- We will discuss exceptions to the rules for obtaining informed consent

2

Standard of Care: Objectives

- We will explore the concept of Standard of Care
- We will discuss how the standard of care is determined
- You will understand what the standard of care is and how to meet that standard.

3

I. Informed Consent for Dental Procedures

4

Is what we are doing even dentistry?

5

Practice of Dentistry: New York

NYS Ed Article 133, 6601: The practice of the profession of dentistry is defined as diagnosing, treating, operating, or prescribing for any disease, pain, injury, deformity, or physical condition of the oral and maxillofacial area related to restoring and maintaining dental health.

Practice of Dentistry: Arizona

32-1202. Scope of practice; practice of dentistry

The practice of dentistry is the diagnosis, surgical or nonsurgical treatment and performance of related adjunctive procedures for any disease, pain, deformity, deficiency, injury or physical condition of the human tooth or teeth, alveolar process, gums, lips, cheek, jaws, oral cavity and associated tissues, including the removal of stains, discolorations and concretions.

7

Practice of Dentistry: California

Healing Arts, Article 2 1625

Healing Arts, Article 2, section 1625

Dentistry is the diagnosis or treatment, by surgery or other method, of diseases and lesions and the correction of malpositions of the human teeth, alveolar process, gums, jaws, or associated structures; and such diagnosis or treatment may include all necessary related procedures as well as the use of drugs, anesthetic agents, and physical evaluation.

8

Practicing Outside the Scope

If you are performing procedures that don't conform to the definition of the practice of dentistry in your state, you are committing a battery.

9

without Informed Consent you have committed a Battery

- Assault and Battery: the unlawful and unpermitted touching of another.
- Assault is an act that creates an apprehension in another of an imminent, harmful, or offensive contact.
- Battery is a harmful or offensive touching of another.

10

Botox? Facelift? Tattoo Removal? Skin Care?

. . . human tooth or teeth, alveolar process, gums, lips, cheek, jaws, oral cavity and associated tissues . . .

California recognizes the tort of medical battery, the offensive or harmful touching of another person without consent.

13

Informed Consent NY:
Public Health Law Article 28

Lack of informed consent means the failure of the person providing the professional treatment or diagnosis to disclose the patient the alternatives and reasonably foreseeable risks and benefits involved, permitting the patient to make a knowledgeable evaluation.

Informed Consent: Arizona

36-501. “Informed consent” means a voluntary decision following presentation of all facts necessary to form the basis of an intelligent consent by the patient or guardian with no minimizing of known dangers of any procedures

15

AAO Definition:
What is Informed Consent:

The legal doctrine of informed consent requires that patients, after being fully informed of such things as the proposed treatment and the related benefits, risks and consequences, consent to treatment before an orthodontist administers treatment to that patient. This requirement includes the obligation to disclose information to the patient.

16

The legal requirements for informed consent require that certain information be disclosed to the patient and specify how consent should be obtained. The generally accepted rule is that the orthodontist must inform the patient of the nature, purpose, risks and benefits of any treatment he/she proposes to perform, chances of success with proposed treatment as well as any alternative forms of treatment that may exist for the patient’s conditions and risks of not undergoing treatment. [Informed Refusal]

17

The orthodontist should disclose all of the information that a reasonable and prudent person would find material to making a decision and that a reasonable practitioner would make under the same or similar circumstances. To determine what a reasonable patient would find material to making a decision, doctors are compelled to engage in a discussion with each patient. This is an idealized version of how informed consent operates under the patient-oriented standard.

18

AAPD Definition

Informed consent is the process of providing the patient or, in the case of a minor or incompetent adult, the parent, with relevant information regarding diagnosis and treatment needs so that an educated decision regarding treatment can be made by the patient or parent.

19

Informed Consent

Would a *reasonably prudent* person in the patient's position have undergone the treatment if she had been fully informed or the risks, benefits, and options?

Exceptions to the need for IC:

- Risk is commonly known
- Patient would undergo treatment anyway
- Patient did not want to be informed
- Consent not reasonably possible (emergency situation)
- Doctor's "therapeutic lie"

21

Who can give consent for treatment

- Over 18 for themselves
- Parent or legal guardian for a minor
- NY Public Health Law § 2504
  - Under 18 for themselves or their child if they are a parent
  - Under 18 for themselves if they are married
  - Pregnant mother for prenatal care no matter how old.

22

Who can give consent for a child?

- parent
- legal guardian
- doctor in an emergency situation

If you believe, in good faith, that a person has the ability to give you consent to treat a minor you are protected

23

What happens when a child turns 18?

- You must obtain the new adult's informed consent
- You must yield to patient's desire even if the parent feels differently

24

Documenting Informed Consent

- oral
- written but not signed
- written and signed
- ongoing

25

Informed Consent

Consent is appropriate when a reasonably prudent person in the patient's position would have undergone and accepted the procedure if he/she had been fully informed of the risks, benefits and costs.

26

Informed Consent

- Written
- Signed by patient, parent, or guardian
- Provided in a way that the patient can understand. (Translation may be required)
- Customized for the treatment plan
- Habitually noted in patient's chart
- Ongoing and updated

27

Supplemental Informed Consent

- Different procedures may require additional informed consent. There is no "one size fits all."
- Informed consent is ongoing. It is not "one and done."

28

Preventing a Lawsuit: Inform

Informed consent is *always* a cause of action in a malpractice suit.

For a cause of action based upon lack of informed consent, a reasonably prudent person in the patient's position would not have undergone the treatment or diagnosis if he/she had been fully informed.

29

- You don't need to use the specific pre-printed forms, but you do need to have a written informed consent for every procedure.
- All 50 states require informed consent
- Empower your staff to help you obtain informed consent.
- Take control of your office. Deference = risk.

30

Informed Refusal

- It is not enough to tell a patient what might happen if they undergo treatment
- You must also inform them of what might happen if they forgo treatment or do not follow your advice
- Document this as you would informed consent

31

Informed Consent

Consent is appropriate when a reasonably prudent person in the patient's position would have undergone and accepted the procedure if he/she had been fully informed of the risks, benefits and **costs**.

32

II. Standard of Care

33

Standard of Care

The level at which the **average, prudent provider / in a given community /** would practice. It is how a **similarly qualified practitioner /** would have managed the patient's care **under the same or similar circumstances**.

34

Standard of Care

The standard of care is not determined by any law, textbook, journal, speaker, professor, or dental society. It is determined during a malpractice trial by the triers of fact—the judge and jury. It often comes down to a battle of qualified experts.

35

ADA Clinical Practice Guidelines

1.1 . . . Evidence-based clinical practice guidelines are intended to provide guidance and should be integrated with a practitioner's professional judgment and a patient's needs and preferences. **They are not standards of care, requirements, or regulations.** They represent the best judgment of a team of experienced clinicians, researchers and methodologists interpreting the scientific evidence on a particular topic.

36

AMERICA'S PEDIATRIC DENTISTS
THE BIG AUTHORITY on little teeth

- Clinical Practice Guidelines
- Best Practices

http://www.aapd.org/policies/

37

AAO Clinical Practice Guidelines

Clinical Practice Guidelines for Orthodontics and Dentofacial Orthopedics

American Association of Orthodontists
My Life. My Smile. My Orthodontist.®

38

AAO on the Standard of Care:

The AAO recognizes that these guidelines may be used by insurance carriers and other payers, **attorneys in malpractice litigation**, and various entities with an interest in orthodontics. The Association encourages all interested persons to become familiar with the Guidelines. **This document was not developed to establish standards of care** or to be used for reimbursement or litigation purposes. The AAO cautions that these uses involve considerations that are beyond the scope of the Guidelines.

NY Jury Instructions, Standard of Care
2: 150 Malpractice--Physician

Malpractice is professional negligence and medical malpractice is the negligence of a doctor. Negligence is the failure to use reasonable care under the circumstances, doing something that a reasonably prudent doctor would not do under the circumstances, or failing to do something that a reasonably prudent doctor would do under the circumstances. **It is a deviation or departure from accepted practice.**

40

California Jury Instructions
501. Standard of Care for Health Care Professionals

- An orthodontist is negligent if [he/she] fails to use the level of skill, knowledge, and care in diagnosis and treatment that other reasonably careful orthodontist would use in the same or similar circumstances. This level of skill, knowledge, and care is sometimes referred to as "**the standard of care**."
- You must determine the level of skill, knowledge, and care that other reasonably careful orthodontist would use in the same or similar circumstances, based only on the testimony of the expert witnesses including [*name of defendant*] who have testified in this case.
- California imposes a "higher standard of care upon doctors with a specialized practice."

41

CA Standard of Care

- Negligence arises from a breach of a legal duty to provide treatment according to the "**standard of care**."
- Direct or circumstantial evidence from which the defendant's negligence may be reasonably inferred requires that the issue be submitted to the jury.

42

What do all a malpractice suits have in common?
The complaint alleges:

- Lack of Informed Consent, and
- Breach of the Standard of Care

43

know your state's laws

- If an assistant isn't allowed to perform a procedure, there is can be no "Informed Consent" and there is no "Standard of Care."
- Know the state dental assistants' regulations. Know what is allowed, what is not allowed.
- Doctors: Never assign a staff member to perform an activity that is not permitted.
- Doctors: Know what your staff is doing. Pay attention. Have frequent staff meetings to instruct and remind. Discuss the consequences of performing unapproved activity, both to you and staff.
- Staff members: Never perform an activity that is not permitted. Remind the doctor if such an assignment is inadvertently made.

44

Standard of Care as it relates to malpractice

The dental malpractice plaintiff must establish the appropriate standard of care and demonstrate that the standard of care has been breached.

45

Proving a Malpractice Case

The four essential elements are:

- Duty (to the patient)
- Breach (of the standard of care)
- Causation (breach must causes harm)
- Damages (harm can be quantified)

collateral consequences of an adverse finding in a malpractice case

- dental board investigation
- ethics hearing with state dental society
- National Practitioner Data Bank
- dropped by malpractice carrier
- dropped by insurance panels, Medicaid, faculty and staff position

47

Q. What dental records are required by the "Standard of Care?"

A. The records that the average, prudent dentist would require to manage the patient's care under the same or similar circumstances.

48

What records do you need to meet the Standard of Care?

Diagnostic records and tests will vary with the nature of the patient's condition but must be sufficient to identify the problems, formulate a diagnosis, and allow the development of an acceptable course of treatment.

49

Standard of Care

The level at which the average, prudent provider in a given community would practice. It is how a similarly qualified practitioner would have managed the patient's care under the same or similar circumstances.

50

Standard of Care is not set by:

- a presenter at a meeting
- a textbook or journal (learned treatise)
- a department chair or faculty member
- a dental society or organization
- what most of your colleagues do

51

Who helps set the standard of care?

- qualified expert witness
- trier of fact (jury or judge)

52

Technology and Standard of Care

Q. When does the standard of care require you to implement new technology in your office?

A. When the average, prudent dentist would implement new technology in his/her office.

53

Is there any disclaimer that can reduce your liability when you utilize (or fail to utilize) technology?

- Professionals cannot “disclaim” their way out of the standard of care.
- Courts have not recognized disclaimers as an effective shield against an allegation of malpractice.

54

Standard of Care

If we don't help establish the standard of care, the lawyers will do it for us.

Conclusion:

- The standard of care does not require that you know everything about the technology you want to utilize but you need to know where to get an answer from someone who does.

56

Conclusions:

- The "standard of care" is not static
- Some of us will be the ones who make new law that sets the standard of care.
- The "reasonable person" standard is the appropriate analysis, but reasonable opinions differ on what is reasonable.

57

Why am I Speaking to You Today?

- We are going to review Informed Consent and its importance to your practice.
- We will discuss what defines the Standard of Care and how that standard is set.

58

Informed Consent: Objectives

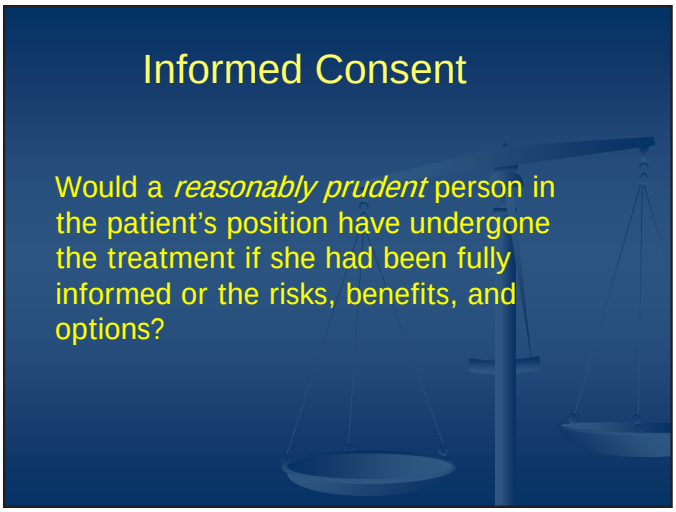
- We will review the legal requirements for effective informed consent
- We will understand how to obtain effective informed consent
- We will discuss exceptions to the rules for obtaining informed consent

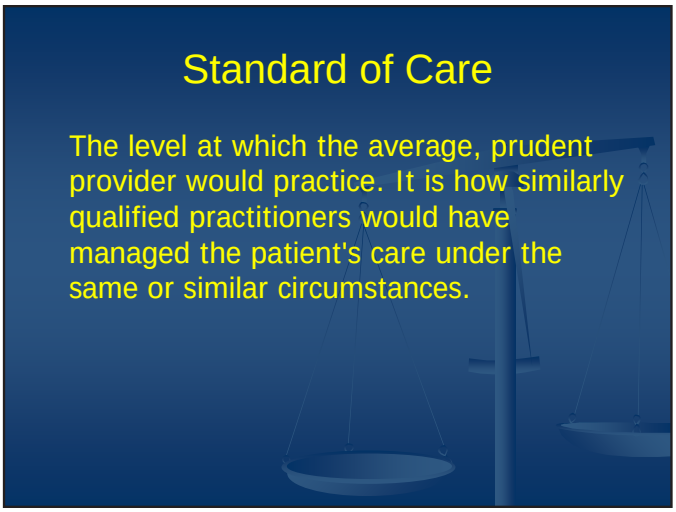
59

Standard of Care: Objectives

- We will explore the concept of Standard of Care
- We will discuss how the standard of care is determined
- You will understand what the standard of care is and how to meet that standard.

60





SELF EVALUATION

Understanding Standard of Care and Informed Consent

1. It is essential to be familiar with your state's definition of the practice of dentistry before you can understand informed consent and the standard of care.

2. If you are performing a procedure that falls outside of the legal definition of the practice of dentistry a patient cannot give his/her informed consent.

3. A minor is capable of giving informed consent if the procedure is explained at an appropriate level.

4. An exception to the doctrine of informed consent is that the risk is commonly known.

5. Informed consent should be:

a. Written
b. Ongoing
c. Provided to patients in a way they can understand
d. All of the above

6. Professional negligence (malpractice) is a breach of duty of the standard of care.

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

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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, 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.

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TOM VIOLA
PHARMACOLOGY DECLASSIFIED

Opioid and Non-Opioid Analgesics - Parts 1 & 2

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

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 2

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.

 3

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.

 4

The Psychology of Pain

 5

The Psychology 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.

 6

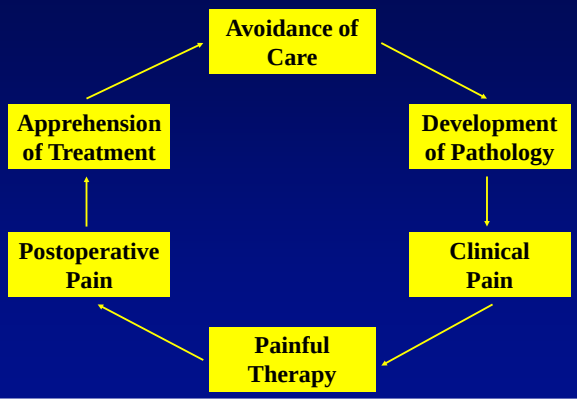
Assessing Effective Pain Management

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

- Pain keeps some patients from seeking help
- The power of negative feedback reinforcement

 7

The Psychology of Pain



 8

The Physiology of Pain

 9

The Physiology 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.

 10

The Physiology 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.

 11

Analgesics

 12

COX-2 Inhibitor?

Phospholipids
↓ *(phospholipase)*
Arachidonic Acid

(COX-1) ↓ Physiologic Prostaglandins
- GI protection
- Renal protection
- Smooth muscle relaxes
- Regulate blood clotting

(COX-2) ↓ Pathologic Prostaglandins
- Pain sensitization
- Inflammation

Bextra (valdecoxib)
Vioxx (rofecoxib)
Celebrex (celecoxib)

 13

Aspirin (ASA)

 14

Aspirin

- Pharmacologic effects
  - –Antiplatelet
    - Used to reduce platelet aggregation
  - –Antipyretic
    - Lowers body temp if above normal
  - –Analgesic
    - Used to treat mild to moderate pain
  - –Antiinflammatory
    - Decreases pain, redness and swelling

 15

Aspirin

- Aspirin
  - Equianalgesic doses

650mg of aspirin

= 200 mg of ibuprofen

= 650 mg acetaminophen

= 275 mg of naproxen

 16

Aspirin

- Patient care considerations
  - –Reye's syndrome
    - Possible hepatotoxicity/encephalopathy
  - –Topical application to oral mucosa
    - –May result in severe ulceration
  - –Zero-order kinetics
    - Increases risk of overdose and toxicity

 17

Aspirin

- Adverse reactions
  - –Gastrointestinal ulceration
    - Decreased protective prostaglandins
      - –Decreased protective mucous
      - –Increased gastric acid secretion
    - Nausea and vomiting
    - GI bleeding

 18

Aspirin

- Adverse reactions (continued)
  - Altered bleeding time
    - Irreversibly reduces platelet aggregation
      - Effect extends for the life of the platelet
      - Replacement of platelets needed for normal clotting to resume
      - May result in excessive or prolonged bleeding after procedures

 19

Aspirin

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

 20

Aspirin

- Contraindications
  - Peptic ulcer
  - Pregnancy
  - Gout
  - Hemophilia
  - History of hypersensitivity
    - Cross-sensitivity with NSAIDs

 21

NSAIDs

 22

NSAIDs

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

 23

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)

 24

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

 25

NSAIDs

- Therapeutic considerations
  - NSAIDs are known to have a "ceiling dose"
    - This is the dose at which maximum analgesic benefit is achieved
      - Increasing the dose will not provide further analgesic effect
    - Higher doses may be used when anti-inflammatory effects are desired
      - However, these higher doses are often associated with more adverse effects

 26

NSAIDs

- Therapeutic considerations
  - Preoperative use of NSAIDs has been shown to decrease levels of postoperative pain and swelling
  - Therapeutic goal is to start inhibiting prostaglandin synthesis before local anesthesia wears off
  - When possible, calculate pediatric ibuprofen dose based on weight using 4-10 mg/kg/dose
    - Give PO every 6-8 hours PRN
    - Maximum daily dose is 40 mg/kg/day

https://emedicine.medscape.com/article/2172401-overview

 27

NSAIDs

- Patient care considerations
  - Hypersensitivity reactions
    - Cross-sensitivity with ASA and NSAIDs
  - Dermatological reactions
    - Stevens Johnson Syndrome (SJS)
    - Toxic epidermal necrolysis (TEN)
  - Cardiovascular risk
    - Increased risk of myocardial infarction and stroke

 28

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
      - Consider spacing aspirin and ibuprofen by 1 to 2 hours

 29

NSAIDs

- Adverse reactions
  - Gastrointestinal ulceration
    - Decrease protective mucous
    - Increase gastric acid secretion
    - Nausea and vomiting
    - Gastrointestinal bleeding
    - If appropriate, dental providers can contact the primary care physician

 30

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
    - If appropriate, dental providers can contact the primary care physician

 31

NSAIDs

- Drug interactions
  - Increased effectiveness of other drugs
    - Mechanism
      - Plasma-protein binding
    - Common Drugs Affected
      - Coumadin (warfarin)
    - Result
      - Increased risk of hemorrhage
      - If appropriate, dental providers can contact the primary care physician

 32

NSAIDs

- Drug interactions (continued)
  - Increased effectiveness of other drugs
    - Mechanism
      - Decreased renal excretion
    - Common Drugs Affected
      - Lithium
    - Result
      - Increased muscle rigidity
      - If appropriate, dental providers can contact the primary care physician

 33

NSAIDs

- Drug interactions (continued)
  - Decreased effectiveness of other drugs
    - Mechanism
      - Increase sodium/fluid retention
    - Common Drugs Affected
      - Antihypertensives
    - Result
      - Consider monitoring hypertensive patients if NSAIDs will be used for more than 5 days
      - If appropriate, dental providers can contact the primary care physician

 34

NSAIDs

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

 35

Acetaminophen (APAP)

 36

Acetaminophen (APAP)

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

 37

Acetaminophen (APAP)

- Pharmacologic effects
  - Antipyretic
    - Lowers body temp if above normal
  - Analgesic
    - Effective in treatment of mild to moderate pain
    - Considered the "safe" analgesic
    - When possible, calculate pediatric acetaminophen dose based on weight using 10-15 mg/kg/dose
      - Give PO every 4-6 hours
      - No more than 5 doses (2.6 g) in 24 hours

https://emedicine.medscape.com/article/2172407-overview

 38

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**

 39

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

 40

Acetaminophen (APAP)

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

 41

Opioid Analgesics

 42

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)
  - Tramadol
    - Combination with APAP (Ultracet)

 43

Why Opioids???

- 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

 44

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 from overdose

 45

Opioid Analgesics

- Adverse reactions
  - GI effects
    - Constipation (OIC)
      - Reduced GI motility
    - Nausea and emesis
      - Direct stimulation of CTZ
  - Hypersensitivity reactions
    - Dermatological reactions

 46

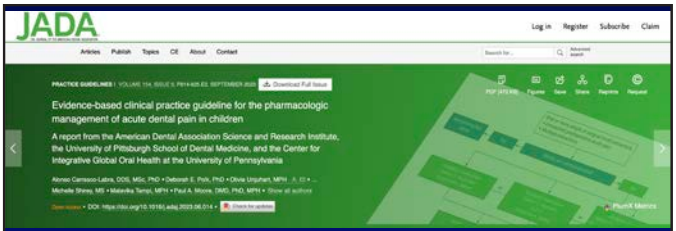
Opioid Analgesics

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

 47

The Latest Information…

 48

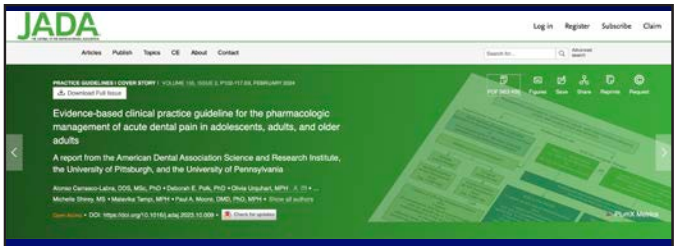


Conclusions and Practical Implications

Nonopioid medications, specifically nonsteroidal anti-inflammatory drugs like ibuprofen and naproxen alone or in combination with acetaminophen, are recommended for managing acute dental pain after 1 or more tooth extractions (that is, simple and surgical) and the temporary management of toothache in children (conditional recommendation, very low certainty). According to the US Food and Drug Administration, the use of codeine and tramadol in children for managing acute pain is contraindicated.

Carrasco-Labra, Alonso, et al. "Evidence-based clinical practice guideline for the pharmacologic management of acute dental pain in children: A report from the American Dental Association Science and Research Institute, the University of Pittsburgh School of Dental Medicine, and the Center for Integrative Global Oral Health at the University of Pennsylvania." The Journal of the American Dental Association 154.9 (2023): 814-825.

 49



Conclusions and Practical Implications

Nonopioid medications are first-line therapy for managing acute dental pain after tooth extraction(s) and the temporary management of toothache. The use of opioids should be reserved for clinical situations when the first-line therapy is insufficient to reduce pain or there is contraindication of nonsteroidal anti-inflammatory drugs. Clinicians should avoid the routine use of just-in-case prescribing of opioids and should exert extreme caution when prescribing opioids to adolescents and young adults.

Carrasco-Labra, Alonso, et al. "Evidence-based clinical practice guideline for the pharmacologic management of acute dental pain in adolescents, adults, and older adults: A report from the American Dental Association Science and Research Institute, the University of Pittsburgh, and the University of Pennsylvania." The Journal of the American Dental Association 155.2 (2024): 102-117.

 50

Managing Substance Use Disorder in Our Dental Patients

 51

Managing Dental Patients with SUD

Patients with SUD may be difficult to manage due to a lack of compliance with treatment and instructions.

- Patients with SUD may be apprehensive about dental care resulting in non-compliance with appointments and avoidance in seeking care.
- Patients with SUD often self-medicate for painful medical and dental conditions.

 52

Managing Dental Patients with SUD

Managing patients with SUD requires a clinical examination and a detailed medical history.

- Many patients do not report the misuse of drugs.
- It is essential to use non-confrontational language when obtaining the medical history and provide "judgement-free" questioning of possible drug use and alcohol consumption.

 53

Managing Dental Patients with SUD

A multidisciplinary approach is essential to coordinate dental treatment of patients with SUD when pain control is necessary.

- Regular communication with the patient's physician and pharmacist should be maintained.
- Pain management is best coordinated with the patient's physician to prevent drug interactions, over-prescribing and overdosing.

 54

Managing Dental Patients with SUD

The importance of oral hygiene needs to be emphasized and regularly reviewed with the patient.

- Preventive measures including the use of fluoride supplementation and prescription toothpaste should be encouraged.
- Recommending the use of xylitol-containing gum or other sugarless products will help in the prevention of caries.

 55

Identification of Substance Use Disorder (SUD) And Patient Education

 56

How Do I Manage Substance Use Disorder (SUD) in My Patients?

 57

Identification of Substance Use Disorder

- Know your patient
  - Review the medical history
    - Explore history of illegal and prescription drug use
  - Interview the patient
    - Identify aberrant behaviors
  - Utilize screening tools for SUD
  - Review of the PDMP

 58

Patient Education

- Educate and manage expectations
  - Discuss adverse effects and overdose
  - Explain addiction
  - Explore why an opioid is necessary
  - Discuss alternative treatments
  - Agree to pre- and post-op treatment plan

 59

Prescribing Opioids in Dentistry

 60

ADA Policy on Opioid Prescribing

- ADA 2018 Policy Statement
  - ADA supports mandatory CE in prescribing opioids
  - ADA supports statutory limits on opioid dosage and duration of no more than 7 days for the treatment of acute pain
  - ADA supports dentists registered with and utilization of Prescription Drug Monitoring Programs (PDMPs)

 61

Prescribing Opioids

Is The Analgesia Meaningful?

Are There Any Adverse Effects?

Is The Patient At Risk?

Do Aberrant (Red-Flag) Behaviors Exist?

 62

Red Flag (Drug-Seeking) Behaviors

Must be seen right away

Desires appointment at the end of office hours

Claims to be from out of town

Exaggerates dental symptoms that are not corroborated by physical exam

 63

Red Flag (Drug-Seeking) Behaviors

State that non-opioid drugs "do not work for them"

Claims that prescription has been lost

Claims that medication fell in sink, laundry or toilet

 64

Prescribing Opioids

Smallest Effective Dose

Smallest Amount of Doses

Shortest Appropriate Period of Treatment

 65

Treatment of Opioid Analgesic Addiction

 66

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

 67

Treatment of Opioid Analgesic Addiction

Patients on buprenorphine/naloxone or should be instructed to rinse their mouths with water immediately following dosing.

- Managing xerostomia in patients with SUD should be an integral part of the treatment plan.
- Salivary substitutes, oral moisturizers and artificial saliva are recommended for patients with recurring xerostomia.

 68

FDA U.S. FOOD & DRUG ADMINISTRATION

FDA warns about dental problems with buprenorphine medicines dissolved in the mouth to treat opioid use disorder and pain

Benefits for use outweigh these risks and oral care can help

1-12-2022 FDA Drug Safety Communication

What safety concern is FDA announcing?
The U.S. Food and Drug Administration (FDA) is warning that dental problems have been reported with medicines containing buprenorphine that are dissolved in the mouth. The dental problems, including tooth decay, cavities, oral infections, and loss of teeth, can be serious and have been reported even in patients with no history of dental issues. Despite these risks, buprenorphine is an important treatment option for opioid use disorder (OUD) and pain, and the benefits of these medicines clearly outweigh the risks.

Regular adherence to buprenorphine to treat OUD reduces withdrawal symptoms and the desire to use opioids, without causing the cycle of highs and lows associated with opioid misuse. The comprehensive approach of buprenorphine combined with counseling and other behavioral therapies is often one of the most effective ways to treat OUD. This approach, called medication-assisted treatment (MAT), is tailored to meet each patient's needs and can help sustain recovery and prevent or reduce opioid overdose. According to the U.S. Substance Abuse and Mental Health Services Administration (SAMHSA), MAT has been shown to be effective in improving patient survival, decreasing opioid use, and allowing patients to live a self-directed life, including the ability to gain and maintain employment.

What is FDA doing?
We are requiring a new warning about the risk of dental problems be added to the prescribing information and the patient Medication Guide for all buprenorphine-containing medicines dissolved in the mouth. The prescribing and patient information will also include strategies to maintain or improve oral health while undergoing treatment with these medicines. These

https://www.fda.gov/drugs/drug-safety-and-availability/fda-warns-about-dental-problems-buprenorphine-medicines-dissolved-mouth-treat-opioid-use-disorder

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SELF EVALUATION

Opioid and Non-Opioid Analgesics - Parts 1 & 2

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. In acute overdose, acetaminophen adversely affects the :

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

3. T/F - Non-opioid analgesics (like aspirin and ibuprofen) work through inhibition of prostaglandin synthesis.

4. T/F - Acetaminophen has significant anti-inflammatory activity and may be used as monotherapy to effectively treat dental pain.

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

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

Bert Orlov, MBA

Bert Orlov, MBA of New York City, New York, is a Managing Director of Eisner Amper Healthcare Consulting Group with 25 years of experience as a management consultant in the healthcare industry. Mr. Orlov earned his MBA from Yale School of Management and specializes in strategy, transactions, operations and project management for physician groups and hospital systems, as well as not-for-profits. Mr. Orlov has been published in many books and articles including the Beckers Hospital Review. He collaborates with the University of Pennsylvania on strategy for primary care practices.

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Planning, Negotiating and Implementing a Practice Merger or Acquisition

Bert Orlov, MBA

Developing an Optimal Deal - Three-Step Framework

- With consolidation in the Physician Practice market moving ahead rapidly, a strategic/proactive approach is essential
- The three-step framework for evaluating and then conducting a PE transaction, employment by Hospital/Network or M&A with other MD groups
- Even if strategy does NOT focus on a deal, the Phase I: Preparation has tremendous value

Private Equity: Overview

Industry Fundamentals

- Private Sector
  - Limited regulation
  - Multiple players
- PE Firms (Investors) seek growth, as money in the bank cannot generate profit
- Acquisition
  - Substantial equity investment
  - Payments to sellers may include cash and shares in PE entity
- Profitability Focus
  - Platform/Roll-up
  - Scrape
  - Second Bite
  - Unicorns

Typical Deal Structure

- Purchase
  - Valuation (EBITDA and QoE) times market multiple
  - Price
    - Cash and Terms
    - Stock in the PE entity itself, offering potential growth opportunity
- Ongoing Compensation
  - Productivity
  - Scrape / Profits to PE
- Management Services
- Profitability Enhancement

Private Equity: Growth Share Matrix

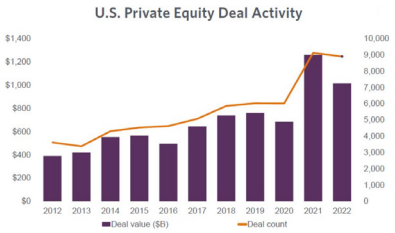
Source: BCG Matrix - Overview, Four Quadrants and Diagram

Private Equity: Deal Trends

- Private Equity deal activity has increased between 2012 and 2021
- After reaching its peak in 2021 activity decreased likely because of after-effects of COVID. Anecdotally, deal volume has grown in 2024
- PE firms are showing increasing interest in healthcare (especially physician practices)

2023 Healthcare Transactions

- 1135 unique deals
  - 148 buyouts
  - 259 growth/expansion investments
  - 728 add-on acquisitions



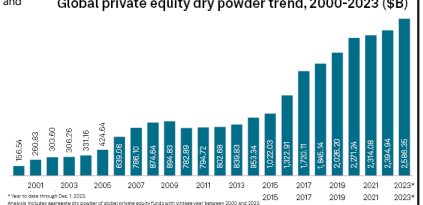
Sources: 1) Private Equity Report: 2022 Trends & 2023 Outlook | Cherry Bekaert (cbh.com) **2)** PESP_report_2023-Healthcare-Acquisitions_March-2024.pdf (pestakeholder.org)

Private Equity: "Dry Powder"

- **"Dry Powder" stands at an all time high at $2.5 trillion** – according to S&P Global
- Approximately $100 Billion is ear-marked for investment in the Healthcare sector

- PE investors seek to complement existing platform investments via acquisitions that increase scale and efficiencies in the following sectors:
  - Physician Practices
  - Healthcare Information Technology
  - BioPharma
  - Home Healthcare
  - Behavioral Health

Global private equity dry powder trend, 2000-2023 ($B)



* Year to date through Dec. 1, 2023.
Analysis includes aggregate dry powder of global private equity funds with vintage year between 2000 and 2023.
Dry powder data is supplemented by Preqin.
Source: S&P Global Market Intelligence.
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Hospital Partner

- According to Kaufman Hall, Q1 2024 showed a significant uptick in M&A activity and represents the strongest Q1 since 2020
- A key highlight of the quarter was the diversity of transactions, showcasing a variety of trends that have been shaping the health care landscape:
  - Cross-Market Transactions
  - Community Health Systems seek larger partners
  - Portfolio realignment
  - A new partnership model
  - Academic health systems build community networks
- Since 2012, direct hospital employment of physicians has nearly doubled (as a % of physician workforce)

Practice to Practice: Overview

- According to the American Medical Association, In 2023, the U.S. physician group market size was estimated at $325 billion and expected to grow to $461 billion by 2030
  - Initiatives to improve revenue to physician groups
  - Shift towards value-based care
  - Growing trend of solo practitioners joining larger physician groups
- Practice Ownership (2012-2022)
  - The share of physicians working in private practices fell from 60.1% to 46.7%.
  - The share of physicians working in hospitals as direct employees or contractors increased from 5.6% to 9.6%
- Practice Size (2012-2022)
  - The share of physicians in small practices (10 or fewer physicians) shrank from 61.4 % to 51.8% between 2012 and 2022
  - Large practices (50 physicians or more) grew from 12.2% to 18.3%
  - Midsized practices (those with 11 – 49 physicians) remained stable
- Employment Status (2012-2022)
  - The share of physicians who were self-employed fell by 9 percentage points from 53.2% to 44%.
  - The share of physicians who were employed grew from 41.8% to 49.7%
  - The share of physicians under the age of 45 who were self-employed fell from 44.3% to 31.7%.

Practice to Practice: Consolidation

- According to the American Medical Association, the industry has seen a redistribution of physicians from small to large practices
  - In 2012, 61.4% of physician worked in practices with 10 Physicians or less – in 2022, the % declined by 9.6% to 51.8%
- According to the American Hospital Association, an overwhelming majority (94%) of physicians think it has become more financially and administratively difficult to operate a practice.
- Threats to independent practices includes – Low reimbursement rate, declining margins/profits, staffing shortages, and more.

Distribution of physicians by practice size (number of physicians in practice)

	2012	2014	2016	2018	2020	2022
Practice size						
Fewer than 5 physicians	40.0%	40.9%[b]	37.9%[c]	35.7%[c]	33.6%	32.8%[a]
5 to 10	21.4%[c]	19.8%	19.9%	20.8%	20.0%	19.0%[a]
11 to 24	13.4%[c]	12.1%	13.3%	12.7%	11.5%	12.1%
25 to 49	7.1%	6.3%[c]	7.4%	7.6%	7.8%	7.7%
50+ physicians	12.2%	13.5%	13.8%	14.7%[a]	17.2%	18.3%[a]
Direct hospital employee/contractor [2]	5.8%[a]	7.4%	7.7%	8.5%[c]	9.7%	10.1%[a]
	100%	100%	100%	100%	100%	100%
N	3326	3388	3381	3339	3353	3328

Making a Deal: Pros and Cons

Is PE (or Hospital) acquisition or merger with other Practices a good idea for your Practice?

Potential Benefits

- Substantial financial return
- Reduction in the burden of running a practice
- Operational support
- Support to grow the practice
- State regulation may prompt faster movement

Potential Risks

- Loss of autonomy
- Less financial attractiveness for younger doctors in out-years
- Uncertainty about the future of PE

Developing an Optimal Deal - Three-Step Framework

I: Preparation

- Develop realistic understanding of the practices' value and market dynamics,
- Identify a means to increase market value.
- Ensure Shareholder/Owner agreement on strategy

II: Negotiation

- Identify potential partners and select the best choice.
- Plan for the detailed components of negotiations.
- Advance deal-making (including legal, financial, and tax review as well as proper due diligence on both sides)

III: Implementation

- Detail essential seller and buyer responsibilities
- Navigate the often-convoluted closing process.
- Facilitate the post-transition implementation for smooth transition for DDS/DMDs, patients and new Owners

Phase I: SWOT Analysis

- Evaluating the strategic position of your practice

Strengths	**Opportunities**
Weaknesses	**Threats**

Phase I: Strategy Planning—Vision Alignment

- Discuss short- and long-term goals
- Build consensus among owners (advisor supported)
- Outcomes
  - SWOT analysis to drive strategy
  - Financial projections and preliminary valuation estimate
  - Prevents wasted time if not all together or last-minute deal collapse
  - Enables selection of right partner and informs negotiation strategy
- EVEN IF NO DEAL, this EFFORT guides strategy and performance improvement

Phase I: Strategy Planning—Improvement Opportunities

Revenue Side

- Productivity
- Scheduling and Patient Flow
- Growth Strategies (including strategic collaborations, e.g., with hospitals or payors for value-based contracts
- Revenue Cycle Management Opportunity (one-time and ongoing)
- Managed Care Rates
- Referral Network and Leakage (referrals)

Operations Side

- Coding
- Staffing and Non-Labor Overhead reductions
- Patient Engagement
- Managing Value-Based Contracts
- Ancillary Service Profitability (Opportunity)
- Compliance and Risk Management

Improvement Opportunities: Productivity & Compensation

- Following assessments for productivity and capacity, equitable compensation modeling should be performed, and marketing enhancements considered

Compensation Modeling

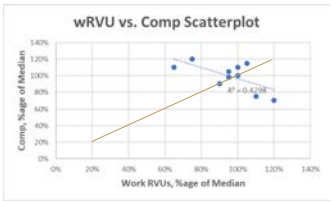
- Compensation Models should be reviewed to ensure providers production is adequately compensated relative to industry benchmarks and to prevent the risk of provider departure
- Provider incentives should be aligned with industry standards

DHS Services

- Strict rules govern the distribution of DHS (Designated Health Services, aka ancillaries)
- Non-compliance can result in civil and even criminal penalties

Provider Schedule Development

- Optimizing provider schedules through Capacity Reviews can increase productivity and patient visits



Improvement Opportunities: RCM Assessment

Revenue Cycle Management Assessments

- Net Margin
- Clean Claim Rates
- Charge Lag Time
- Collection Rates
- Collections/wRVU
- Aging Accounts Receivable & Average Days in AR
- Denial Rates & Reasons

RCM Assessment		
	2022	Benchmark
Clean Claim Rate	99%	95%
Denial Rate (First Time Pass)	14%	8%
DOS to Charge Lag Time	18 Days	4 Days
Collections	$367M	-
Collection Rate	96%	98%
Average Days in AR	38 Days	46 Days
Total AR 120+ Days	9%	12%

Improvement Opportunities: RCM Opportunity

Opportunity Area	Value Range Estimate
One Time Opportunity:	
AR Push Effort	**$0.9M - $1.6M**
Ongoing Opportunities:	
RCM Performance / Net Collection Rate	$3.7M - $9.2M
Billing Costs	Limited, costs appear in line
Subtotal Ongoing	**$3.7M – $9.2M**

Capturing Opportunity

- One-time AR push effort to collect at risk aging AR
  - Aging AR: likelihood of collections falls over time (esp. patient portion), as well as the inherent risk of "aging out"
  - Prioritization: when working AR, clear segmentation is critical
    - Size of claim
    - Age
    - Payor
    - Cause of denial
  - Potential need for SWAT team/extra staff
- Ongoing net collection rate improvement via process improvement & best practice implementations

Improvement Opportunities: RCM Assessment & Opportunity

Revenue Cycle Management Assessments

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Improvement Opportunities: Managed Care Rates

Rate Reviews

- Annual reviews should be performed for reimbursement rates of payor contracts
  - Compare current rates to Medicare and across carriers
  - Focus on CPTs that drive highest volume and revenue per unit
  - Identify under-performing contracts and push negotiations
  - Do not rule out potential (threat) of contract cancellation, depending of course on your market power and importance of a given payor
- Contractual allowance reviews should be performed to ensure the validity of accounts/AR on a regular basis
  - These procedures reduce practice exposure to underpayments and improper write-offs

Improvement Opportunities: Growth and Marketing

Growth Strategies

- Create new services (specialties or ancillaries), as well as internal growth in provider capacity (assuming solid productivity)
- Develop partnerships with selected providers
  - Other practices (potential referral sources or "preferred vendors")
  - Collaborative development of ancillary services (e.g., ambulatory surgery or diagnostics)
  - Hospital relationships, including PSAs or coverage and stipend agreements
  - Engage in risk-sharing with hospitals, such as management contracts in surgical specialties
- M&A
  - Target potential partners, based on both geography and specialty, considering complementarity or market dominance
  - Conduct outreach to test interest, the explore possibilities
  - Remember that deals take time investment to develop
- Value-based plans

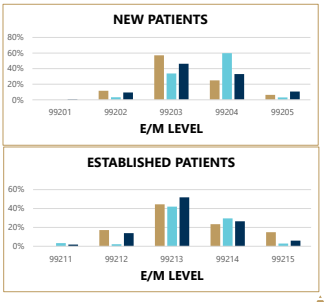
Marketing

- Marketing practices should be reviewed for potential enhancement to increase patient visits
- Expand referral network
- Considering the following can all enhance your practices' marketing capability:
  - Improving advertising strategies
  - Leveraging digital marketing tools
  - Optimizing search engine presence
  - Traditional MD outreach techniques
    - Internal: prevent leakage of referrals (esp. procedures and chronic patients) to other MDs
    - External: outreach to potential referral sources, as well as speaking and publishing

Improvement Opportunities: Coding Reviews

Coding Reviews

- A smart private equity group will ask about coding
- This is a useful defensive tool for practices to consider
- Encounter documentation, coding reviews, & education should be performed annually as recommended by the OIG for an effective compliance plan
  - Ensures providers/charge posters/coders are not placing the practice at risk by over coding
  - Identifies under coding and opportunities for increased revenue



Improvement Opportunities: Staffing

Staffing

- Clinical & Administrative head count and expenses should be tracked and regularly reviewed
- Findings should be compared to industry benchmarks for a group of similar size
- This ensures the group is in line with industry expectations and identifies areas for cost savings

Clinic Staffing Summary

Employee Type	Total Salary	Total FTE	Adjusted FTE	MGMA Median Per Provider	Implied FTE	Variance
Physician	$104,205k	190	190	-	-	-
NP/PA	$17,172k	138	69	-	-	-
Therapists	$21,308k	243	121	-	-	-
Admin Support	$30,584k	570	-	1.44	548	22
Clinical Support	$26,211k	490	-	1.28	487	3
Ancillary	$6,932k	112	-	0.32	122	-9
Other	$11,625k	151	-	-	-	-

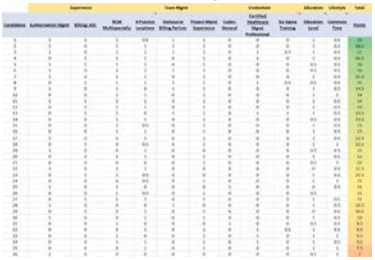
***Example:** Organization is overstaffed for Administrative Support and slightly understaffed for Ancillary Support compared to benchmarks*

Improvement Opportunities: Executive/Talent Management

Recruitment

- Identifying the right talent for an executive team or adding new physicians to a roster can be a challenging and time-consuming effort
- Recruiting, advertising, and screening initiatives to identify a narrow pool of credible candidates should be performed
- Candidate scoring matrices allow the creation of a pipeline of qualified candidates for critical roles

Candidate Scoring Matrix



Improvement Opportunities: Patient Engagement

Patient Engagement & Retention

- Patient engagement can be enhanced through more personalized and improved communication or loyalty programs to keep patients engaged with their care plans

Leakage

- Implementing patient navigation services, more convenient patient scheduling, improved patient education, practice feedback mechanisms, and telehealth services can help address leakage

Referrals

- Streamlining your referral process can ensure patients are promptly and smoothly transitioned to appropriate specialists or services without long wait times
- Implementing efficient referral processes can be accomplished via referral management systems and enhanced care coordination

Improvement Opportunities: Risk Management

- Managing Risk effectively can help your organization ensure stability, and sustain growth while maintaining high standards of patient care

Wind-Down / Retirement / Succession Planning

- Comprehensive plans for the smooth transition of responsibilities and patient care is important as key staff members retire, developing detailed documentation of roles, patient handover protocols, training programs, leadership development initiatives, can all support succession planning and staff changes

Market Competition / Consolidations

- Staying competitive can be accomplished by analyzing market trends, providing consolidation resources and forming partnership alliances through mergers and acquisitions support, expanding service lines, leveraging economies of scale while still providing high-quality care at lower costs

Patient Safety Initiatives

- Implementing robust patient safety programs to reduce errors and enhance quality of care using technology to monitor and improve patient safety metrics

Cybersecurity Measures

- Protecting patient data and organizational information from cyber threats through advanced cybersecurity protocols and HIPPA Security Assessments

Crisis Management Planning

- Developing and regularly updating crisis management plans for emergencies such as natural disasters, pandemics, EHR failure, or other unforeseen events, this includes communication strategies, resource allocations, and continuity of operations plans

Improvement Opportunities: Compliance

- Under ACA, government and carriers increasingly depend both the existence of and monitoring of performance
  - Fraud, Waste & Abuse (FWA)
  - Coding and Billing
  - HIPAA and IT security
  - Communications
    - Internal
    - External to patients and other physicians/providers
  - Education and training
  - Enforcement
    - Monitoring
    - Re-education
    - Penalties

Lessons Learned

- If NO GO… Phase I improve performance and mitigate risks when remaining independence
- If GO… Phase I improves EBITDA (market value) and prepares the Practice for a transaction
- IF GO, THEN this Strategy Process prevents
  - Deal falling apart at the last minute due to mis-aligned expectations
  - Under valuing the practice and thus both purchase price and future compensation
  - Potentially entering the wrong deal, in terms of personal and organizational goals

SELF EVALUATION

Planning, Negotiating and Implementing a Practice Merger or Acquisition

1. How much money is PE sitting on:

a. $10M
b. $100M
c. $1B
d. $20B

2. T/F - Should EVERY partner participate in the planning process for a deal?

3. T/F - The value of a practice equals its EBITDA ("Earnings before interest, taxes, depreciation and amortization)?

4. Which of the following should be reviewed during Phase II?

a. Revenue cycle management
b. How old is the practice
c. How nice is the office
d. Do the MDs have publicly-traded stock in healthcare companies

5. T/F - PE firms must meet FMV standards in paying for acquisitions

6. T/F - Hospitals typically pay market value in acquiring practices

7. Which elements are important in judging "fit" between a PE firm and a practice

a. Operational control over schedules
b. Capital available to PE
c. Future compensation model
d. Commitment to patient care
e. All of the above

8. What is the biggest risk factor in failed deals

a. Compensation offer
b. EBITDA multiple
c. Shareholder vesting rights
d. Lack of consensus
e. All of the above

Answer Key: 1. D, 2. T, 3. F, 4. A, 5. F, 6. F, 7. E, 8. E

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Dr. Maples, of East Lansing, Michigan, is a long time, general and restorative dentistry clinician who, following her receipt of a master's degree in business, developed a passion for organizational behavior, executive leadership, and target marketing. An expert in mouth-body connections, Dr. Maples is a practitioner of Integrative Dental Medicine at Total Health Practice. She is also a sought-after national presenter to both dental and medical audiences, serves on the executive board of the American Academy of Oral Systemic Health, and is a Fellow of the International College of Dentists.

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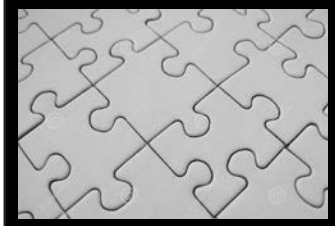
Looking at the Mouth through Superpowered Eyes: Oral and Systemic Health Connections

You're sure you're right?
How fine and strong.
But were you ever just as sure,
And wrong?

3

4

Total Health Dentistry

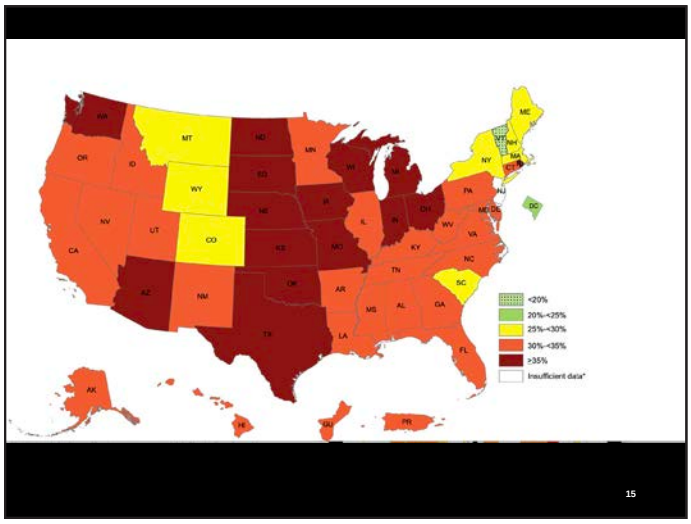


We SEE what we expect to SEE
(Not necessarily what is really there)

7

9


It is estimated that
75% of our U.S. health care costs are from chronic *preventable* disease!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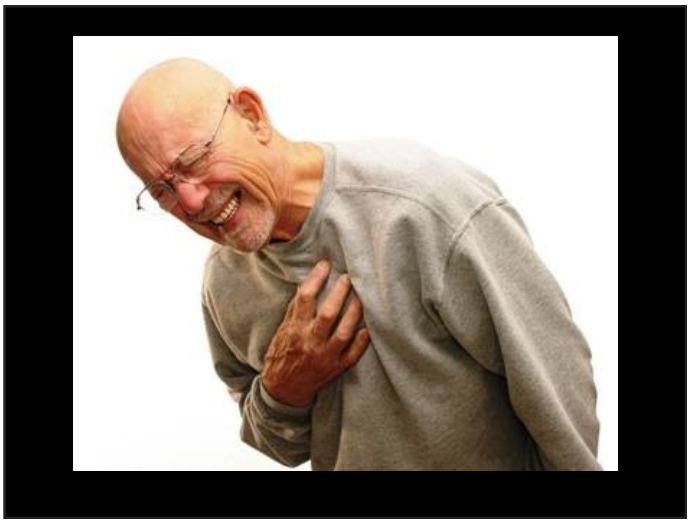
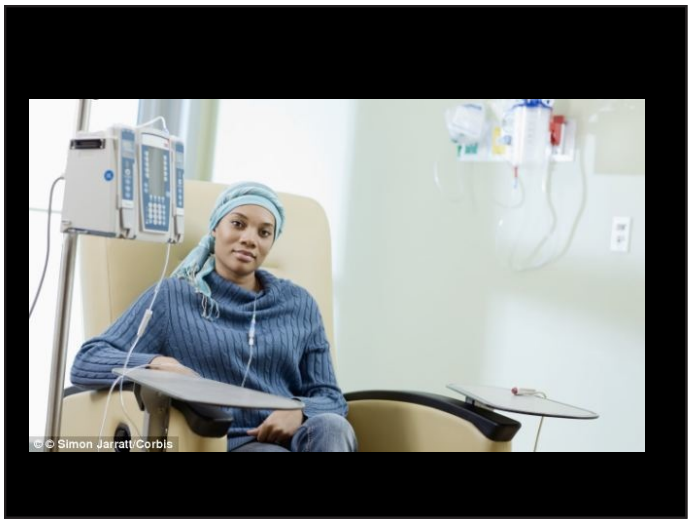
Insufficient data*
15

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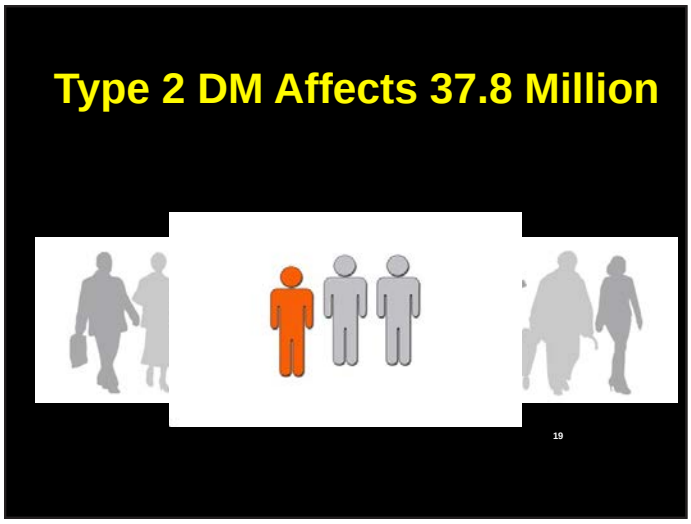
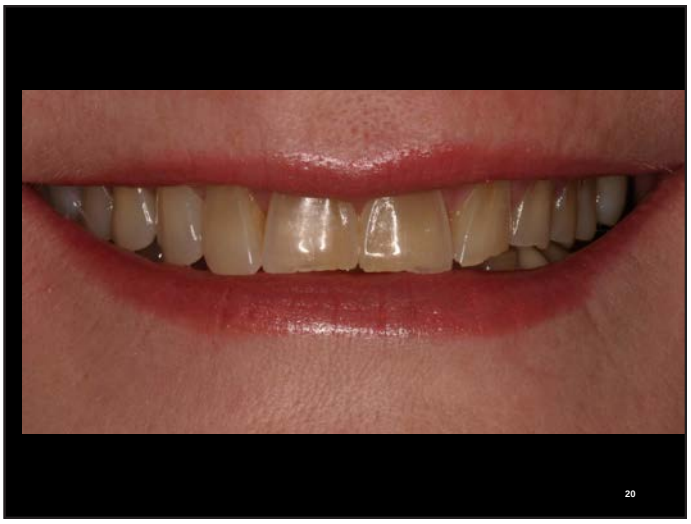
For every 100 U.S. adults...
4 KNOW THEY HAVE SLEEP APNEA1,2
Fix before six!
22 DON'T KNOW THEY HAVE IT1,2
1 Peppard PE et al. Am J Epidemiol 2013
2 Young T et al. Sleep 1997


Type 2 DM Affects 37.8 Million
19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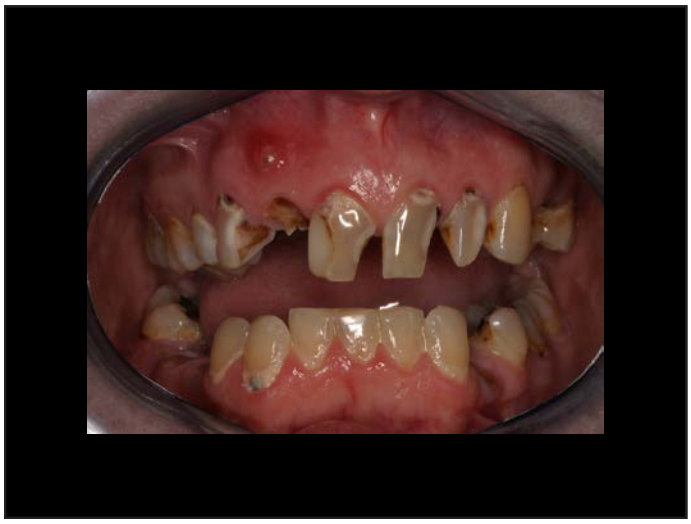
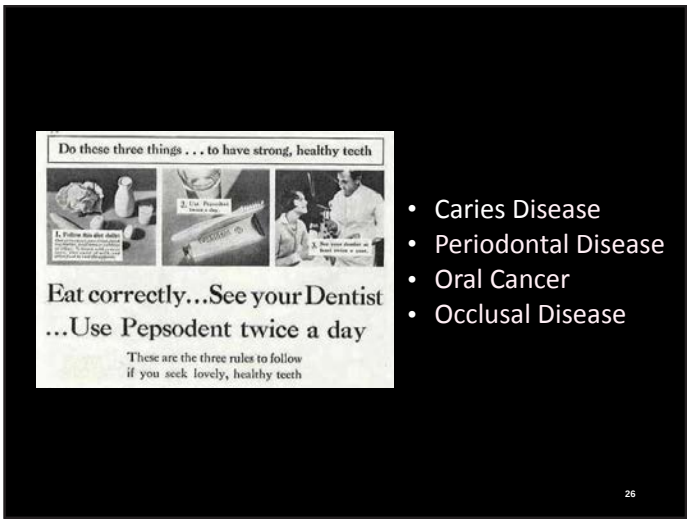



SICK CARE
Vs.
HEALTH CARE
WHICH WILL YOU CHOOSE?


GOOD NEWS,
BAD NEWS
24


We Are the Ones We've Been Waiting For.
25


Do these three things . . . to have strong, healthy teeth
Eat correctly...See your Dentist
...Use Pepsodent twice a day
These are the three rules to follow if you seek lovely, healthy teeth
• Caries Disease
• Periodontal Disease
• Oral Cancer
• Occlusal Disease
26


Our Healthcare Team Matters
27


Competitive Advantage
is doing what your competition is not willing to do!
28

Our Mission is.....

To help each child, by age 18, develop beliefs, skills, and habitual behaviors to support a lifetime of oral and systemic health.

Our Challenge

How do we put kids in the driver's seat for a preferred future?

NewsFlash!

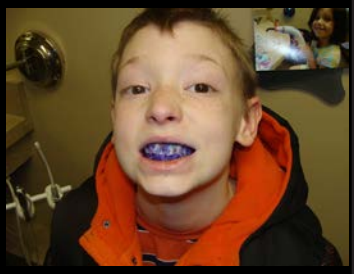
There is no efficacy in polishing teeth !

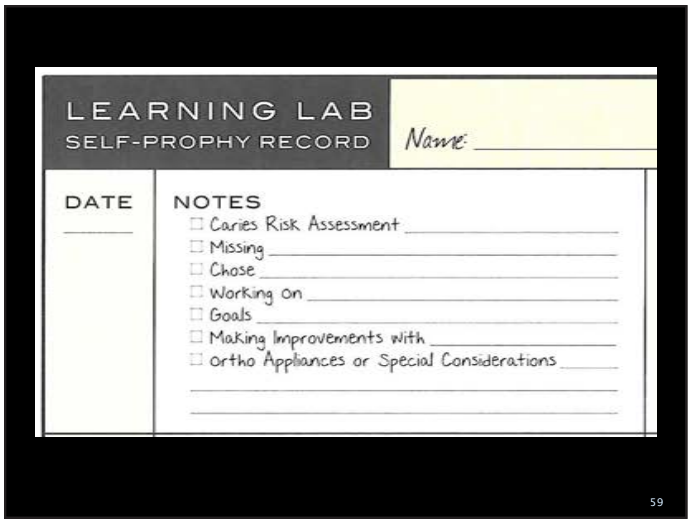
Polish for stain and stain alone!

"It is difficult to get a man to understand something when his salary depends on his *not* understanding it."

--Upton Sinclair

Self Prophy




LEARNING LAB
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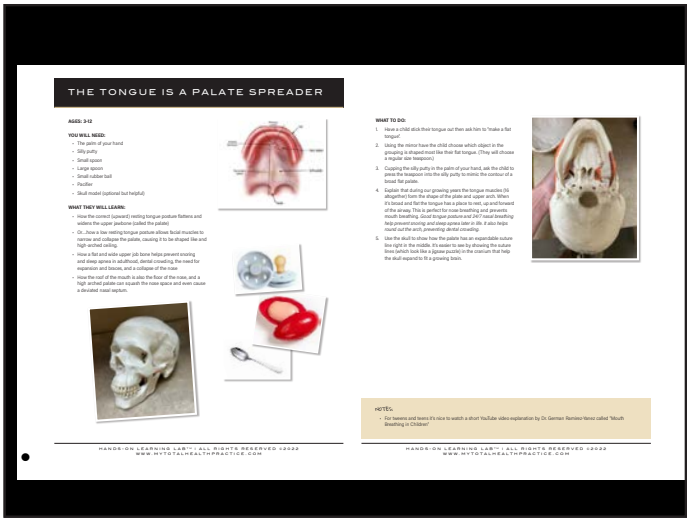
Making Improvements with
ortho Appliances or Special Considerations
59


46


Hands-On
LEARNING LAB
Kinesthetic
Learning
For Kids


Happy 20th Anniversary!
SODA SOAK EXPERIMENT
Hands-On
LEARNING LAB
[KIT]


THE TONGUE IS A PALATE SPREADER
AGES: 3-12
YOU WILL NEED:
The palm of your hand
Silly putty
Small spoon
Large spoon
Small rubber ball
Pacifier
Skull model (optional but helpful)
WHAT THEY WILL LEARN:
How the correct (upward) resting tongue posture flattens and widens the upper jawbone (called the palate)
Or...how a low resting tongue posture allows facial muscles to narrow and collapse the palate, causing it to be shaped like and high arched ceiling
How a flat and wide upper jaw bone helps prevent snoring and sleep apnea in adulthood, dental crowding, the need for expansion and braces, and a collapse of the nose
How the roof of the mouth is also the floor of the nose, and a high arched palate can squash the nose space and even cause a deviated nasal septum.
WHAT TO DO:
Have a child stick their tongue out then ask him to "make a flat tongue"
Using the mirror have the child choose which object in the grouping is shaped most like their flat tongue. (They will choose a regular size teaspoon)
Cupping the silly putty in the palm of your hand, ask the child to press the teaspoon into the silly putty to mimic the contour of a broad flat palate.
Explain that during our growing years the tongue muscles (its altogether) form the shape of the plate and upper arch. When it's broad and flat the tongue has a place to rest, up and forward of the airway. This is perfect for nose breathing and prevents mouth breathing. Good tongue posture and 24/7 nasal breathing help prevent snoring and sleep apnea later in life. It also helps round out the arch, preventing dental crowding.
Use the skull to show how the palate has an expandable suture line right in the middle. It's easier to see by showing the suture lines (which look like a jigsaw puzzle) in the cranium that help the skull expand to fit a growing brain.
NOTES:
For tweens and teens it's nice to watch a short YouTube video explanation by Dr. German Ramirez-Yanez called "Mouth Breathing in Children"
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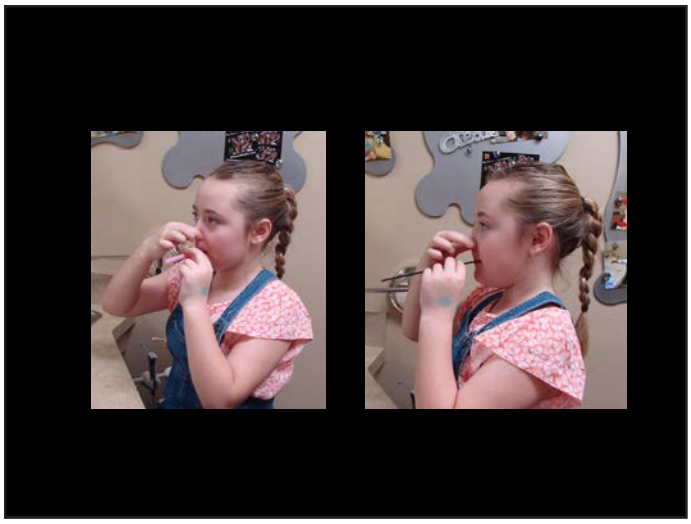
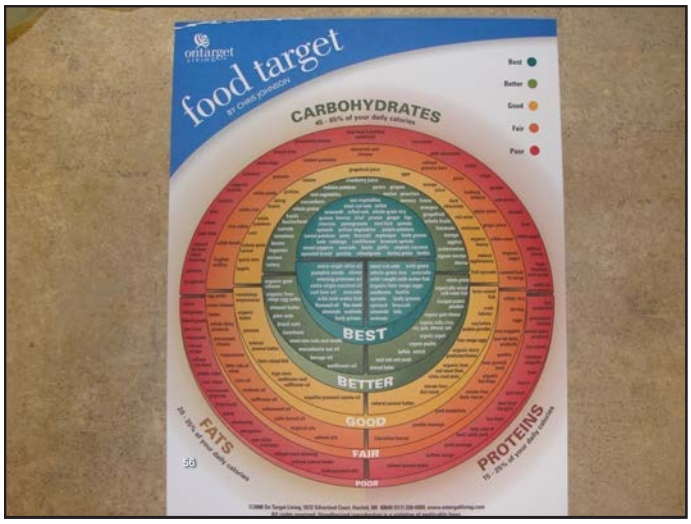
Reese's Puffs




food target
CARBOHYDRATES
BEST
BETTER
GOOD
FAIR
POOR
FATS
PROTEINS


Be the Leanest, Fittest Famil
$12.36
EAT THIS
FOR KIDS!
NOT THAT!
food swaps that can save your child from obesity!
SpaghettiOs Original
180 calories
1 g fat
Save 230 calories and 18 grams of fat!
Kraft Macaroni & Cheese Dinner
410 calories
19 g fat
BY DAVID ZINCZENK
WITH MATT GOULDING


Ingredients: Whole Corn, Vegetable Oil (Contains One or More of the Following: Corn, Soybean, and/or Sunflower Oil), Salt, Cheddar Cheese (Milk, Cheese Cultures, Salt, Enzymes), Maltodextrin, Wheat Flour, Whey, Monosodium Glutamate, Buttermilk Solids, Romano Cheese From Cow's Milk (Part-Skim Cow's Milk, Cheese Cultures, Salt, Enzymes), Whey Protein Concentrate, Onion Powder, Partially Hydrogenated Soybean and Cottonseed Oil, Corn Flour, Disodium Phosphate, Lactose, Natural and Artificial Flavor, Dextrose, Tomato Powder, Spices, Lactic Acid, Artificial Color (Including Yellow 6, Yellow 5, Red 40), Citric Acid, Sugar, Garlic Powder, Red and Green Bell Pepper Powder, Sodium Caseinate, Disodium Inosinate, Disodium Guanylate, Nonfat Milk Solids, Whey Protein Isolate, and Corn Syrup Solids.
CONTAINS MILK AND WHEAT INGREDIENTS.
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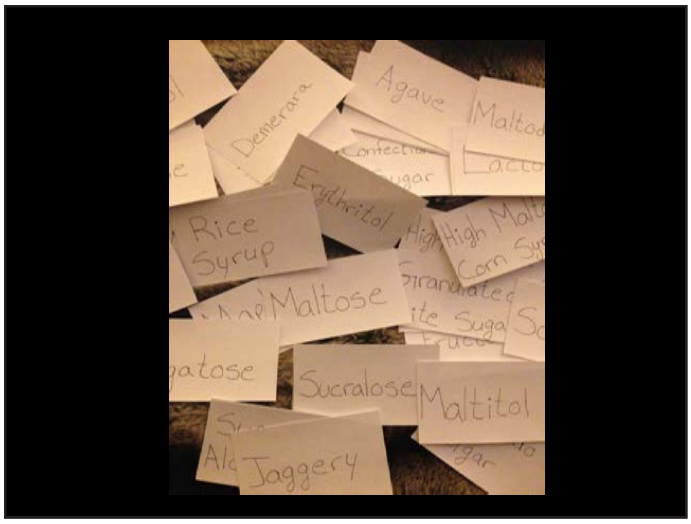
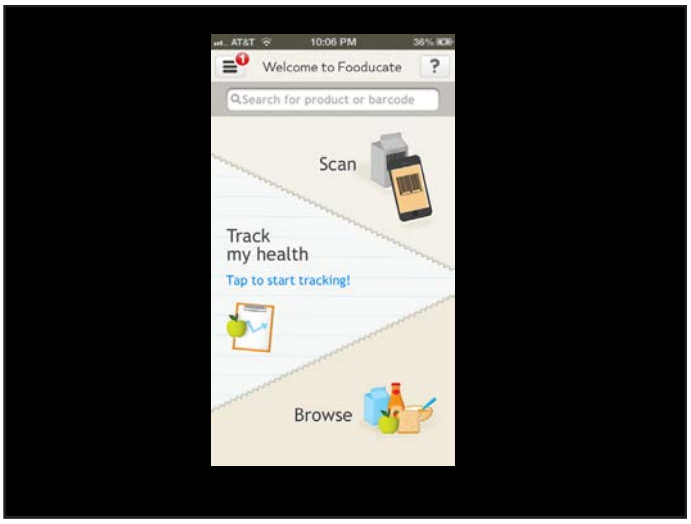
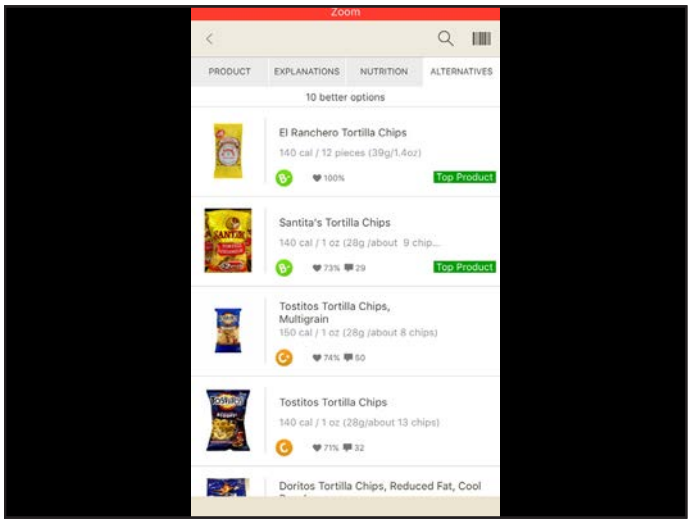
PLANO, TX 75024-4099

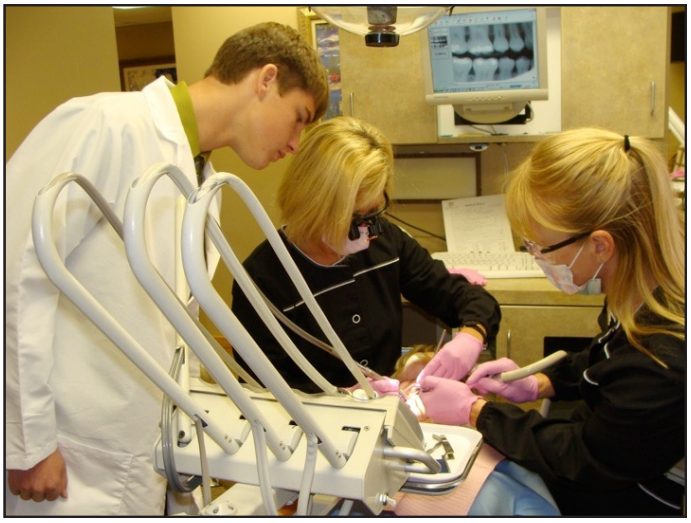

Doritos
Nacho Cheese
GARDEN of EATIN'
WHITE CHIPS
ALL NATURAL CANTINA CHIPS

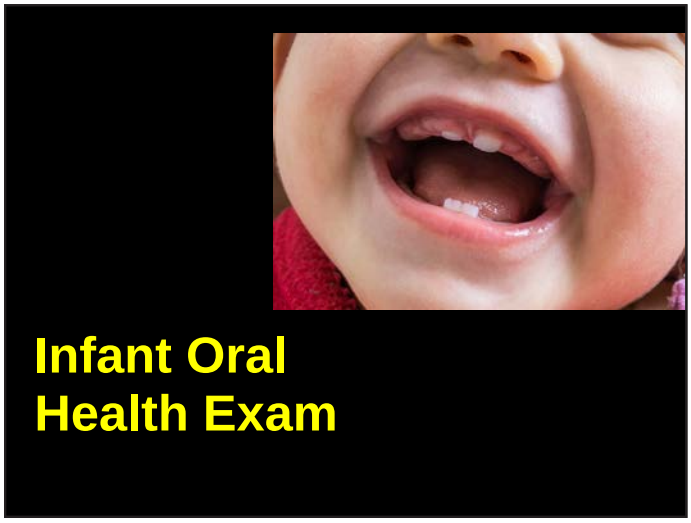

Agave
Rice Syrup
Maltose
Sucralose
Maltitol
Jaggery


AT&T
10:06 PM
36%
Welcome to Fooducate
Search for product or barcode
Scan
Track my health
Tap to start tracking!
Browse


Zoom
PRODUCT
EXPLANATIONS
NUTRITION
ALTERNATIVES
10 better options
El Ranchero Tortilla Chips
140 cal / 12 pieces (39g/1.4oz)
Top Product
Santita's Tortilla Chips
140 cal / 1 oz (28g /about 9 chip...
Top Product
Tostitos Tortilla Chips, Multigrain
150 cal / 1 oz (28g /about 8 chips)
Tostitos Tortilla Chips
140 cal / 1 oz (28g/about 13 chips)
Doritos Tortilla Chips, Reduced Fat, Cool


65



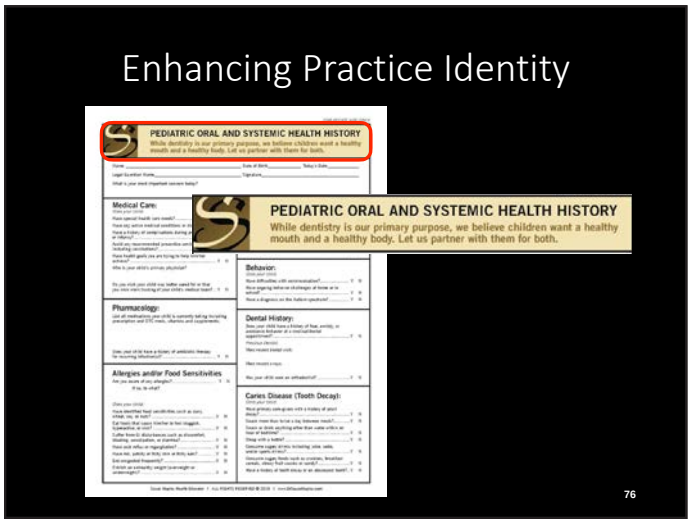

Infant Oral
Health Exam

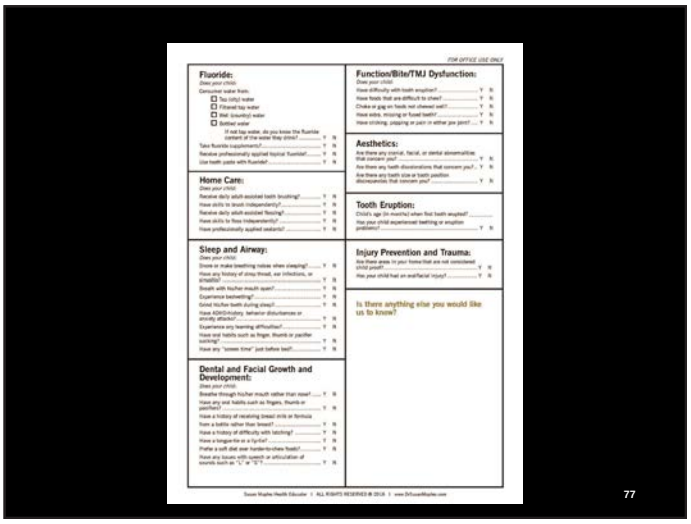

START BEFORE
year 1
This is our infant oral health program.


It's 100% Preventable!
72


Competitive Advantage
is doing what your competition is not willing to do!
73

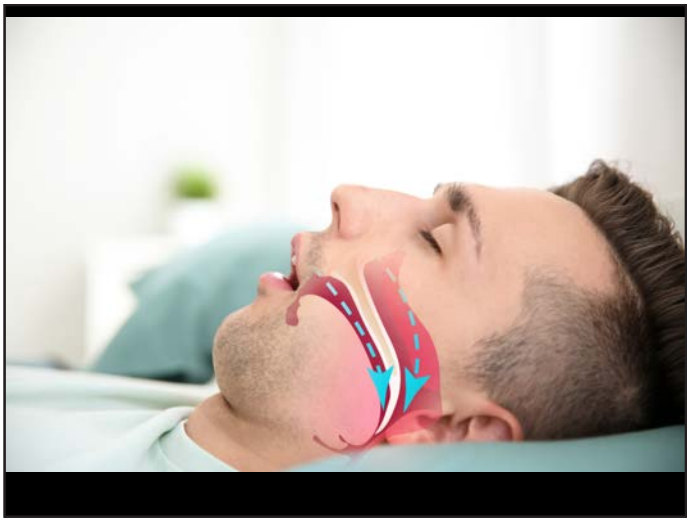

75


Enhancing Practice Identity
PEDIATRIC ORAL AND SYSTEMIC HEALTH HISTORY
While dentistry is our primary purpose, we believe children want a healthy mouth and a healthy body. Let us partner with them for both.
76


Fluoride:
Function/Bite/TMJ Dysfunction:
Aesthetics:
Home Care:
Tooth Eruption:
Sleep and Airway:
Injury Prevention and Trauma:
Is there anything else you would like us to know?
Dental and Facial Growth and Development:
77

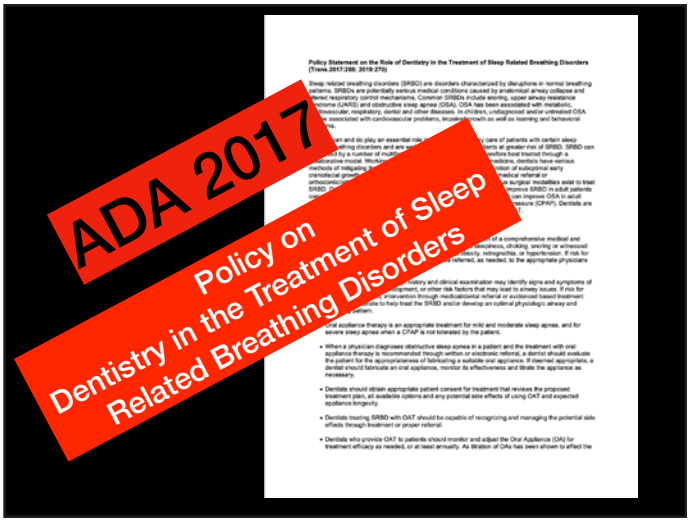
Pediatric Airway Evaluation

78



SDB Communications: SDBComm.com

80



Continuum of Sleep Disordered Breathing

Healthy Sleep → UARS (Upper Airway Resistance Syndrome) / Flow Limitation → Snoring with UARS/Flow Limitation → OSA Obstructive Sleep Apnea

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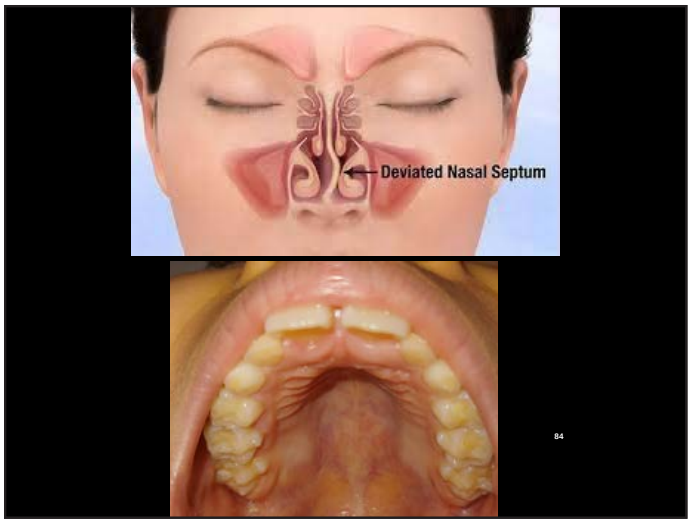
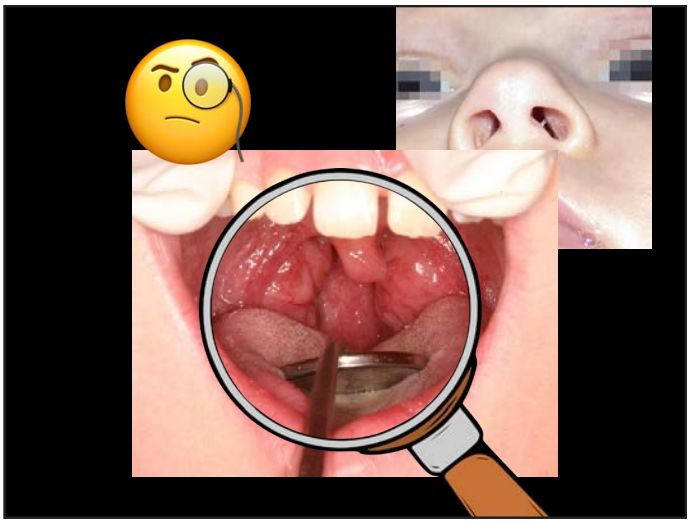
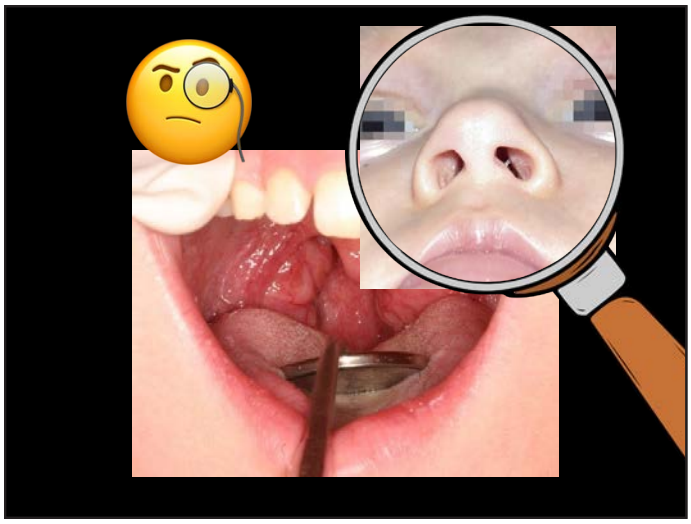
83







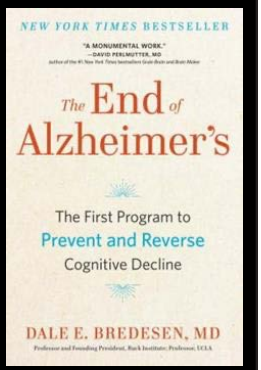
Record and Report

Children

- Myofunctional therapists-airway
- Pediatric Otolaryngologist (ENT)
- Allergist
- Pediatric and general dentists astute in airway
- Dental hygienists astute in airway
- Orthodontists astute in airway/ MMA
- Pediatricians
- Nurse Practitioners
- Lactation consultants (IBCLCs)
- Obstetricians
- Pediatric Cranial Osteopathic Physicians
- Speech/Language Pathologists

See Dr. Dale Bredesen at Collaboration Cures

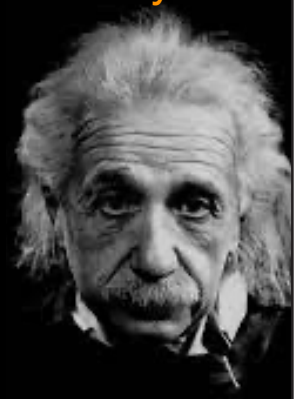
September 7-10, 2023
Orlando Florida

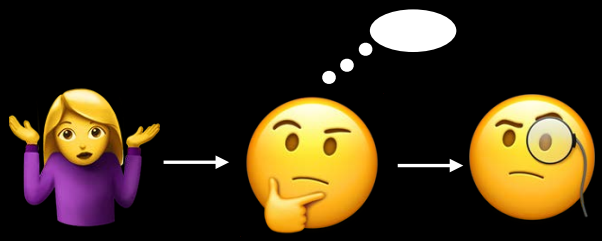


Intellectual curiosity

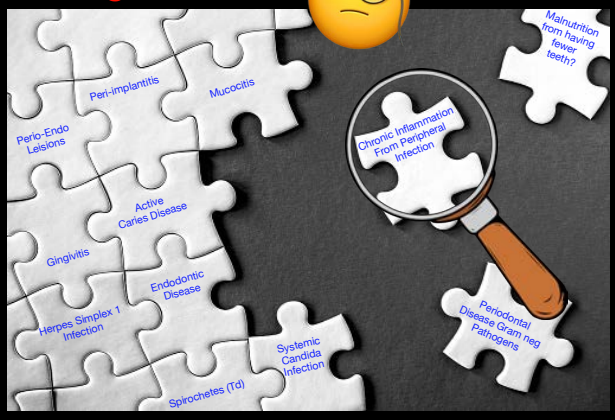
I am neither clever nor especially gifted. I'm only very, vey curious."

—Albert Einstein

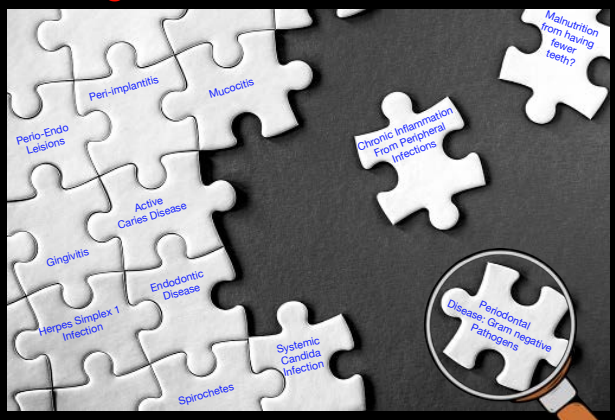




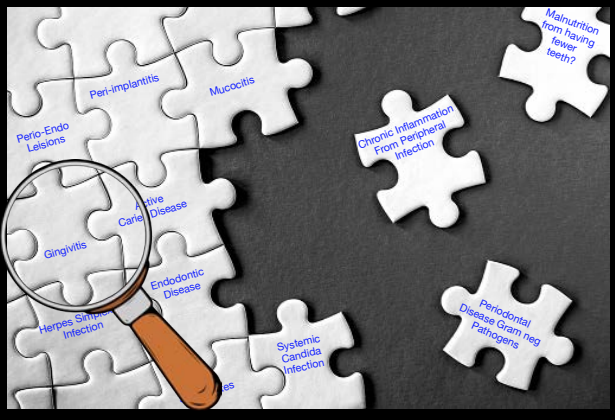
Etiological Puzzle



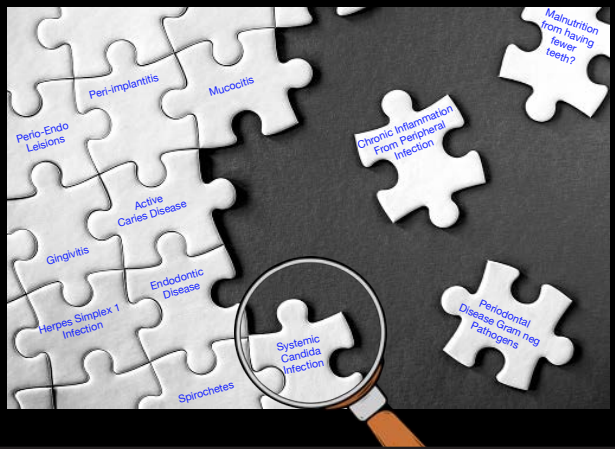
Etiological Puzzle

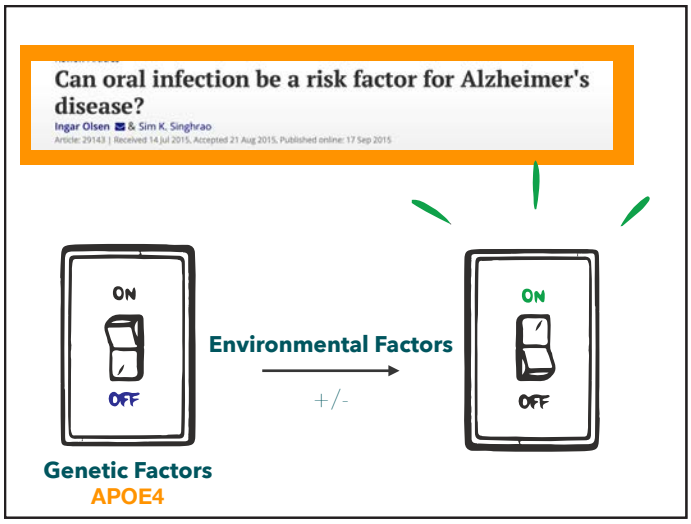


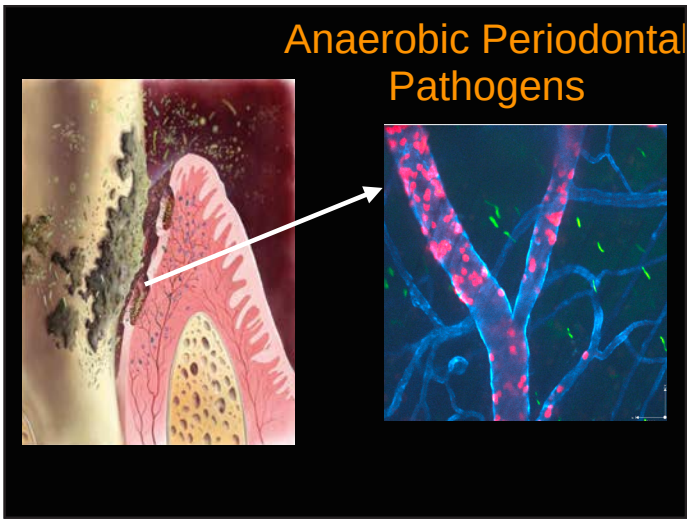
Etiological Puzzle

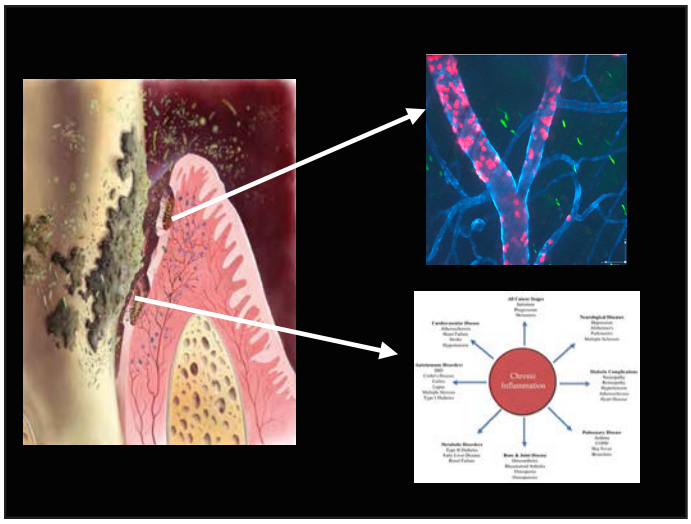


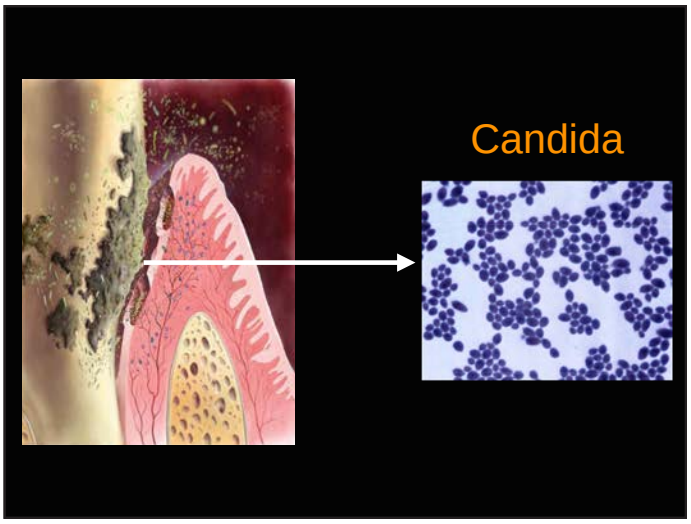
Etiological Puzzle





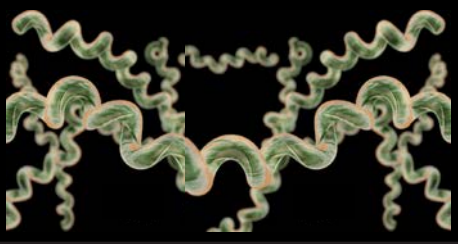


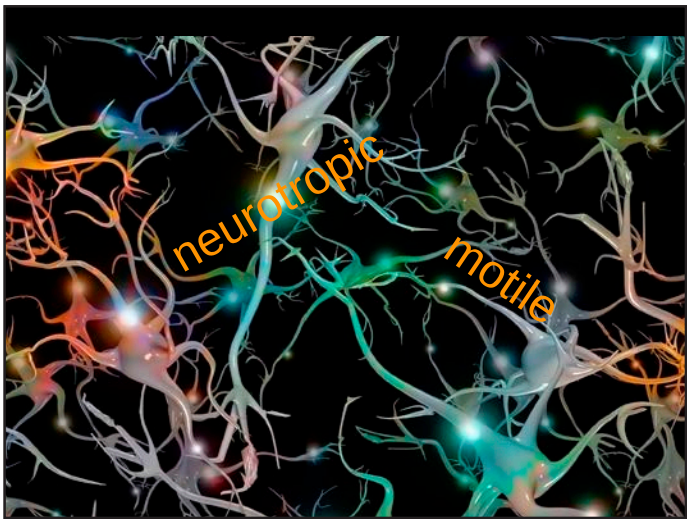


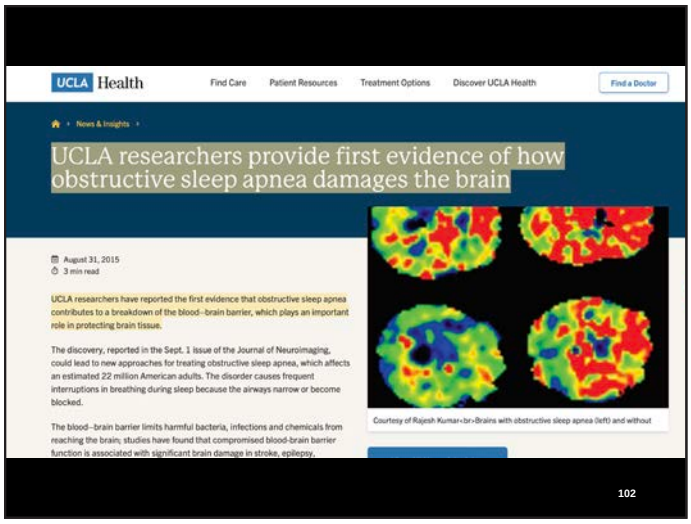


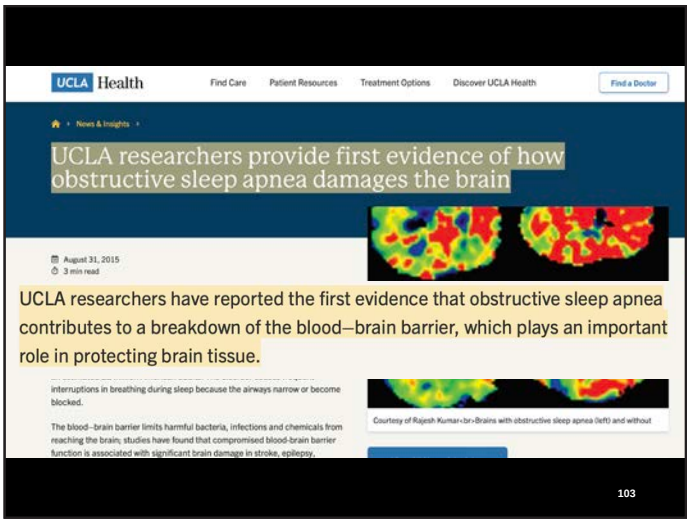
Indigenous vs. Pathogenic Bacteria

- Close to 900 identified bacterial species in the mouth
- Keystone Oral Pathogens in chronic periodontitis: Pg, Td, Aa, Fn
- Historic evidence that Spirochetes (such as Td) are both neurotropic and motile






UCLA Health
Find Care
Patient Resources
Treatment Options
Discover UCLA Health
Find a Doctor
UCLA researchers provide first evidence of how obstructive sleep apnea damages the brain
August 31, 2015
3 min read
UCLA researchers have reported the first evidence that obstructive sleep apnea contributes to a breakdown of the blood–brain barrier, which plays an important role in protecting brain tissue.
The discovery, reported in the Sept. 1 issue of the Journal of Neuroimaging, could lead to new approaches for treating obstructive sleep apnea, which affects an estimated 22 million American adults. The disorder causes frequent interruptions in breathing during sleep because the airways narrow or become blocked.
The blood–brain barrier limits harmful bacteria, infections and chemicals from reaching the brain; studies have found that compromised blood-brain barrier function is associated with significant brain damage in stroke, epilepsy,
Courtesy of Rajesh Kumar
Brains with obstructive sleep apnea (left) and without
102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Courtesy of Rajesh Kumar
Brains with obstructive sleep apnea (left) and without
103


Journal of Oral Microbiology
BROWSE
FOR AUTHORS
ABOUT T
Can oral infection be a risk factor for Alzheimer's disease?
Ingar Olsen and Sim K. Singhrao
Article
Abstract
Prevalence of AD
Neuropathological characteristics of the AD brain
The amyloid cascade hypothesis
The inflammatory hypothesis
Non-oral bacteria related to AD
Oral bacteria related to AD
Oral virus related to AD
Oral yeasts related to AD
Department of Oral Biology, Faculty of Dentistry, University of Oslo, Oslo, Norway; Oral & Dental Sciences Research Group, College of Clinical and Biomedical Sciences, University of Central Lancashire, Preston, UK
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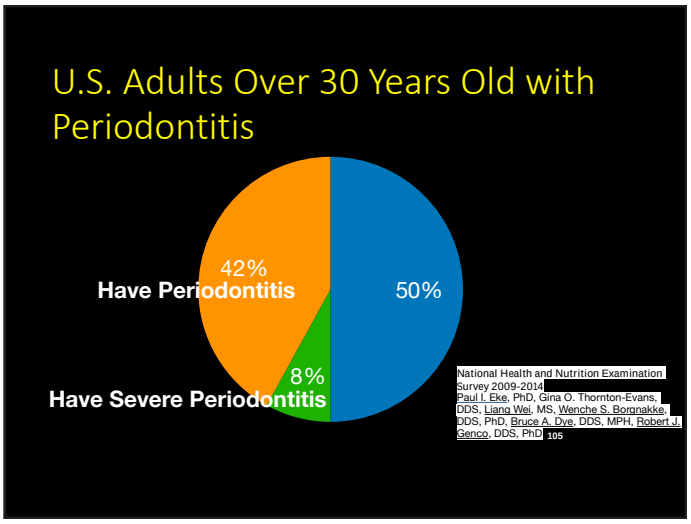
ABSTRACT
Alzheimer's disease (AD) is a scourge of longevity that will drain enormous resources from public health budgets in the future. Currently, there is no diagnostic biomarker and/or treatment for this most common form of dementia in humans. AD can be of early familial-onset or sporadic with a late-onset. Apart from the two main hallmarks, amyloid-beta and neurofibrillary tangles, inflammation is a characteristic feature of AD neuropathology. Inflammation may be caused by a local central nervous system insult and/or by peripheral infections. Numerous microorganisms are suspected in AD brains ranging from bacteria (mainly oral and non-oral Treponema species), viruses (herpes simplex type I), and yeasts (Candida species). A causal relationship between periodontal pathogens and non-oral Treponema species of bacteria has been proposed via the amyloid-beta and inflammatory links. Periodontitis constitutes a peripheral oral infection that can provide the brain with intact bacteria and virulence factors and inflammatory mediators due to daily, transient bacteremias. If and when genetic risk factors meet environmental risk factors in the brain, disease is expressed, in which neurocognition may be impacted, leading to the development of dementia. To achieve the goal of finding a diagnostic biomarker and possible prophylactic treatment for AD, there is an initial need to solve the etiological puzzle contributing to its pathogenesis. This review therefore addresses oral infection as the plausible etiology of late-onset AD (LOAD).
Keywords
periodontitis
+ Article Tools


U.S. Adults Over 30 Years Old with Periodontitis
42%
Have Periodontitis
50%
8%
Have Severe Periodontitis
National Health and Nutrition Examination Survey 2009-2014
Paul I. Eke, PhD, Gina O. Thornton-Evans, DDS, Liang Wei, MS, Wenche S. Borgnakke, DDS, PhD, Bruce A. Dye, DDS, MPH, Robert J. Genco, DDS, PhD
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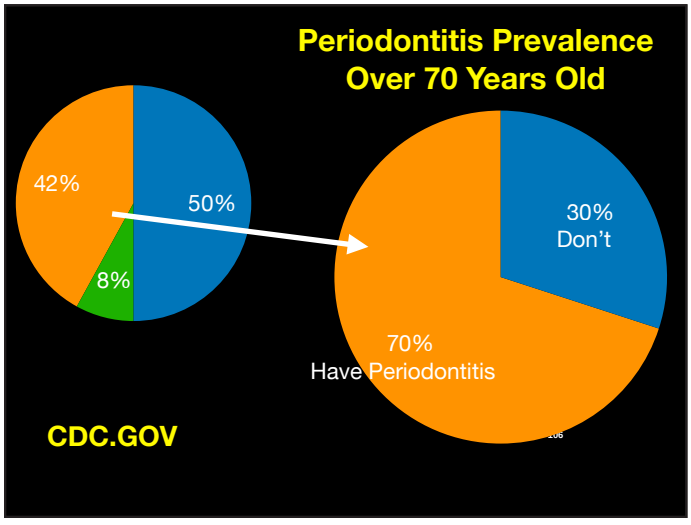
Periodontitis Prevalence Over 70 Years Old
42%
50%
8%
30%
Don't
70%
Have Periodontitis
CDC.GOV

"It is difficult to get a man to understand something when his salary depends on his *not* understanding it."

--Upton Sinclair

Getting off the Peri-Go-Round

Question:

What elements would we have to consider to ***truly*** create periodontal stability once and for all?

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Periodontal Disease Risk Factors

Oral Risk Factors

- Inflammation
  - mild mod severe
- Pocket depths (generalized)
  - mild mod severe
- Furcation involvement
  - mild mod severe
- Mobility
  - mild mod severe
- Root caries
- Gingival overgrowth/hyperplasia
- Salivary hypofunction
  - mild mod severe
- Suspicion of Candida
- Homecare skills/habit development
  - inadequate adequate
- Previous Perio Therapy

Systemic Risk Factors

- Suspicion of food sensitivities
- Suspicion of chemical sensitivities
- Metabolic disease
  - obesity/insulin resistance
  - pre-diabetes/diabetes
  - acid reflux
- A1C
- Physical difficulty/ poor manual dexterity
- Genetics
  - young age
  - parents or immediate family members that have lost teeth from gum disease
  - rapid or severe bone loss
- Tobacco or Cannabis use
- Polypharmacy
- Inflammatory Diet
- History of CVD
  - Hypertension
  - Hyperlipidemia
  - Previous Cardiac Event
- Suspicion of OSA or untreated OSA
- Depression
- Heightened Stress Factors

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Included in your periodontal therapy package:

- Periodontal examination and a complete clinical diagnosis
- Evaluation of all probable causes
- Saliva testing for identification of specific pathogens
- Saliva testing for identification of specific pathogens for your spouse/partner (if desired)
- Saliva testing for genetic predisposition to periodontal disease and cardiovascular disease (if suspected)
- Saliva testing for 9 possible fungal infections (if suspected)
- A1C finger stick blood testing (if you have two or more risk factors for Type 2 Diabetes)
- Risk evaluation for sleep disorders such as UARS and Obstructive Sleep Apnea
- Health coaching for lifestyle changes necessary for a positive outcome
- Dispensing of all necessary instruments for daily self-care (power brush, water pic and adjunctive instruments)
- Dispensing of necessary antimicrobial rinse(s)
- Fluoride Varnish and CTX gel
- Skill-building series of visits (as many as necessary *prior* to full mouth disinfection)
- High quality probiotics (as adjunctive therapy for antibiotic prescription)
- Consultation letter(s) and coordination with your other health care professionals
- Full mouth disinfection (including scaling and root planing)
- Collaboration between your hygienist and Dr. Susan/Dr. Tracey at each visit
- Saliva testing for specific pathogens, 6 weeks after all bleeding-on-probing is alleviated

Our intention is to work with you all the way to periodontal stability. Because bone doesn't grow back around your teeth, periodontal maintenance will be necessary for ongoing stability and the recommended frequency will be established on an individual basis. Our hope is to help you achieve an optimal state of healing and treat your periodontal disease once and for the rest of your life.

Total Health Dentistry
Susan Maples, DDS | Tracey Epley, DMD

2101 N. Aurelius Rd., Ste. 1
Holt, MI 48842
(517) 694-0353
www.Total-Health-Dentistry.com

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SCAN THIS QR CODE FOR MORE SUPPORT MATERIALS

Never doubt that a small group of thoughtful, committed citizens can change the world; indeed, it's the only thing that ever has.

- Margaret Mead

SELF EVALUATION

Looking at the Mouth through Superpowered Eyes: Oral and Systemic Health Connections

1. T/F - As a population, people visit their hygienist/dentist more frequently than they visit any other health professional.

2. What percent of health care spending today is for diseases/conditions that are considered preventable?

a. 10%
b. 25%
c. 50%
d. 75%

3. T/F - Most lifestyle related diseases are steadily increasing in prevalence while Caries Disease, Periodontal Disease and Oral Pharyngeal Cancer are on the decline.

4. Chronic disease prevalence in today's world is thought to be primarily related to:

a. Lack of adequate scientific research
b. Lack of pharmacological solutions
c. Ultra-processed food replacing whole foods
d. Transmissibility of infectious disease agents

5. According to the American Dental Association, American Pediatric Dental Association and the American Pediatric Medical Society all have policy recommendations that children establish a dental home and be examined:

a. By the child's third birthday
b. By the child's second birthday
c. By the child's first birthday
d. By one years old if the parent/guardian notices any signs of dental decay

6. T/F - Early Childhood Caries (ECC) is the single most prevalent disease among children in the U.S.

7. Selective Polishing means:

a. We should be polishing only the areas that are stained, for esthetics
b. We should be polishing teeth only for patients who select that service
c. We should be polishing only if the patient refuses to brush their teeth

8. T/F - Hands-on learning tends to be a more effective way to teach children (and adults) indelible lessons than teach-and-tell learning

9. A periodic examination should include everything EXCEPT:

a. A good neck exam
b. Inspection of the nose, especially looking for nasal patency
c. Measuring the distance between the eyes
d. Airway Evaluation

10. T/F - The potential for the preventive dental appointment to help patients regain their health is growing in awareness amongst the public.

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

Ericka Aguilar

Ericka Aguilar, of Riverside, California, has over 20 years experience in the dental industry assisting dentists in improving their key performance indicators by providing guidance on dental billing and coding. She is the owner of Hidden Dental Profits, a business specializing in dentists streamlining and improving the dental billing cycle processes and enhancing their revenue from dental insurance.

You may contact Ms. Aguilar with your comments or questions at 951-416-5106 or by email at billingcoach@hiddendentalprofit.com

Fortune Billing Solutions
8175 Limonite Ave Ste A9
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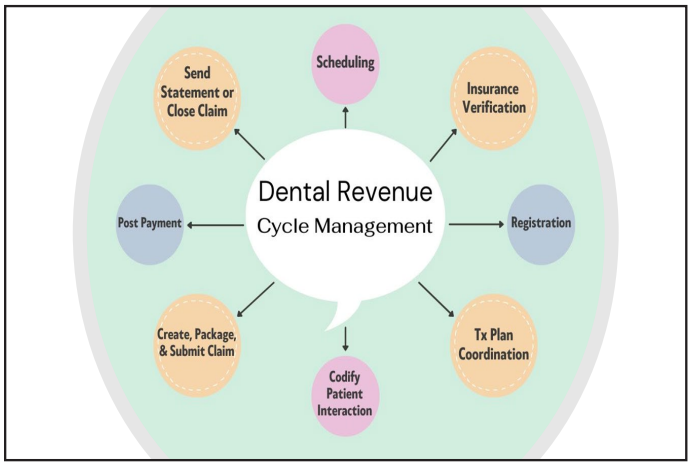
Dental Practice Revenue Cycle Management and Optimization – Parts 1 & 2

Ericka Aguilar



Revenue Cycle Management

Defined as all administrative and clinical functions that contribute to collection of patient services.

Entire cycle from creation of charges to creation of payment.

Denial management.

Mis-management of the RC will lead to messy A/R!

What Does a Healthy Billing Department Look Like?

- Insurance account receivable performance
  - 90+ Column < 3%
  - 60-90 < 5%
  - 0-30 > 92%
- Claim days in A/R: 7-15
- Perio performance percentage: 60% or better

Zip:	19063	City, ST	Media, PA						
Date Range:	05/06/2023 - 05/06/2024								
Code	Quantity	Avg Fee	UCR	80th Percentile	Actual %	Current Usage	20% usage	40% usage	
D1110	1532	$ 67.30	$ 133.00	$ 143.00	66%				
D0120	1266	$ 33.87	$ 80.00	$ 83.00	74%				
D2950	946	$ 202.67	$ 473.00	$ 417.00	98%	106.77%			
D2740	886	$ 917.74	$ 1,756.00	$ 1,670.00	88%				
D4341	774	$ 183.83	$ 486.00	$ 382.00	100%				
D4910	571	$ 97.87	$ 167.00	$ 206.00	20%				
D4346	72	$ 66.31	$ 144.00	$ 257.00	20%	4.70%	$ 15,543.06	$ 35,860.45	
D4342	43	$ 127.66	$ 393.00	$ 294.00	100%	2.81%	$ 33,625.64	$ 72,740.67	

Insurance A/R	# of Pages: 52		Percentage	Days in AR:	Perio Performance %	
Date: 04/17/2024	Total	$ 74,259.52		28	49% D4355	0
	0-30	$ 41,487.26	56%			
	31-60	$ 17,898.07	24%			
	61-90	$ 5,848.07	8%			
	91-120	$ 729.32	1%			
	121+	$ 8,296.80	11%			

Date Range:	04/17/2023 - 04/17/2024		
Gross Production:	$ 3,421,644.29	Gross Collection Percentage:	93%
Net Production:	$ 3,035,555.76	Net Collection Percentage:	105%
Ins Income:	$ 936,567.52	Ins Income Percentage:	29%
Total Income:	$ 3,178,723.14		

Zip:	20121	City, ST	Centreville VA						
Date Range:	09/29/2022 - 03/29/2024								
Code	Quantity	Avg Fee	UCR	80th Percentile	Actual %	Current Usage	20% usage	40% usage	
D0120	2130	$34.90	$78.00	$82.00	72%				
D1110	2294	$66.96	$128.00	$142.00	58%				
D4342	425	$106.48	$374.00	$292.00	100%	18.53%	$ 3,599.02	$ 52,452.05	
D2740	286	$920.27	$1,638.00	$1,658.00	77%				
D2950	277	$180.73	$371.00	$414.00	58%	96.85%			
D4341	267	$177.17	$402.00	$379.00	88%				
D4346	0	$0.00	$217.00	$255.00	38%	0.00%	$ 58,740.16	$117,480.33	
D4910	649	$96.70	$204.00	$205.00	79%				

Insurance A/R	# of Pages: 15		Percentage	Days in AR:	Perio Performance %:	
Date: 03/29/2024	Total	$ 150,837.94		40	37% D4355	2
	0-30	$ 78,396.28	52%			
	31-60	$ 33,931.50	22%			
	61-90	$ 3,287.00	2%			
	90+	$ 35,223.16	23%			

Zip:	98607	City, St	Camas,WA				
Date Range:	11/1/2019 - 4/30/2021						
Code	**Quantity**	**Avg Fee**	**UCR**	**80th Percentile**	**Actual %**		
D0120	3291	$ 79.28	$ 85.00	$ 70.00	96%		
D1110	3282	$ 124.19	$ 130.00	$ 119.00	90%	Current Usage	40% usage
D4342	223	$ 197.15	$ 225.00	$ 254.00	55%	6.79%	$ 214,854.07
D2740	243	$ 1,201.44	$ 1,250.00	$ 1,437.00	38%		
D2950	300	$ 268.95	$ 300.00	$ 346.00	42%	123.46%	
D4341	99	$ 226.97	$ 250.00	$ 337.00	30%		
D4910	636	$ 189.70	$ 195.00	$ 179.00	91%		
Happy Visit	2						
Insurance A/R		15 Pages		Percentage		**Days in AR:**	**Perio Performance %:**
Date:	Total	$ 83,278.42				18	22.59%
5/14/2021	0-30	$ 54,128.02		65.00%			
	31-60	$ 3,510.90		4.22%			
	61-90	$ 987.00		1.19%			
	90+	$ 24,652.50		29.60%			
Annual Income:		$ 1,733,855.61			Collection Percentage		74.54%
			$ 776,113.09				
Date Range:	5/13/20 - 5/13/21						
Claim Form:	2012 as default						
Downgrades:	not set up for crowns						
Documentation	leaving money on the table						

ICD-10 Diagnosis Codes

What are ICD- 10 Codes?

A code set maintained by Federal government and representatives from the Centers for Medicare and Medicaid Services (CMS) and the Centers for Disease Control (CDC).

Are Diagnosis Codes Required On A Dental Claim form?

Implementing Diagnosis Codes

Let's Connect!

- Ericka Aguilar – LinkedIn
- Email: Ericka@veritasdentalresources.com
- Call/Text 951-416-5106

SELF EVALUATION

Dental Practice Revenue Cycle Management and Optimization – Parts 1 & 2

1. What is the necessary component for an insurance breakdown of benefits?

a. The patient's DOB
b. The practice name
c. Customized questions

2. T/F - Coding profile helps you understand which codes you are using on a regular basis.

3. Why is it important that you enter the breakdown of insurance information into the practice management software?

a. For treatment plan accuracy
b. For coding accuracy
c. For billing accuracy

4. T/F - Clinical documentation that is lacking effects billing outcomes.

5. T/F - When posting a payment, sometimes you also need to close the claim.

6. How many columns does an insurance AR report have?

a. 5
b. 2
c. 3

7. T/F - Perio performance percentage represents the percentage of perio we are treating in comparison to regular prophies.

8. The 0-30 Day Column Should be Performing at Which Minimum Percentage?

a. 33%
b. 50%
c. 92 %

9. Why is it important to update your claim form?

a. To confuse the insurance company
b. To reduce the possibility of a denial or rejection
c. To ensure that we get paid on the highest fee schedule

10. What is the correct benchmark for the 61-90-day insurance AR column?

a. 20%
b. 5%
c. 3%

11. Messy Insurance Account Receivable Reports are Breeding Ground for:

a. Office Managers
b. Billers
c. Embezzlers

12. What is the ideal days in AR?

a. 7
b. 10
c. 15

13. Why is perio performance important?

a. For patient education
b. To get paid for what we do
c. To understand how we are treating our patients

14. T/F - The ideal percentage for the 90 days or greater insurance AR column is 3% or less.

Answer Key: 1. C, 2. T, 3. A, 4. T, 5. T, 6. C, 7. T, 8. C, 9. B, 10. B, 11. C, 12. B, 13. B, 14. T

Michael J. Howell, MD, FAAN, FAASM

Michael J. Howell, MD, FAAN, FAASM, of Minneapolis, Minnesota, is an associate professor of Neurology at University of Minnesota where he is the Vice-Chair for Education. He is board certified in both neurology and sleep medicine and is a fellow of the American Academies of both specialties. Dr. Howell is a frequent international speaker, a co-investigator of numerous research projects, widely published and co-founder and president of Sleep Performance Institute.

You may contact Dr. Howell with your questions and comments at remwalkers@gmail.com.

Common Sleep Disorders and Their Management

Contents

- Recent insights on the functions of sleep
- Sleep Disorders
  - Their Burden and Impact
  - Can't Fall (or stay) Asleep
  - Too Sleepy
  - "Something Weird is Happening" Sleepwalking and related disorders

Why do we sleep?

Functions of Sleep

Adaptive Inactivity
Memory Consolidation
Synaptic Homeostasis
Replenish CNS ATP
Toxic Clearance

Functions of Sleep

Adaptive Inactivity
Memory Consolidation
Synaptic Homeostasis
Replenish CNS ATP
Toxic Clearance

(Seigel JM, Nat Rev Neurosci 2009)

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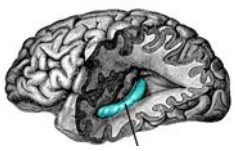
Functions of Sleep

Adaptive Inactivity
Memory Consolidation
Synaptic Homeostasis
Replenish CNS ATP
Toxic Clearance

(Walker MP, Prog Brain Res 2010)



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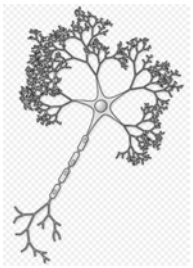
Functions of Sleep

Adaptive Inactivity
Memory Consolidation
Synaptic Homeostasis
Replenish CNS ATP
Toxic Clearance

(Tononi G, Cirelli C, Eur J Neurosci 2020)



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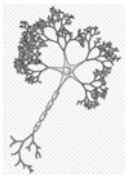
Synaptic Homeostasis

- Human Brain:
  - Most complicated system in the known universe
    - 100 trillion synaptic connections
  - During the day synapses are constantly growing but space is limited.
  - Synapses are pruned during deep NREM sleep leading to increased signal and decreased noise.

(Tononi G, Cirelli C, Eur J Neurosci 2020)



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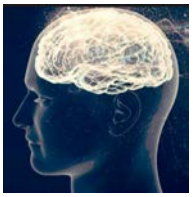
Functions of Sleep

Adaptive Inactivity
Memory Consolidation
Synaptic Homeostasis
Replenish CNS ATP
Toxic Clearance

(Huang, Curr Top Med Chem 2011)



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Functions of Sleep

Adaptive Inactivity
Memory Consolidation
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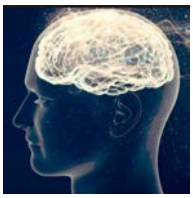
Replenish ATP
Toxic Clearance

(Nedergaard M, Goldman SA, Science 2020)



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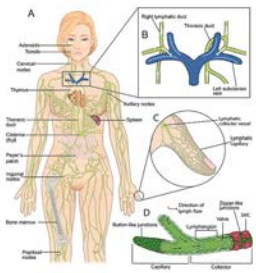
How does the brain clear waste proteins?

- The CNS does not transport proteins across blood brain barrier and there is no lymphatic extension to the CNS so how does it clear metabolic waste proteins?

(Nedergaard et al 2020)

The Lymphatic System

- Clearance of metabolic waste
- Described in the 5th century BCE



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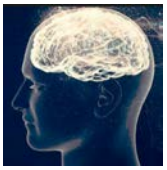
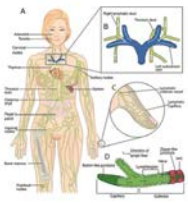
The Lymphatic System

- Clearance of metabolic waste
- Described in the 5th century BCE
- What about the brain?

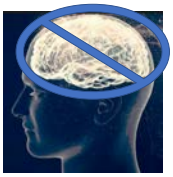


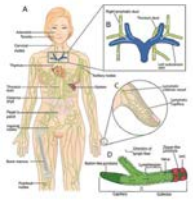


(Wikimedia Commons)

The Lymphatic System

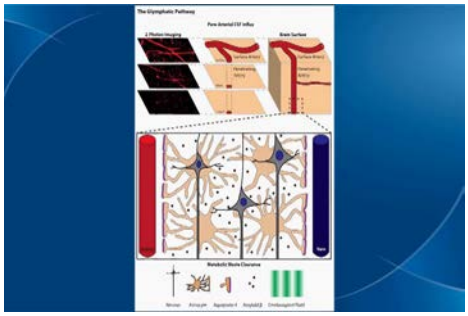
- Clearance of metabolic waste
- Described in the 5th century BCE
- Lymphatics do not extend to the Central Nervous System.





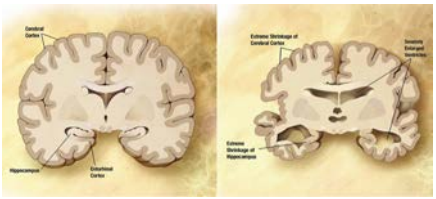
(Nedergaard et al 2020) (Wikimedia Commons)

Sleep and Toxin Clearance



Sleep and Dementia

Wikimedia Commons



(Nedergaard M, Goldman SA, Science 2020)

Sleep Disorders

Sleep Disorders

- **Their Burden and Impact**
- Can't Fall (or stay) Asleep Disorders
- Too Sleepy Disorders
- Dream Enactment and REM sleep Behavior Disorder

The Burden of Sleep Disorders

- Inadequate and poor-quality sleep is ubiquitous
  - Modern life has been structured so that sleep is dispensable
  - Exogenous light exposure is disrupting to natural circadian rhythms.
  - Caffeine is the most commonly consumed drug on the planet.
- Consequences…

Poor Sleep leads to… Sleepiness

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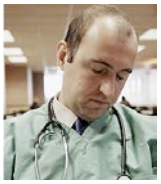

(AASM ICSD-3, 2015; Schneider, Continuum 2020)

Poor Sleep leads to… Inattention

- Loss of vigilance

(AASM ICSD-3, 2015; Schneider, Continuum 2020)

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Consequences of Sleepiness and Inattention

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(AASM ICSD-3, 2015; Schneider, Continuum 2020)

The prevalence and costs of sleep disorders

- 1 out of every 30 drivers admit to have falling asleep in the last month while driving.
- 20% of adolescent's have chronic excessive daytime sleepiness.

(Wickwire et al, Sleep Med Review 2016; McKinsey, Harvard Medical School 2010;
National Sleep Foundation, Sleep in America Pole, 2014)

Sleep Deprivation leads to… impulsiveness

- Poor food choices

(AASM ICSD-3, 2015; Schneider, Continuum 2020)

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Sleep Deprivation leads to… impulsiveness

- Risk taking behaviors

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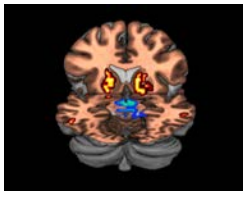

(AASM ICSD-3, 2015; Schneider, Continuum 2020)

Poor Sleep leads to… Depressed Mood

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(AASM ICSD-3, 2015; Schneider, Continuum 2020)

The Prevalence and costs of sleep disorders

- Sleep deprivation
  - 50-70 million Americans
- Insomnia
  - 30% of American adults have intermittent insomnia
  - 15% have chronic insomnia
  - Direct health care costs-$3 billion
  - Indirect costs US Economy-$32 billion

(Wickwire et al, Sleep Med Review 2016; McKinsey, Harvard Medical School 2010; National Sleep Foundation, Sleep in America Pole, 2014)

The Prevalence and costs of sleep disorders

- Obstructive Sleep Apnea as diagnosed by sleep study
  - 34% of adult men
  - 17% of adult women
- Obstructive Sleep Apnea Syndrome
  - 14% of adult men
  - 5% of adult women
  - Direct health care costs-$6 billion
  - Indirect costs US Economy-84 billion
    - Indirect health care costs $60 billion
    - OSA related motor vehicle accidents-$14 billion
    - Absenteeism $10 billion

(Wickwire et al, Sleep Med Review 2016; McKinsey, Harvard Medical School 2010; National Sleep Foundation, Sleep in America Pole, 2014)

Undiagnosed Sleep Disorders

80-85% of people with Obstructive Sleep Apnea are undiagnosed

Only 13% of those with insomnia will ever see a health care provider

Watson, et al. JCSM 2019

The Prevalence and costs of sleep disorders

- Restless Legs Syndrome
  - 5% general population
- REM sleep Behavior Disorder-dream enactment
  - 1% General Population
  - 5% Elderly

(AASM ICSD-3 2015)

Sleep Disorders

- Their Burden and Impact
- **Can't Fall (or stay) Asleep Disorders**
- Too Sleepy Disorders
- Dream Enactment and REM sleep Behavior Disorder

Can't Fall (or Stay Asleep)

- Troubles Falling Asleep
  - Hypervigilance-Psychophysiological Insomnia
  - Motor Restlessness (AKA Restless Legs Syndrome)
  - Delayed Circadian Rhythm
- Troubles Staying Asleep
  - Hypervigilance-Psychophysiological Insomnia
  - Advanced Circadian Rhythm

(AASM ICSD-3 2015)

Troubles Falling Asleep

- Hypervigilance-Psychophysiological Insomnia
- Motor Restlessness (AKA Restless Legs Syndrome)
- Delayed Circadian Rhythm

(AASM ICSD-3 2015)

CNS Hypervigilance-Psychophysiological Insomnia

- Difficulty falling asleep (often with trouble staying asleep as well)
  - At any time of the clock
  - 24-hour hypervigilance

(AASM ICSD-3 2015)

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Hypervigilance: more then a nighttime problem

- Insomnia Trap
  - Impaired mood caused by a poor night of sleep.
  - Growing anxiety over the course of a day regarding impending inability to fall asleep at night.
  - Nighttime hypervigilance makes it more difficult to fall asleep.

(AASM ICSD-3 2015)

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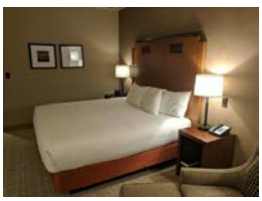
Bedroom Hypervigilance-A Conditioned Response



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Bedroom Hypervigilance-A Conditioned Response Requires

- Treatment requires positive conditioning of the bedroom environment
- Cognitive Behavioral Therapy for Insomnia

(Sutton, Ann Intern Med 2021)

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First step in CBT-I treatment:

- **Primum non nocere** – First do no harm
- Stop promoting the adverse conditioned response
  - Stop lying in bed when not sleeping
  - The bedroom should be reserved for sleeping and sexual activity.
- Often requires difficult behavioral change
  - Patient's often see recommendations as paradoxical

(Mitchel et al 2019)

CBT-T

- Cognitive Behavioral Therapy for Insomnia
  - Using Stimulus control, bedroom restriction and mindfulness you gradually decrease the adverse (wakeful) conditioning and promote positive (soporific) conditioning to the bedroom environment.
- The two essential rules:
  - Get out of bed if you are not sleeping
  - Don't fall asleep outside of the bedroom.

(Mitchel et al 2019)

Restlessness

- Common manifestation of atypical insomnia
- Often the only complaint is:
  "I can't fall asleep…"

(AASM ICSD-3 2015)

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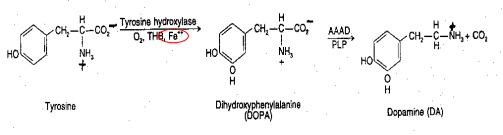
Restlessness

- Commonly due to iron deficiency



(AASM ICSD-3 2015)

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Restlessness

- Iron Replacement
  - Target Serum Ferritin to at least 75 micrograms/L
- Vitamin D is Synergistic

(Tutuncu M, Sleep Breath 2020; Silber MH, Mayo Clin Proc 2021;)

Wikimedia Commons

Restlessness

- More severe cases may need Rx
  - gabapentin, pregabalin
  - pramipexole, ropinerole (dopamine agonists)
  - Severe cases: methadone

(Silber MH, Mayo Clin Proc 2021)

Wikimedia Commons

Delayed Circadian Rhythm

- Common modern problem
  - May be the most common reason people have trouble falling asleep
- Trouble falling asleep at night and sleepy in the AM
- Living in the wrong time zone
- Delay in bodies 24-hour clock.

Galileo Spacecraft-NASA

(AASM ICSD-3 2015)

Delayed Circadian Rhythm

- Common modern problem
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- Living in the wrong time zone
- Delay in bodies 24-hour clock.

Galileo Spacecraft-NASA

(AASM ICSD-3 2015)

Delayed Circadian Rhythm-Treatment

- Bright light (sunlight or 10,000 lux light box light) for 30-60 minutes in the AM.
- Melatonin small doses (0.5-1.0mg) several hours before bedtime.

Galileo Spacecraft-NASA

Zee PC and Abbott SM, Continuum 2020

Troubles Staying Asleep

- Hypervigilance-Psychophysiological Insomnia
- Advanced circadian rhythm
- Insights from ultradian rhythms

(AASM ICSD-3 2015)

Can't Stay Asleep-Hypervigilance

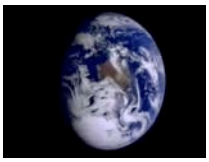
- Unable to Stay Asleep
  - Often combined with difficulty falling asleep
- Also, a conditioned hypervigilance
  - Cognitive Behavioral Insomnia

Wikimedia Commons

(AASM ICSD-3 2015)

Advanced Circadian Rhythm

- Common problem particularly middle aged and elderly
- Trouble staying asleep but also sleepy and tired in the evening.
- Living in the wrong time zone
- Advance in bodies 24-hour clock.



Galileo Spacecraft-NASA

(AASM ICSD-3 2015)

Advanced Circadian Rhythm

- Common problem particularly middle aged and elderly
- Trouble staying asleep but also sleepy and tired in the evening.
- Living in the wrong time zone
- Advance in bodies 24-hour clock.

Galileo Spacecraft-NASA

(AASM ICSD-3 2015)

Advanced Circadian Rhythm-Treatment

- Bright light (sunlight or 10,000 lux light box light) for 30-60 minutes in the evening.
- Stop evening melatonin

Galileo Spacecraft-NASA

(Zee PC and Abbott SM, Continuum 2020)

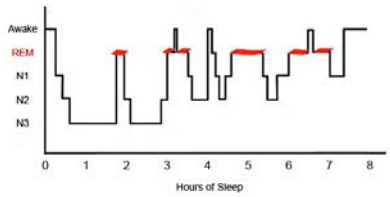
Advanced Circadian Rhythm-Treatment

- Bright light (sunlight or 10,000 lux light box light) for 30-60 minutes in the evening.
- Melatonin small doses (0.5-1.0mg) during a middle of the night awakening.
  - Do not take before bedtime as this will make an advanced rhythm worse!

Galileo Spacecraft-NASA

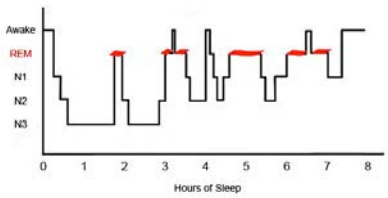
(Zee PC and Abbott SM, Continuum 2020)

Ultradian Rhythms-Normal Sleep Cycles



Wikimedia Commons

Ultradian Rhythms-Normal Sleep Cycles



Wikimedia Commons

- A brief awakening every 90 minutes or so does not, by itself, indicate pathology.

Sleep Disorders

- Their Burden and Impact
- Can't Fall (or stay) Asleep Disorders
- **Too Sleepy Disorders**
- Dream enactment and REM sleep Behavior Disorder

Too Sleepy

- Most Common Reason of excessive sleepiness

(AASM ICSD-3 2015)

Too Sleepy

- Most Common Reason of excessive sleepiness
  - Sleep Deprivation

(AASM ICSD-3 2015)

Too Sleepy

- Most Common Reason of excessive sleepiness
  - Sleep Deprivation
- Obstructive Sleep Apnea
- Narcolepsy and Related Disorders

(AASM ICSD-3 2015)

Snoring and obstructive sleep apnea (OSA)

- Collapse of the upper airway
- OSA is a common condition
  - Relative to a pliable upper airway evolved for vocalization
  - Higher risk: men, weight gain, family history, increased neck circumference.

(AASM ICSD-3 2015)

Wikimedia Commons

Home Sleep Apnea Testing (HSAT)

Acceptable alternative to PSG for diagnosing OSA for patients with high pre-test probability

Less night-to-night variability

Better patient acceptance

Lower cost

OSA-spectrum of disease

- Apnea-Hypopnea Index (AHI): number of times an individual stops breathing or nearly stops breathing per hour.
- Polysomnogram (sleep study) thresholds for diagnosis and severity (consensus based)
  - Ideal for adults: AHI < 5/hr
  - Mild: AHI 5-15/hr
  - Moderate: AHI 15-30/hr
  - Severe: AHI > 30/hr

(AASM ICSD-3 2015)

Wikimedia Commons

OSA Treatment Based upon Severity

- Mild
  - **Oral Appliance**
  - PAP
  - Positional Therapy
- Moderate
  - **Oral Appliance**, PAP, Upper Airway Surgery
- Severe
  - **Recommend PAP**
  - Oral Appliance and Upper Airway Surgery for Salvage or Combination Therapy

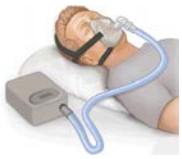
(Kirsch DB, Continuum 2020)

Wikimedia Commons

OSA-mechanical problem in need of a mechanical solution

- Positive Airway Pressure (PAP) Therapy
  - Seals over the nose or mouth/nose.
  - Acts as a pneumatic splint to the upper airv
- Adherence challenges
  - Works very well about 50% of the time.

(Kirsch DB, Continuum 2020)



Wikimedia Commons

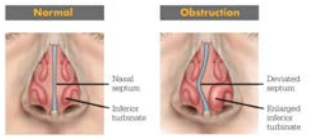
OSA-what to do when PAP is not working

- Consider that OSA is not the etiology to the patients' symptoms
  - Mild OSA is frequently found on a PSG.
    - Sleep Heart Health Study Data average AHI in US population older then 40 is 8.5 (mild OSA).
    - High likelihood that a patient with other underlying sleep or circadian rhythm problems will be given a diagnosis of OSA.
  - Medication effects
  - Suboptimal duration and/or circadian timing of sleep

OSA-what to do when Oral Appliance or PAP is not working

- Evaluate for possible nasal obstruction
  - Nasal endoscopy
- Relieve nasal obstruction- three benefits
  - Directly decreases AHI
  - Improve PAP and oral appliance treatment
  - Improved nasal breathing during the day

(Kirsch DB, Continuum 2020)



Wikimedia Commons

OSA-what to do when PAP is not working

- Consider oral appliance
  - Stabilize the mandible and prevent collapse
  - Similar to athletic mouthguards
- Consider upper airway stimulation
  - Stimulation of the hypoglossal nerve (CN XII).
  - Pacemaker for the tongue

Hypoglossal Nerve Stimulation

- Stimulation of the hypoglossal nerve (CN XII).
  - Moderate to Severe OSA
  - BMI < 40
  - Approximately 70% reduction of AHI.
  - Inspire and multiple devices in development.

(Gottlieb et al 2020)

Inspire System

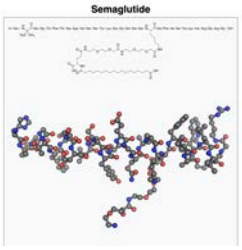
Weight Loss and OSA

- 70% of OSA patients are obese (BMI > 30)
- Bariatric surgery significantly reduces AHI
  - Bariatric surgery can result in 40-60% reduction in AHI.
- Glucagon-like Peptide-1 Receptor Agonists (GLP-1s)
  - Semiglutide, tirzepatide, exenatide,
  - increase pancreatic release of insulin
  - Also activate GLP 1 receptors in Central Nervous System
  - Promotes satiety driving weight loss

Am J Med 2009 Jun;122(6):535-42 Effects of surgical weight loss on measures of obstructive sleep apnea: a meta-analysis. Greenburg DL, et al

GLP-1's and OSA

- Approximately 3% drop in AHI for each 1% drop in BMI
  - BMI drop typically 10-20% so can expect 30-60% drop in AHI.
- Complications
  - > 50% intolerance rate
  - Loss of lean body tissue (approximately 40% of total weight loss)
    - Muscle/tendon
    - Bone
    - Recommend following with DEXA scans
    - ? Effect upon upper airway muscle tone.



(Wikimedia Commons)

(McCrimmon et al 2020, Wilding et al 2021, Prime Therapeutics 2023)

Sleep Disorders

- Their Burden and Impact
- Can't Fall (or stay) Asleep Disorders
- Too Sleepy Disorders
- **Dream Enactment and REM sleep Behavior Disorder**

Dream Enactment

- Dream enactment is often underreported
  - Embarrassment
  - No bedpartner to witness behaviors
  - Mild behaviors
  - Misattribution to mental illness
  - Cultural taboos regarding disclosure of bedroom activities
  - Assign supernatural or religious explanation to these behaviors

(AASM ICSD-3 2015, Howell, Continuum 2020)

REM sleep Behavior Disorder

- REM sleep Behavior Disorder (RBD)
  - Loss of normal REM Sleep paralysis
  - Results in dream enactment, often vigorous, violent and potentially injurious to patients and bed partners.
    - 1% of the general population
    - 5% of elderly
  - Easy to awaken, clearly recall dream and behaviors
  - Occurs in the second half of the night
- Commonly occurs in the setting of SSRI medication.

REM sleep Behavior Disorder-treatment

- Bedroom safety
  - Discuss sleeping separately from bed partners
- Melatonin in high doses 6-18mg at bedtime
- Clonazepam in low doses 0.25-1.0mg at bedtime
  - Morning sedation, balance difficulties, depression
- Rivastigmine Patch 4.6mg-13.3mg per day.

RBD-Prodromal syndrome

- RBD is a prodromal syndrome for Parkinson's disease (PD) and related neurodegenerative disorders.
  - Dementia with Lewy Bodies
  - Multiple System Atrophy
- Etiology-progressive alpha synuclein pathology.
  - Historically approximately 75% of surviving RBD patients convert to neurodegenerative disorder in approximately 15 years.

(Charcot 1879)

REM sleep Behavior Disorder-Hope for a cure

- Important to have often extended conversation to help understand their risks.
  - Loss of smell and constipation places an individual at higher risk for conversion within 5 years.
  - SSRI induced RBD appears to be lower risk.
    - Any individuals with SSRI induced RBD interested in NIH funded research on this question may contact me at howel020@umn.edu

SELF EVALUATION

Common Sleep Disorders and Their Management

True/False

1. Sleep serves several important purposes including, memory consolidation and synaptic downscaling?

2. Sleep disorders are rare?

3. Individuals with psychophysiological insomnia have trouble falling asleep and trouble staying asleep?

4. Restless Legs Syndrome is commonly caused by a copper deficiency?

5. Oral appliance therapy provides patients an effective option for treating mild or moderate obstructive sleep apnea?

6. Dream enactment emerges out of NREM sleep?

7. REM sleep Behavior Disorder is commonly associated with an increased risk of Parkinson's disease.

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

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

Greater Patient Confidence through Uniform Diagnostic Criteria

A DOCTOR'S PERSPECTIVE ON TREATMENT ACCEPTANCE AND PRACTICE MANAGEMENT

5 WAYS TO

GROW

A PRACTICE

1. Increase your number of new patients
2. Increase your capacity to do more dentistry
3. Increase your number of high profit procedures
4. Calibrate your diagnostic criteria
5. Increase your case acceptance rate.

Smile Potential - Coaching@SmilePotential.com 2

SUCCESS FORMULA

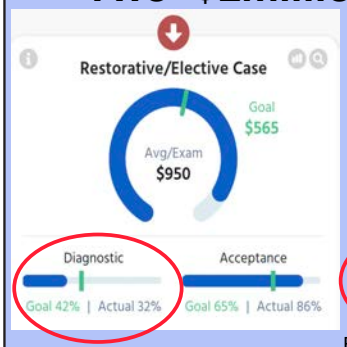
TREATMENT DIAGNOSED X TREATMENT ACCEPTANCE = TREATMENT PERFORMED

You've got to be in it to WIN it.

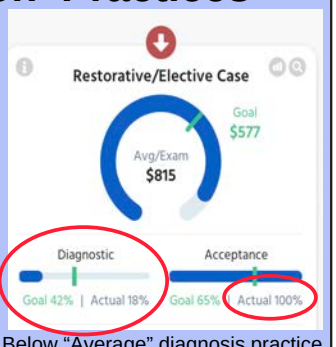
DENTAL CARE BENCHMARKS™

	Bottom 10%	Average	Top 10%
Practice			
Growth	-9%	3%	26%
Attrition	43%	27%	14%
Pre-Appointment %	30%	52%	70%
Restorative			
Case Diagnostic %	10%	34%	54%
Case Acceptance %	21%	39%	58%
Avg. $ / Exam	$277	$628	$938
Hygiene			
Hygiene $ / Visit	$76	$112	$170
Hygiene Re-Appointment %	51%	74%	90%
Perio %	3%	16%	33%

Two $1million Practices

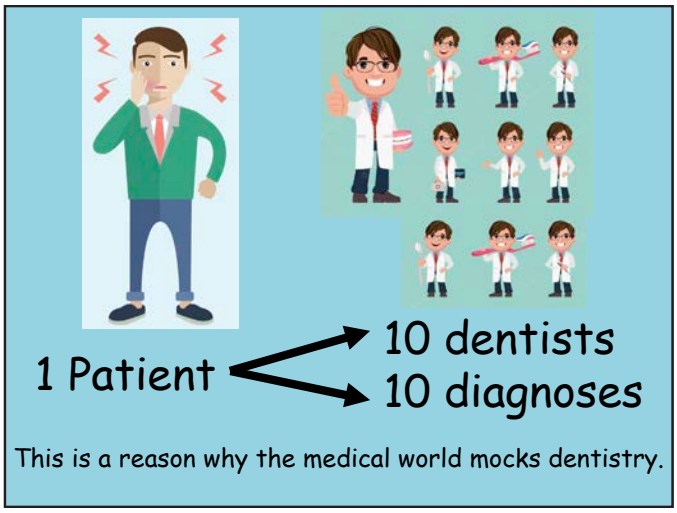


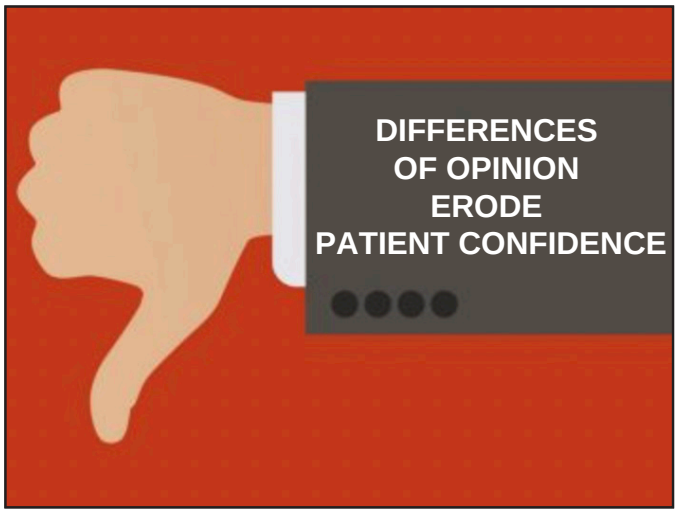
"Average" diagnosis practice



Below "Average" diagnosis practice
If diagnosis were brought up to just 30%, production would climb to $1.67million


6?
6!
9!
Do we have universal diagnostic criteria? ...and treatment?


1 Patient
10 dentists
10 diagnoses
This is a reason why the medical world mocks dentistry.


DIFFERENCES OF OPINION ERODE PATIENT CONFIDENCE


Hmm? vs Aha!

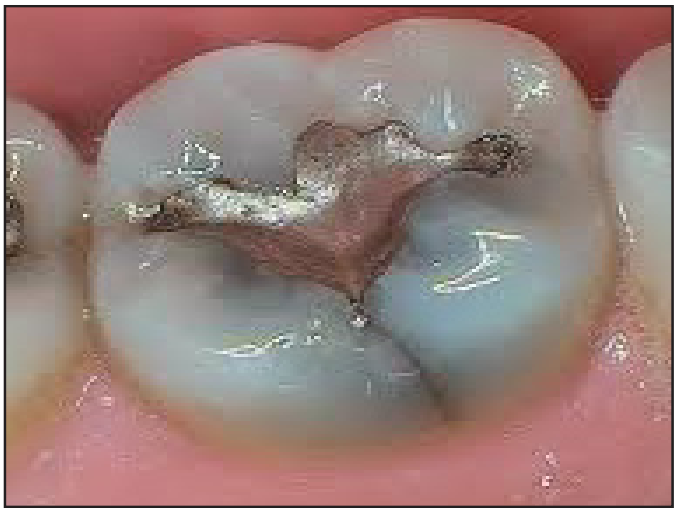

CONSERVATIVE ?
AGGRESSIVE ?


PROTECTIVE !!!

Standardization of Care…

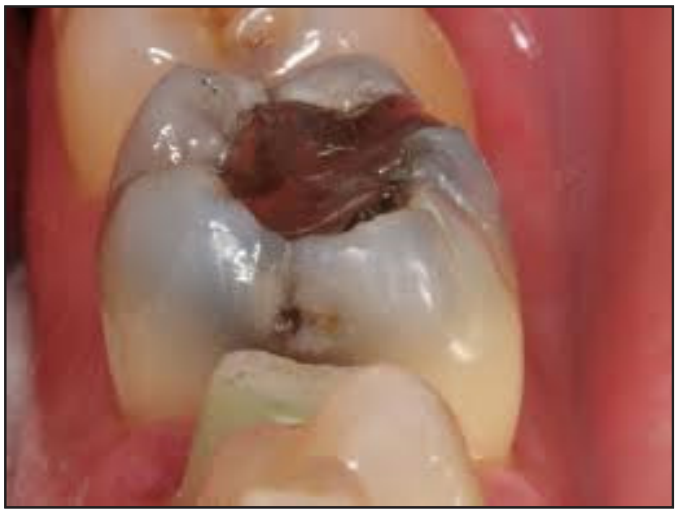
Complete Clarity

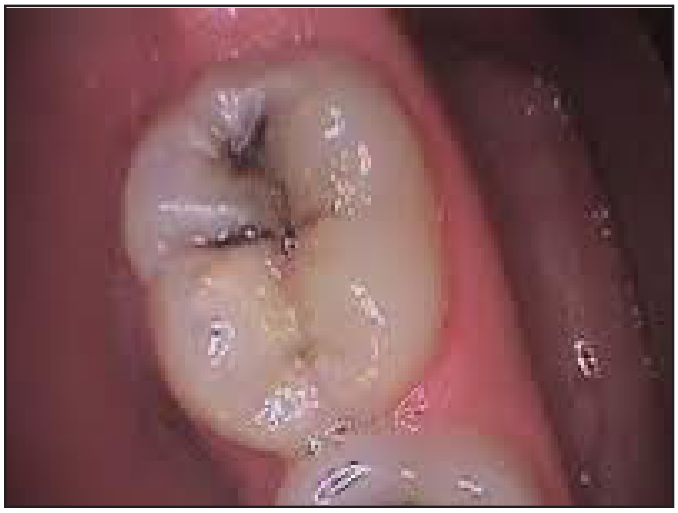
Diagnostic Criteria Photos

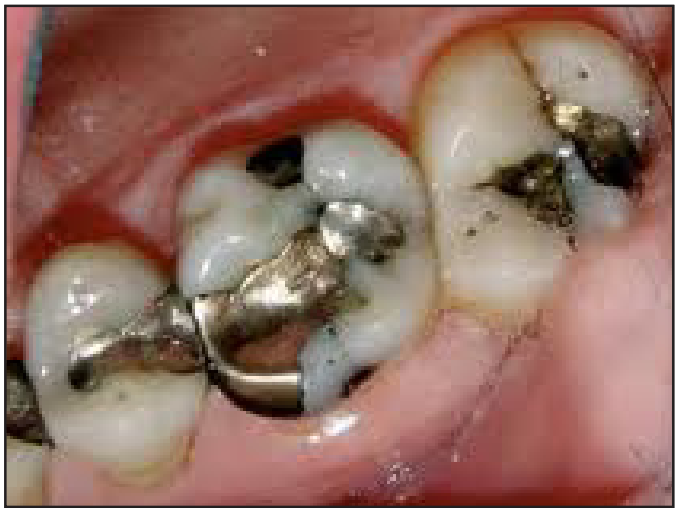


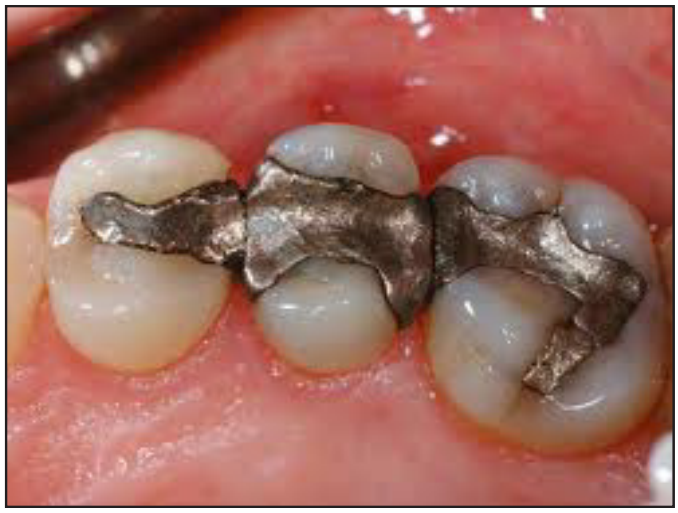
How often do you finding yourself sitting a patient up during an procedure to say:

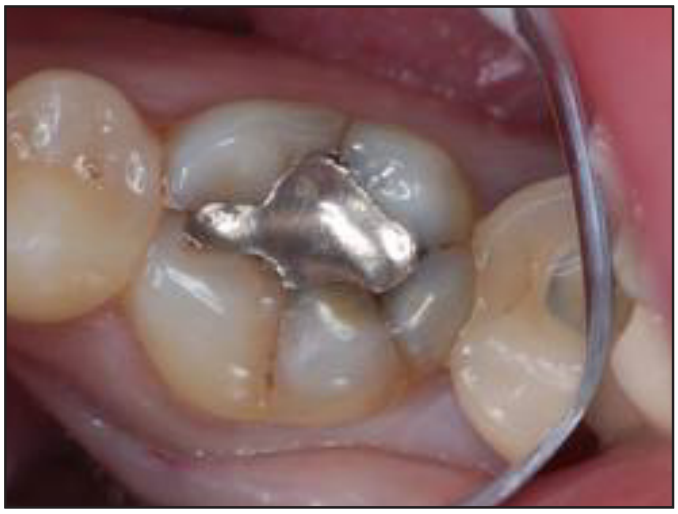
"I'm sorry to report that I have found some decay next to the tooth we are working on and I will need to do an additional restoration."
OR
"The decay on the tooth we are working on has gone deeper than we anticipated and now your tooth will also need a root canal."

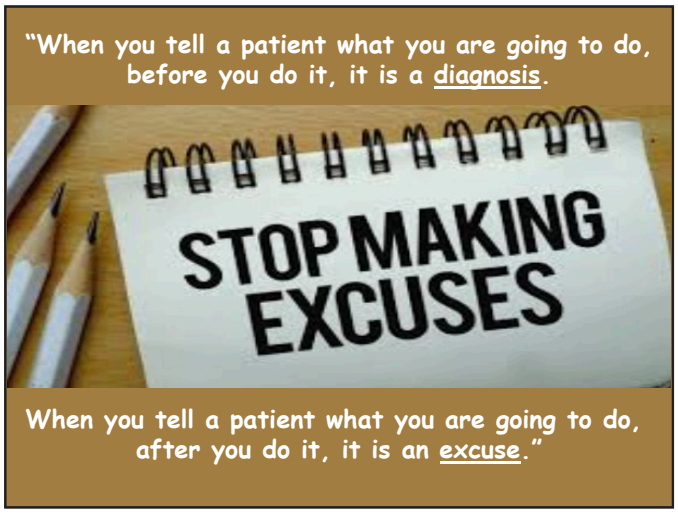


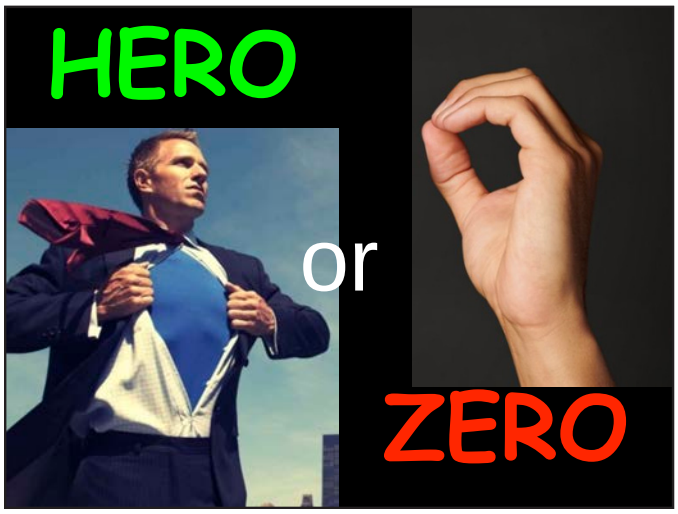


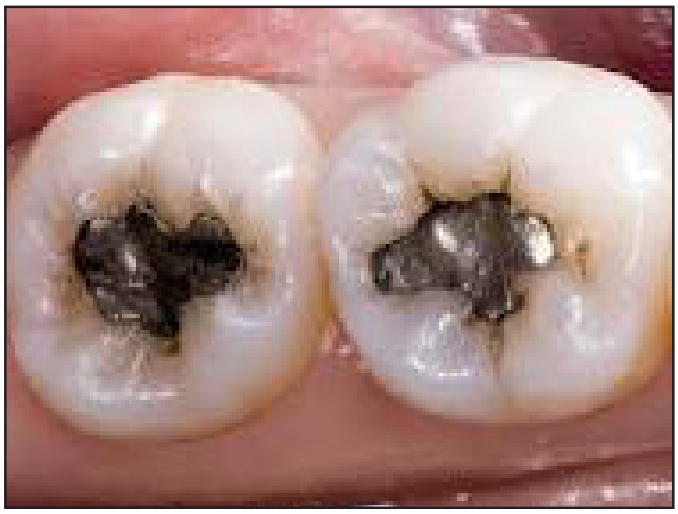




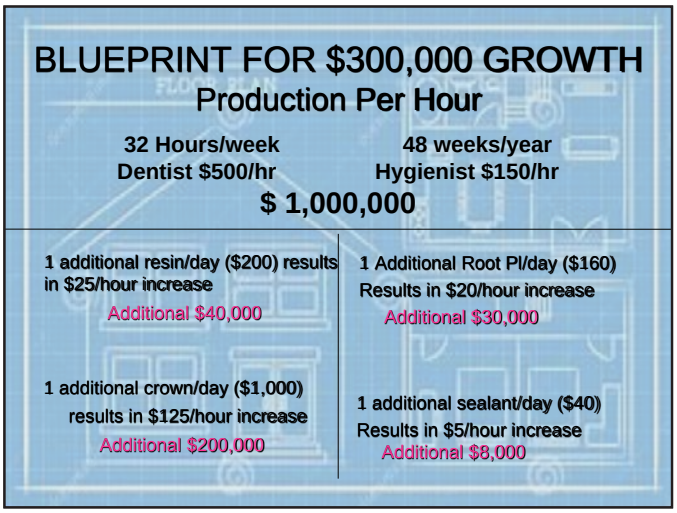



"When you tell a patient what you are going to do, before you do it, it is a diagnosis.
STOP MAKING EXCUSES
When you tell a patient what you are going to do, after you do it, it is an excuse."

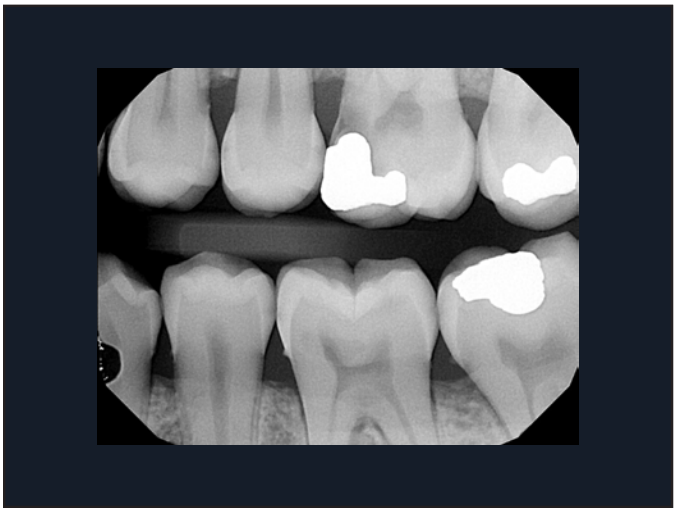

HERO
or
ZERO

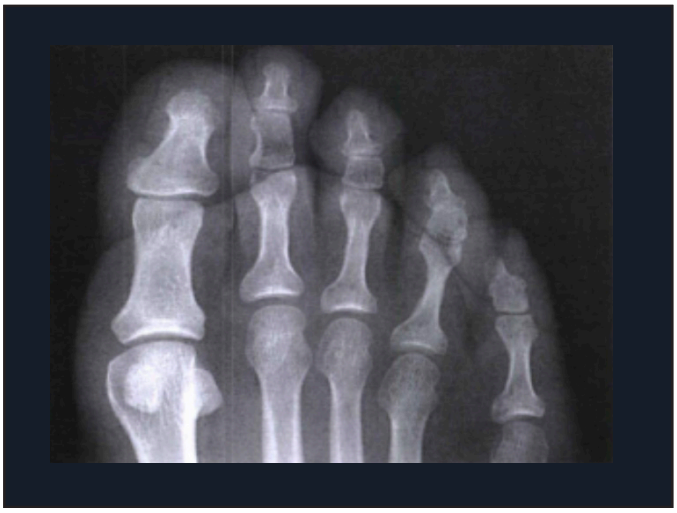


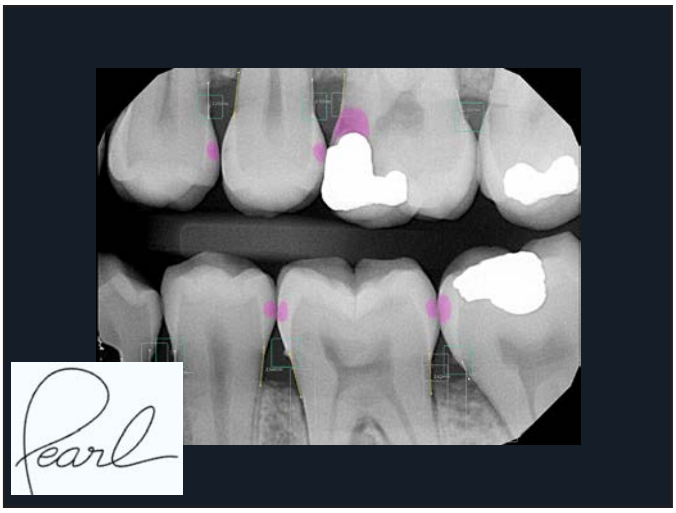

BEST CASE
WORST CASE
Treatment planning for worst-case scenarios…leads to…
Treatment completion with best-case outcomes.

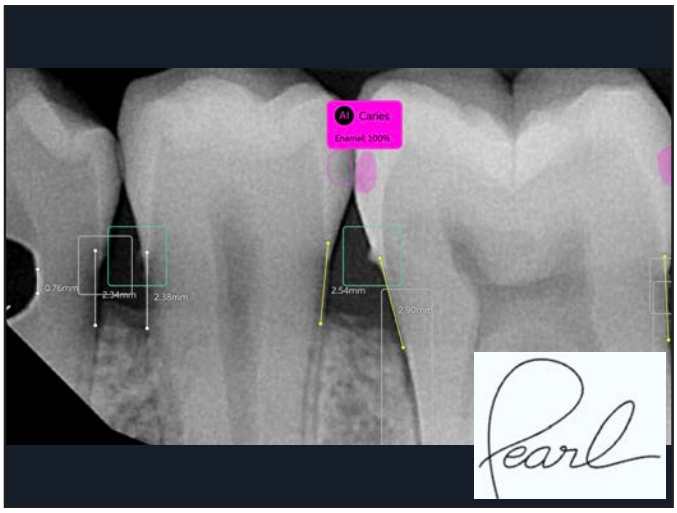

BLUEPRINT FOR $300,000 GROWTH
Production Per Hour
32 Hours/week
48 weeks/year
Dentist $500/hr
Hygienist $150/hr
$ 1,000,000
1 additional resin/day ($200) results in $25/hour increase
Additional $40,000
1 Additional Root Pl/day ($160)
Results in $20/hour increase
Additional $30,000
1 additional crown/day ($1,000)
results in $125/hour increase
Additional $200,000
1 additional sealant/day ($40)
Results in $5/hour increase
Additional $8,000


ARTIFICIAL INTELLIGENCE
IN DENTISTRY









ZOOM Review of Diagnostic Criteria Photos

To schedule your meeting:
Send text to 516-524-7573
Include your name, address
& the name of your practice.

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

Use QR code…

or send email to:
coaching@smilepotential.com

Include name and phone number.

SELF EVALUATION

Greater Patient Confidence through Uniform Diagnostic Criteria

1. Which two (2) strategies yield the most immediate results in growing a practice.

- **a.** Increasing your number of new patients
- **b.** Increasing your capacity to do more dentistry
- **c.** Increasing high profit procedures performed
- **d.** Calibrating your diagnostic criteria
- **e.** Increasing your case acceptance rate
- **f.** D & E

2. T/F - Differences of opinion between clinicians increase patient confidence.

3. Most practitioners prefer to think of themselves as being conservative diagnosticians and would prefer to not be thought of as aggressive. An alternative philosophy would be:

- **a.** Protective
- **b.** Selective
- **c.** Presumptive
- **d.** Decorative

4. T/F - Treatment planning for worst-case scenarios means that you automatically do the most aggressive treatment.

5. When you tell a patient what you are going to do before you do it, it is a diagnosis. When you tell a patient what you are going to do after you do it, it is a _____.

- **a.** Better plan
- **b.** Cover-up
- **c.** Educated guess
- **d.** Excuse

6. In order to increase productivity in a one-doctor, one-hygienist office by $300,000 you can:

- **a.** Significantly increase hours worked
- **b.** Look for daily opportunities to do one more crown, one or two more resins and one or two more periodontal procedures
- **c.** Drop all insurance plans
- **d.** Introduce a specialist to the practice

7. T/F - Artificial Intelligence can be used in dental diagnosis to standardize criteria between clinicians

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

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New York, NY 10010
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The Dental Malpractice Insurance Policy: What's Covered and What's Not

AMERICAN ASSOCIATION OF ORTHODONTISTS INSURANCE COMPANY
(A RISK RETENTION GROUP)

300 W. Clarendon Ave., Suite 240

Phoenix, AZ 85015

Orthodontist Professional Liability Insurance Policy

THIS IS A CLAIMS MADE POLICY.

Various provisions in this policy restrict coverage. Read the entire policy carefully to determine your rights and duties, and what is and is not covered.

Throughout this policy the words "you" and "your" refer to the named insured(s) shown in the Declarations and any person or organization qualifying as an insured under Section III. The words "we", "us", and "our" refer to the American Association of Orthodontists Insurance Company, (a Risk Retention Group) providing the insurance under this policy.

Words and phrases that appear in bold type have special meaning as defined throughout this policy, and particularly, in Section VII.

SECTION I. COVERAGE AGREEMENTS

A. Insuring Agreements

Subject to all of the terms and conditions of this policy, we will pay on behalf of the **insured**:

Individual Professional Liability (Coverage A)

All sums which an **insured** individual shall become legally obligated to pay as **damages** because of **injury** as a result of an **orthodontic incident** arising out of (1) the orthodontist **named insured's** practice of dentistry, or (2) the acts or omissions of an orthodontist **named insured's** employees, other than dentists, while acting within the scope and course of their duties for the orthodontist **named insured**. This Coverage A does not apply to any claim or **suit** for **damages** because of **injury** as a result of an **orthodontic incident** arising out of the practice of an orthodontist employed by such orthodontist **named insured** unless said orthodontist is also a **named insured**.

Partnership, Association or Corporation Professional Liability (Coverage B)

All sums which a **named insured** partnership, association, corporation or entity, or any member, partner or officer, director or stockholder of a **named insured** partnership, association, corporation or entity who is shown in the Declarations as an individual **named insured**, shall become legally obligated to pay as **damages** because of **injury** as a result of an **orthodontic incident,** which is attributable to an orthodontist who is a **named insured** or such **named insured's** employees, other than dentists, while acting within the scope and course of their duties for an individual **named insured**. No coverage is provided under this Coverage B if such **injury** was caused by an **orthodontic incident** that occurred prior to the date of the legal formation of the **named insured**, partnership, association, corporation or entity.

B. Claims Made Limitation

The insurance provided by this policy applies only if a claim for **damages** because of **injury** is first made against

the **insured** during the **policy year** or any applicable Extended Reporting Period and the **orthodontic incident** upon which the claim is based occurred on or after the Retroactive Date shown in the Declarations and prior to the end of the **policy year**.

1. A claim by a person or organization seeking damages will be deemed to have been made when written notice of such claim is received by any **insured** or by us, whichever occurs first.

2. All claims arising out of the same **orthodontic incident** shall be considered to be one claim and to have been made when written notice of the first claim is received by any **insured** or by us, whichever occurs first.

C. Defense of claim or suit

Subject to all of the terms and conditions of this policy, we will have the right and duty to select counsel and to defend any claim or **suit** seeking **damages** because of **injury** as a result of an **orthodontic incident** covered by this policy even if the allegations of the **suit** are groundless, false or fraudulent; provided,

1. We may, at our discretion and subject to Section IX, investigate any **orthodontic incident,** through review of your patient or other records, and settle any claims or **suit** that may result; and further

2. Our right and duty to defend end when we have paid, offered to pay or are legally obligated to pay **damages** equal to the Limits of Liability shown in the Declarations and as described in Section IV.

3. If we defend a claim or **suit** in which the claimant seeks **damages** against a **named insured** individual, and also seeks relief against a partnership, association, corporation or entity which is not a **named insured** in the policy and in which the **named insured** individual is a member, partner, officer, director or stockholder, then after our duty to defend ends by payment of a settlement or judgment, by termination of the claim or suit, or pursuant to paragraph C. 2. of this section, you and your partnership, association, corporation, or entity will both be legally responsible, jointly and severally, for reimbursing us for the attorney' fees, costs and expenses we have paid to defend said partnership, association, corporation or entity in the claim or suit. We will not be entitled to reimbursement for attorney's fees, expenses, and costs reasonably necessary to defend the named insured individual.

D. Limits of Liability

1. Notwithstanding anything to the contrary in this policy, the amount we will pay for **damages** is limited as described in Section IV;

2. We are not obliged or liable to pay any other sums or perform any other acts or services unless explicitly and expressly provided for in this policy.

E. Supplementary Payments

1. Subject to all of the terms and conditions of this policy, with respect to any claim or **suit** we defend, we will pay:

    a. All **claims expense** we incur, or you incur at our request;

    b. The cost of appeal bonds, but we will only pay for bond amounts that secure judgments within the applicable limits of the Company's liability, and we do not have to furnish such bonds;

    c. All reasonable expenses incurred by the **insured** at our request to assist us in the investigation or defense of the claim or **suit**, including loss of earnings at an agreed amount of $1,000 for each day of attendance at trial we have requested an individual **insured** to attend, not to exceed $10,000 for any one trial.

    d. All costs taxed against the **insured** in the **suit**;

e. Pre-judgment interest awarded against the **insured** on the part of the judgment we pay, provided that if we propose to settle the claim or **suit** by making an offer to pay the applicable limit of insurance and you refuse to consent, we will not pay any pre-judgment interest occurring after the date of the Company's proposed offer; and

f. All interest on the full amount of any judgment that accrues after the entry of the judgment and before we have paid, offered to pay, or deposited in court the part of the judgment that is within the applicable limit of this policy.

2. Subject to all of the terms and conditions of this policy, if during the **policy year** or any applicable Extended Reporting Period you first receive notice that you are a subject of a civil investigation by a state regulatory agency or similar review board, and such investigation concerns an **injury** as a result of an **orthodontic incident** covered by this policy, we will provide legal representation to you in such a proceeding by an attorney of our choice; provided, however:

   a. The most we will pay for this coverage is $20,000, regardless of the number of insureds or the number of such investigations.

   b. This coverage does not apply if:

      i. You do not notify us within 30 days after you have received notice that your participation is required and provide us all information and documentation that we request about the circumstances surrounding this proceeding, or

      ii. You participate in the proceeding in any way other than through an attorney approved by us.

   c. Any fines, fees, penalties, sanctions, damages, interest, expenses or costs accessed against you by the state regulatory agency or similar review board are not covered by this policy.

   d. If this sub-limit is exhausted prior to settlement, judgment or other conclusion in connection with such investigation(s), our obligations under this coverage shall be terminated and we shall have the right to withdraw from the further Investigation and/or defense thereof by tendering control of such investigation or defense to you, and you agree, as a condition to the issuance of this coverage, to accept such tender.

3. Subject to your compliance with Section VI. B. of the policy, with respect to any reported **orthodontic incident** we will reimburse you up to $10,000 for expenses incurred by an insured for **first aid** at the time of an **orthodontic incident** that occurs within the orthodontic office(s) of the **insured**. **First aid** means medical aid at the time of an **orthodontic incident** and, if incurred within twelve (12) months thereafter and resulting from the **orthodontic incident**, necessary medical, surgical, x-ray, ambulance and dental services, drugs and medical surgical supplies.

4. We will reimburse you for **property damage** to your patient's personal property in your office(s) while your patient is in your office(s) for the purpose of receiving your professional orthodontic services, subject to an annual aggregate limit of liability of $5,000 for **property damage** claims by all of your patients, provided that:

   i. the **property damage** occurs during the **policy year**; and

   ii. you report and document the **property damage** claim to us as soon as practicable during the **policy year** or, if applicable, the extended reporting period; and

   iii. this coverage is excess to, and not contributing with, any other insurance that you may have for

property damage.

"Property damage" means physical injury to tangible property including resulting loss of use of tangible property that is not physically injured.

These supplementary payments will not reduce the Limits of Liability provided by this policy.

SECTION II. EXCLUSIONS

In addition to other limitations of this policy, this insurance does not apply:

A. To any **injury** to any employee (including temporary or leased workers) of the **insured** or the spouse, domestic partner or family member of the domestic partner, child, parent, brother or sister of such employee arising out of and in the course of the person's employment by the **insured** or in connection with performing duties relating to the conduct of the **insured's** business. This exclusion does not apply to any **injury** to an employee as a result of an **orthodontic incident** in connection with the **insured's** provision of dental services to the employee.

B. To any **injury** you expected or intended, or which a reasonable person should have expected.

C. To any obligation of any **insured** under any workers compensation, unemployment compensation, disability benefits, employee benefits, employment practices or under any similar law.

D. To any **injury** or **damages** for which the **insured** may be held liable as a proprietor, administrator, superintendent, officer, stockholder or member of the board of directors, trustees or governors of any hospital, sanitarium, laboratory, clinic with bed and board facilities, nursing home, or any other business enterprise whether or not related to patient care or treatment or the provision of dental services.

E. To any **injury** or **damages** arising out of a fraudulent, criminal or quasi-criminal act by any **insured**, or any act by any **insured** in violation of any applicable governmental law, rule or regulation including, but not limited to, a state dental practice act.

F. To any **injury** or **damages** arising out of the actual, alleged or threatened discharge, dispersal, seepage, migration, release or escape of **pollutants**, or to any **injury** or **damages**, including any loss, cost or expense arising out of any:

1. Request, demand or order that any **insured** or others test for, monitor, clean up, remove, contain, treat, detoxify or neutralize, or in any way respond to or assess the effects of any **pollutants**; or

2. Claim or **suit** by or on behalf of a governmental authority for damages because of testing for, monitoring, cleaning up, removing, containing, treating, detoxifying or neutralizing, or in any way responding to or assessing the effects of any **pollutants**.

"Pollutants" means any solid, liquid, gaseous or thermal irritant or contaminant in any form, any toxic or hazardous substance as defined by Federal or state law or regulation, or any substance that may, does, or is alleged to adversely affect the environment, property, persons or animals, including, but not limited to, smoke, vapor, soot, fumes, fibers, particles, acids, alkalis, chemicals and waste (including materials to be recycled, reconditioned or reclaimed).

G. To any **damages** the **insured** is obligated to pay by reason of the assumption of liability in a contract or agreement. This exclusion does not apply to **damages** covered by this policy that the **insured** would otherwise be obligated to pay in the absence of a contract or agreement (including indemnification agreements in health maintenance organization, preferred provider or practice association agreements) for **damages** as a result of **orthodontic incidents** arising out of the **named insured's** practice of dentistry, except that no coverage is provided for any liability for, or the cost of, any other party's defense (including attorneys' fees).

H. To any **injury** resulting from the administration of general anesthesia or the use of sedation.

I. To any **Injury** or **Damages** arising out of or resulting from the administration of any vaccine unless (1) the procedure is specifically authorized for dentists by the applicable state dental practice act for the individual **Named Insured,** (2) the individual **Named Insured** has completed all required training programs and complies with all other requirements of the applicable state dental practice act for the administration of such vaccine(s) by dentists, and (3) the individual **Named Insured** administers the vaccine(s) in a public health setting such as those organized by governmental entities, local health systems and hospitals where treatment for adverse or severe allergic reactions is readily available, and does not administer the vaccine(s) in the office of a dentist or orthodontist.

J. To any **injury** arising out of the molestation or abuse of anyone, except as otherwise provided in subsection 5 of this section I. The terms "molestation" and "abuse" include, but are not limited to:

1. any actual, alleged or threatened sexual misconduct, assault or harassment;

2. any actual, alleged or threatened mental abuse;

3. any negligent screening, hiring, employment, training or supervision related to conduct to which this exclusion applies; and

4. any investigation, failure to investigate, or failure to report to proper authorities any molestation or abuse of anyone.

5. Notwithstanding anything in this section I. to the contrary, we will provide coverage up to a limit of $25,000 per claim and $25,000 in the aggregate during the **policy year**, subject to a lifetime aggregate limit of $40,000, for **claims expense** we incur in the defense of a claim against an individual **insured** for sexual misconduct, assault or harassment in any civil suit against such individual **insured** for **damages**, which is otherwise covered by this policy. We will not, however, provide any coverage for a settlement or judgment against the **insured** for a claim of sexual misconduct. Any payment under this coverage will reduce the limits of liability of this policy.

K. To any **injury** arising out of or contributed to by any actual, alleged or threatened imprisonment or wrongful detention.

L. To any civil or criminal fines, penalties or punitive or exemplary damages, sanctions, treble damages, or any other loss, cost, expense or damage resulting from the multiplication of compensatory damages, nor to the return or restitution or waiver of fees, expenses or costs for professional services rendered or to be rendered by the **insured**.

M. To any **damages**, judgment or award arising out of conduct by an **insured** that is uninsurable under applicable law, or to any form of injunctive or declaratory relief.

N. To any damages (including **damages**), **injury** or circumstances which may result or have resulted in a claim or **suit**, of which the **named insured** is or should be aware at the time the policy is issued.

O. To any **injury** or **damages** arising out of actual or alleged violation of federal or state antitrust laws, including, but not limited to, monopolization or attempted monopolization, or any agreement or conspiracy to restrain trade.

P. To **injury** arising out of the **insured**, or any other person, causing by knowing, intentional or willful acts or omissions, the transmission of Human Immunodeficiency Virus or AIDS.

Q. To any **orthodontic incident** that (1) occurred in whole or in part prior to the retroactive date shown in the Declarations, or (2) on or before the inception date of this policy, is a reported **orthodontic incident**, pending claim or proceeding, or paid claim.

R. To any **injury** or **damages** resulting from prescribing or dispensing any controlled substance by you without the

required license or registration to prescribe or dispense such controlled substance.

S. To any **orthodontic incident** involving you if, at the time of the **orthodontic incident**, you knew or should have known that your dental license or, where applicable, orthodontic license was suspended, revoked, terminated, not issued or fraudulently obtained, or restricted with regard to the specific professional services resulting in the **orthodontic incident**.

T. To any **injury** or **damages** arising out of or related to, either directly or indirectly, any "Terrorist Activity," as defined herein. This exclusion applies regardless of any other cause or event that in any way contributes concurrently or in any sequence to the **injury** or **damages**. For the purposes of this exclusion,

"Terrorist Activity" shall mean any deliberate, unlawful act that:

1. Is declared by any unauthorized governmental official to be or to involve terrorism, terrorist activity or an act of terrorism; or

2. includes, involves, or is associated with the use, threatened use, or preparation for the use of force, violence or harm against any person, entity, tangible or intangible property, the environment, or any natural resource, or where it appears that one purpose of the act or threatened act is to:

    a. promote or further any political, ideological, philosophical, racial, ethnic, social, economic or religious cause or objective or to express (or express opposition to) a philosophy or ideology;

    b. influence, disrupt or interfere with any government related operations, activities or policies;

    c. intimidate, coerce or frighten the general public or any segment of the general public; or

    d. disrupt or interfere with a national economy or any segment of a national economy; or

3. includes, involves, or is associated with, in whole or in part, any of the following activities, preparation therefore, or the threat thereof:

    a. hijacking or sabotage;

    b. hostage taking or kidnapping;

    c. the use of any biological, chemical, radioactive, or nuclear agent, material, device or weapon;

    d. the use of any bomb, incendiary device, explosive or firearm;

    e. the interference with or disruption of basic public or commercial services or systems, including, but not limited to, the following services or systems: electricity, natural gas, power, postal, communications, telecommunications, information, public transportation, water, fuel, sewer or waste disposal;

    f. the injuring or assassination of any elected or appointed government official or any government employee;

    g. the seizure, blockage, interference with, disruption of, or damage to any governmental or non-governmental buildings, institutions, functions, events, tangible or intangible property or other assets; or

    h. the seizure, blockage, interference with, disruption of, or damage to tunnels, roads, streets, highways, or other places of public transportation or conveyance; or

4. is committed by a person who is affiliated in any way with, or who has conspired with, any group, association or organization that is recognized, either before or after such act, by any authorized governmental

official as a terrorist group, association or organization.

U. To any **Injury** or **Damages** arising out of resulting from the administration of cosmetic injectables, including but not limited to onabotulinumtoxinA and dermal fillers, unless:

1. administered by an individual **named insured** in a dental office reported on their policy application;
2. the individual **named insured** is licensed to administer cosmetic injectables under the applicable state dental practice act; and
3. the injectable is used for **dental health related treatment**.

SECTION III. WHO IS AN INSURED

Each of the following is an **insured** under this policy to the extent set forth below:

A. Under **Coverage A—Individual Professional Liability** – any individual shown in the Declarations as a **named insured,** and their employees, other than dentists, while acting within the scope and course of their duties for the **named insured**, and any executor, administrator, trustee or beneficiary of the **named insured's** estate while acting within the scope of their duties as such; provided, however, that no orthodontist employed by a **named insured** is an Insured under this Coverage A unless said orthodontist is also a **named insured**.

B. Under **Coverage B—Partnership Association or Corporation Professional Liability** – the partnership, association, corporation or other entity shown in the Declarations as a **named insured** and any member, partner, officer, director or stockholder thereof, but only if such person is shown in the Declarations as a **named insured**.

SECTION IV. LIMITS OF LIABILITY

A. Coverage A—Individual Professional Liability

Our total liability for all **damages** because of all **injury** to which this insurance applies shall not exceed the Limit of Liability as stated in the Declarations as the **aggregate** limit.

Subject to the above provision with respect to the **aggregate**, our total liability for all **damages** because of all **injury** arising out of any one **orthodontic incident** shall not exceed the Limit of Liability stated in the Declarations as applicable to each **orthodontic incident**.

B. Coverage B—Partnership, Association or Corporation Professional Liability

Our total liability for all **damages** because of all **injury** to which this insurance applies shall not exceed the Limit of Liability as stated in the Declarations as the **aggregate** limit.

Subject to the above provision with respect to the **aggregate**, our total liability for all **damages** because of all **injury** caused by any one **orthodontic incident** shall not exceed the Limit of Liability stated in the Declarations as applicable to each **orthodontic incident**.

C. Coverage A and Coverage B

Notwithstanding the foregoing, the Limits of Liability stated in the Declarations as applicable to each **orthodontic incident** is the most we will pay for the sum of all **damages** because of all **injury** arising out of any one **orthodontic incident** covered by this policy regardless of the number of **insureds,** the number of claims made or **suits**

brought, the number of persons or organizations making claims or bringing **suits,** or whether coverage applies under Coverage A or Coverage B or both.

The Limit of Liability stated in the Declarations as applicable to the **aggregate** limit is the most we will pay for

the sum of all **damages** because of all **injury** covered by this policy regardless of the number of **insureds**, the number of claims made or **suits** brought, the number of persons or organizations making claims or bringing **suits**, or whether coverage applies under Coverage A or Coverage B or both.

D. In the event a **named insured** under this policy is insured under any other policy issued by us, then, for the same **orthodontic incident**:

1. the Limits of Liability available to such **insured** shall be the aggregate Limit of Liability of the policy with the greater aggregate limit of liability; and

2. we shall apportion any sums paid on behalf of the **named insured** pro rata between the policies based upon the aggregate limit available under each policy.

E. Subject to the provisions of this Section IV, the Limits of Liability set forth in this Section shall apply separately (and not cumulatively) to each policy annual period; provided, that if the policy period is extended after issuance with an Extended Reporting Period, the additional period shall be deemed part of the last preceding annual period for purposes of determining the Limits of Liability.

SECTION V. POLICY TERRITORY

Subject to all of the terms and conditions of this policy, this policy applies to an **orthodontic incident** taking place anywhere in the world, provided that the claim is brought within the United States of America.

SECTION VI. PROFESSIONAL LIABILITY CONDITIONS

A. Bankruptcy

Bankruptcy or insolvency of the **insured** or of the **insured's** estate shall not relieve us of any of our obligations hereunder.

B. Your Duties in the Event of Orthodontic Incident, Claim or Suit

1. As a condition precedent to coverage under this policy, when you are first made aware of an **orthodontic incident** (or an alleged **orthodontic incident**), you must immediately provide notice of any such **orthodontic incident**, in no event later than 45 days after you are first made aware of such orthodontic incident, and such notice shall include:

   a. the specific **orthodontic incident** and all relevant information relating to such **orthodontic incident**;

   b. the **injury** or **damage** which has resulted or may result because of the orthodontic incident;

   c. the name(s) of the party(ies) involved; and

   d. how and when you first became aware of the **orthodontic incident**.

2. If you provide such notice in compliance with (1.) above, then any claim or **suit** arising out of such **orthodontic incident** shall be deemed to have been made during the **policy year** in which such **orthodontic incident** occurred. In any event, subsequent policies issued to you by us will not apply to any claims or **suits** arising from any **orthodontic incident** occurring prior to the effective date of such policies.

3. In addition to all other obligations you have in the event of an **orthodontic incident**, you and any other involved **insured** must also:

   a. immediately send us copies of any demands, notices, summonses, complaint and other papers received in connection with the **orthodontic incident**, claim or **suit**;

   b. authorize us to obtain records and other information, and grant us access to all of your records

necessary to investigate the claim;

c. cooperate with us in the investigation, settlement, and defense of an **orthodontic incident**, claim or **suit**; and

d. assist us, upon our request, in the enforcement of any rights against any person or organization which may be liable to any **insured** because of **injury** or **damage** to which this insurance applies, including, but not limited to, the enforcement of any right of contribution or indemnity.

4. No **insureds** will, except at their own costs, voluntarily make a payment, assume any obligation, or incur any expense without our prior written consent.

C. Conditions of Doctor-Patient Relationship

The insurance provided by this policy, other than for professional committee negligence, applies to an **orthodontic incident** only if the **insured** has performed a comprehensive examination of the patient, has obtained and studied appropriate diagnostic records on which any resulting diagnosis, treatment plan or treatment recommendation is based, and has monitored the patient's progress regularly or reasonably attempted to do so. These conditions do not apply when providing care on an emergency basis, other than on a locum tenens arrangement, for another orthodontist's patients.

D. Legal Action Against Us

No person or organization has a right under this policy to join us as a party or otherwise bring us into a **suit** asking for **damages** from any **insured**. No person or organization shall or is intended to be a third-party beneficiary under or of this policy. An **insured** does not have the right under this policy to sue us on this policy unless, as a condition precedent thereto, all terms have been fully complied with by such **insured**. A person or organization may sue us to recover on an agreed settlement or on a final judgment against an **insured** obtained after an actual trial, but we will not be liable for **damages** that are not payable under the terms of this policy or that are in excess of the applicable limits of liability. (An "agreed settlement" means a settlement and release of liability signed by us, the **insured** and the claimant and/or the claimant's legal representative.)

E. Other Insurance

If other valid and collectible insurance is available to an **insured** for a claim or **suit,** we cover, our obligations are limited as follows:

1. Primary Insurance

This insurance is primary except when 2, Excess Insurance, below, applies. If this insurance is primary, our obligations are not affected unless any of the other insurance is also primary. Then, we will share with all other insurance by the method described in 3, Method of Sharing, below.

2. Excess Insurance

This insurance is excess over any other insurance or indemnification, whether primary, excess, contingent or on any other basis, that applies to professional liability.

When this insurance is excess, we will have no duty to defend any claim or **suit** that any other insurer or any indemnitor has a duty to defend. If no other insurer defends, we may undertake to do so, but we will be entitled to the **insured's** rights against all such other insurers.

When this insurance is excess over the other insurance or indemnification, we will pay only our share of the amount of the **damages**, if any, that exceeds the sum of:

a. the total amount that all such other insurance would pay for the **damages** in the absence of this insurance; and

b. the total of all deductible and self-insured amounts under all such other insurance or indemnification.

3. Method of Sharing

If this insurance is primary, and if all of the other insurance permits contribution by equal shares, we will follow this method also. If any of the other insurance does not permit contribution by equal shares, we will contribute on the basis of the ratio of our applicable limit of insurance to the total applicable limits of insurance of all insurers.

F. Premium

We will compute all premiums for this policy in accordance with our own rules, rates, rating plans, premiums, and minimum premiums, which may be modified from time to time in our sole discretion.

G. Representations

By accepting this policy, you agree:

1. the statements in the application and information in the Declarations are accurate and complete;

2. the statements in the application are representations you made to us; and

3. we have issued this policy in reliance upon your representations.

H. Transfer of Rights of Recovery Against Others To Us

If the **insured** has rights to recover all or part of any payment we have made under this policy, those rights are transferred to us. The **insured** must not do or fail to do anything that would impair any of such rights. At our request, the **insured** will cooperate with us in our efforts to enforce such rights, including consenting to our bringing suit in the name of the **insured** to enforce such rights.

I. When We Do Not Renew

We may decide not to renew your policy at its renewal date for any reason. If we decide not to renew the policy, we will mail or deliver advance written notice of non-renewal to you not less than 60 days before the expiration date of the policy. Any notice of non- renewal by us to you shall be mailed or delivered to your last known mailing address reflected on our records.

J. Your Right To Obtain Orthodontic Incident Information

We will provide the first **named insured** shown in the Declarations the following information relating to this and any preceding professional liability policy we have issued to you during the previous three years:

1. a list or other record of each **orthodontic incident**, of which we were notified in accordance with subsection B of this Section VI. We will include the date and brief description of the **orthodontic incident** if that information was in the notice, we received from you.

2. a summary by **policy year** of payments made by us on your behalf.

We will provide this information only if we receive a written request from the first **named insured** shown in the Declarations. In providing this information, we make no representations or warranties as to accuracy, completeness or otherwise to **insureds**, insurers or others to whom this information is furnished by or on behalf of the **insured**.

K. Cancellation

1. You may cancel this policy at any time by providing advance written notice to us that specifies when the cancellation shall be effective, which must be received by us prior to the effective date of cancellation.

2. We may cancel this policy at any time

    a. for nonpayment of premium by mailing or delivering written notice of cancellation specifying the reason for cancellation at least 15 days before the effective date of cancellation, in which case you may continue the policy by payment of the premium and any other amounts due us at any time prior to the effective date of cancellation set forth in the notice; or

    b. for any other reason by mailing or delivering notice of cancellation specifying the reason(s) for cancellation at least 45 days before the effective date of cancellation.

3. Any notice of cancellation to us shall be mailed or delivered to us at our business address. Any notice of cancellation by us to you shall be sent by certified mail to your last known mailing address reflected on our records.

4. The **policy year** will end on the effective date of cancellation set forth on any notice of cancellation properly given by you or us.

5. If we cancel the policy after we accept the initial premium, we will refund any unearned premium on a pro rata basis. If we mail you a cancellation notice for non-payment of the initial premium, and we do not receive the initial premium and any additional fees due prior to the cancellation effective date set forth in our cancellation notice, the policy will be void, no insurance coverage will be provided by the policy, and any premium we receive from you for the policy will be refunded.

    If you cancel the policy within 30 days after the inception date of the policy, we will refund the premium paid, the policy will be void, no insurance coverage will be provided by the policy, and any premium we receive from you for the policy will be refunded. If you cancel the policy after 30 days following the policy's inception date, we will refund any unearned premium on a pro rata basis. The cancellation by you or us shall be effective even if we have not made or offered a refund of premium.

L. Changes

This policy contains all the agreements between you and us concerning the insurance to be provided to you by us and supersedes and replaces all prior written and oral agreements as to the insurance. No **insured** may change or amend any term(s) or condition(s) of this policy except with our prior written consent. This policy may only be amended by endorsement issued by us and made a part of this policy.

M. Transfer of Your Rights and Duties Under This Policy

Your rights and duties under this policy cannot be transferred or assigned without our prior written consent except in the case of death of an individual **named insured**.

Under **Coverage A—Individual Professional Liability** – If the individual **named insured** shall die or be adjudged incompetent, this insurance shall thereupon terminate for such person, but shall cover such **insured's** legal representative as the **insured** with respect to liability previously incurred and covered by this insurance.

Under Coverage B—Partnership, Association, or Corporation Professional Liability

– If any member, partner, officer, director or stockholder of the **insured** who is covered by this policy shall die or be adjudged incompetent, this insurance shall thereupon terminate for such person, but shall cover such **insured's** legal representative as the **insured** with respect to liability previously incurred and covered by this insurance.

N. Sole Agent

The first **named insured** shown in the Declarations shall act on behalf of all **insureds** with respect to giving and receiving notice of cancellation, accepting any endorsement issued to form part of the policy and receiving return of premium, if any, and is charged with the responsibility for notifying us of any changes of members, partners, officers, directors, stockholders or employees or any other change which might affect the insurance hereunder.

O. Changes in Your Business or Profession

In the event of any change(s) in your dental practice that may affect the terms or risk of this insurance, including but not limited to any change(s) to or addition(s) of a business or entity relating to your practice, or any change(s) relating to your response(s) in your

application for this policy, you must notify us in writing within 30 days of such change(s) and provide us such other information as we may require. Coverage for any changes in your professional practice or any changed or additional person, business, entity, office, service , or for your liability relating thereto, shall be effective as of the date notice is received by our office, and subject to such timely notice and provision of such additional information, our written approval, all of the terms and conditions of this policy and such additional terms and conditions as we in our sole discretion may require, and timely payment of any additional reasonable premium therefor that we may require.

P. Right to Audit

We have the right, but are not obligated to, inspect and audit your practice, including, but not limited to, patient records, during and after the term of this policy. We may provide you with a report of our findings, but neither this provision, the inspection nor our findings shall guarantee any aspect of your practice, be a warranty of any kind, or constitute a waiver by us of any right we possess under this policy.

SECTION VII. DEFINITIONS

When used in reference to this policy (including endorsements forming a part of this policy):

"**Aggregate**" means the most we will pay for all **damages** under the Coverage A and/or Coverage B for any policy year, which amount is set forth in the Declarations.

"**Claims expense**" means expenditures for the investigation or defense of a claim or **suit** covered by this policy including, but not limited to, costs of investigators, experts, adjustment services, attorney fees and court costs.

"**Damages**" means any compensatory sum which an **insured** is legally obligated to pay that arises out of any **orthodontic incident** to which this insurance applies and shall include judgments and settlements negotiated with our written consent, except that Damages shall not include any sums excluded by Section II.

"**Injury**" means physical injury to, or sickness or disease of, the body, including death resulting from such injury, sickness or disease. **Injury** also means- mental injury, mental anguish, mental tension, emotional distress, pain or suffering or shock sustained by that person as a result of physical injury to the body, sickness or disease. **Injury** also means **damages** resulting from **professional committee negligence.**

"**Orthodontic incident**" means any act(s) or omission(s):

1. in the furnishing of professional dental health care services while practicing in a jurisdiction(s) in which the insured is appropriately licensed, including the furnishing of medications or appliances in connection with such services; or

2. of "**professional committee negligence**".

"Professional committee negligence" means a breach by an individual **named insured** of the standards that govern

the dental profession in serving on a peer review board/committee of a local or state dental organization, provided your activity is within the scope of the established guidelines for such peer review board/committee.

All such acts or omissions together with all related acts or omissions in the furnishing of such dental services to any one person or such peer review board/committee shall be considered one **orthodontic incident**.

"**Named insured(s)**" means the individual(s), partnership(s), association(s), corporation(s) or entity named in the Declarations.

"**Policy year**" means the policy period shown in the Declarations.

"**Suit**" means a civil proceeding in which **damages** for **injury** to which this insurance applies are alleged. **Suit** includes an arbitration proceeding alleging such **damages** to which you must submit or may submit with our consent.

"**Dental health related treatment**" means diagnosing, treating, operating or prescribing for any disease, pain, injury, deformity, malocclusion or physical condition of the oral and maxillofacial area related to restoring or maintaining dental health.

SECTION VIII. EXTENDED REPORTING PERIOD

1. Subject to all of the terms and conditions of the policy, we will provide you with the Extended Reporting Periods described below if:

   a. The policy is canceled or not renewed for any reason other than your nonpayment of premium; or

   b. The policy is renewed or replaced with a policy issued by us that is other than a claims made policy.

2. A Basic Extended Reporting Period is provided without additional charge. This period starts upon such cancellation, nonrenewal or replacement of the policy and lasts for 60 days, and any claim made within such additional period shall be deemed made on the last date of the **policy year** shown in the Declarations.

3. In addition, you have the right to select and obtain either one (1), two (2) or three (3) Supplemental Extended Reporting Periods of twelve (12) months each or an unlimited Supplemental Extended Reporting Period, but only if added by endorsement and for an additional premium charge. Your selection must be given to us in writing prior to the end of the Basic Extended Reporting Period and your selection must specify the length of Supplemental Extended Reporting Period. Your selection is irrevocable. The supplemental period chosen starts immediately after the end of the Basic Extended

   Reporting Period, and any claim made within the Supplemental Extended Reporting Period selected for which the applicable additional premium has been paid, shall be deemed made on the last date of the **policy year** shown in the Declarations.

   An additional premium charge as set forth below is immediately due for the Supplemental Extended Reporting Period chosen.

   12 months - 90% of the annual policy premium at the time of selection
   24 months - 175% of the annual policy premium at the time of selection
   36 months - 250% of the annual policy premium at the time of selection
   Unlimited - 350% of the annual policy premium at the time of selection

   Regardless of the foregoing, if you permanently and totally cease your practice as an orthodontist as a result of your (1) death or permanent total disability, or (2) retirement if you are 50 years of age or older and you have been insured with us for four (4) or more consecutive years immediately preceding your retirement, you will be entitled to receive an unlimited Extended Reporting Period at no additional premium charge follow-

ing the end of the Basic Extended Reporting Period upon our receipt of your written request for the Extended Reporting Period.

The Supplemental Extended Reporting Period will not go into effect unless you pay the additional premium promptly when due and any other premium due us on this policy.

4. Extended Reporting Periods do not extend the **policy year** or increase or reinstate the limits of liability of the policy or change the coverage provided by the policy. Subject to all of the terms and conditions of this policy, this insurance will apply to claims first made against the **insured** during the Basic Extended Reporting Period or the Supplemental Extended Reporting Period, as applicable, but the insurance shall not apply to **injury** caused by an **orthodontic incident** which occurred before the retroactive Date showing the Declarations or which occurs after the **policy year**.

SECTION IX. SETTLEMENT

We will not settle any claim or **suit** without your consent.

IN WITNESS WHEREOF, the American Association of Orthodontists Insurance Company has caused the policy to be executed and attested, but this policy shall not be valid unless countersigned by our duly authorized representative.

T.R. Pracht, D.D.S., M.S.

Chairman of the Board & CEO

President

SELF EVALUATION

The Dental Malpractice Insurance Policy: What's Covered and What's Not

True/False

1. An "occurrence" policy requires "tail" coverage once the policy year expires.

2. You have a duty to inform your carrier as soon as an incident develops.

3. If you chose to try to resolve or settle a case on your own or with an attorney not approved by your carrier, your carrier may deny you coverage.

4. Your policy does not include coverage for procedures that fall outside of your jurisdiction's legal definition of the practice of dentistry.

5. You need to inform your carrier of each location where you practice dentistry and have that location added to your policy.

6. If you practice as an entity (corporation, limited liability company) your entities are automatically included in your malpractice coverage.

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

Susan Maples, DDS, MSBA
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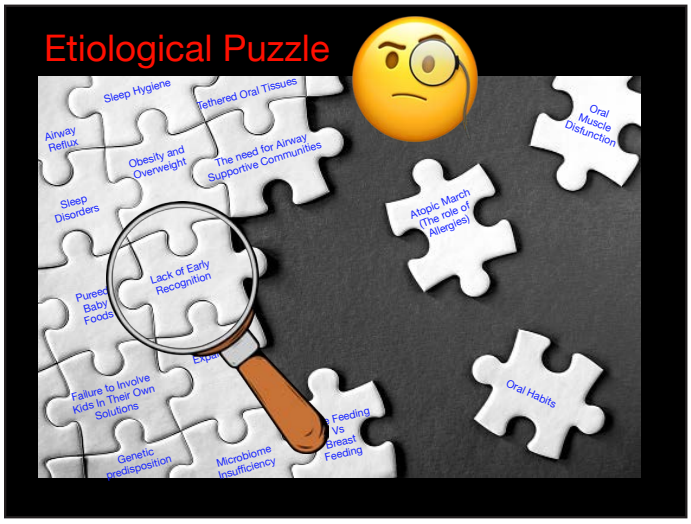
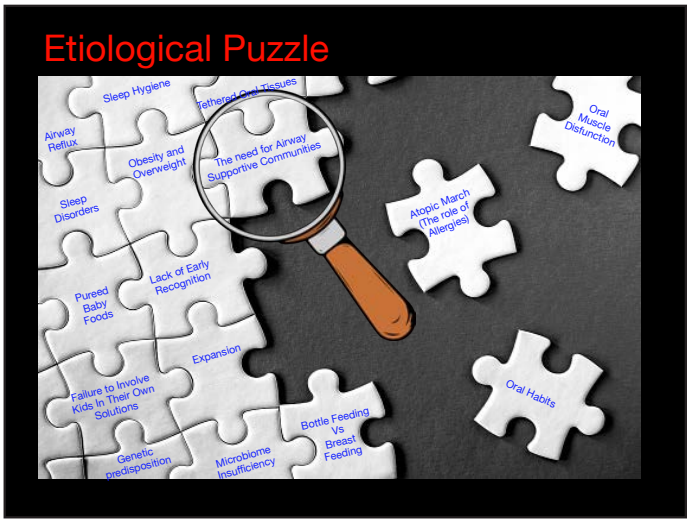
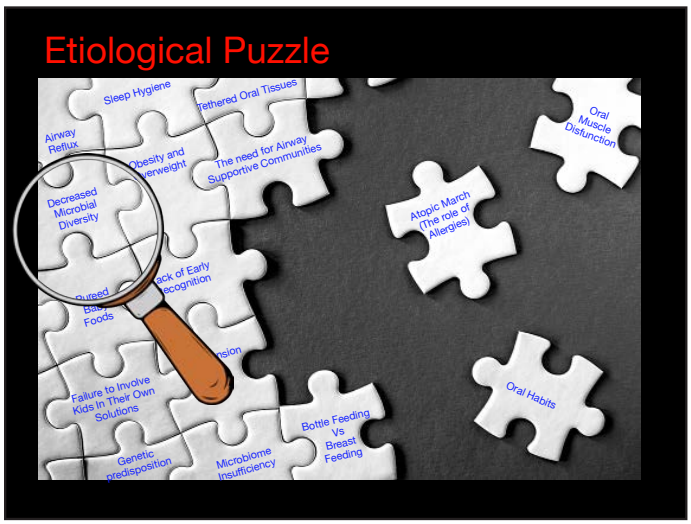
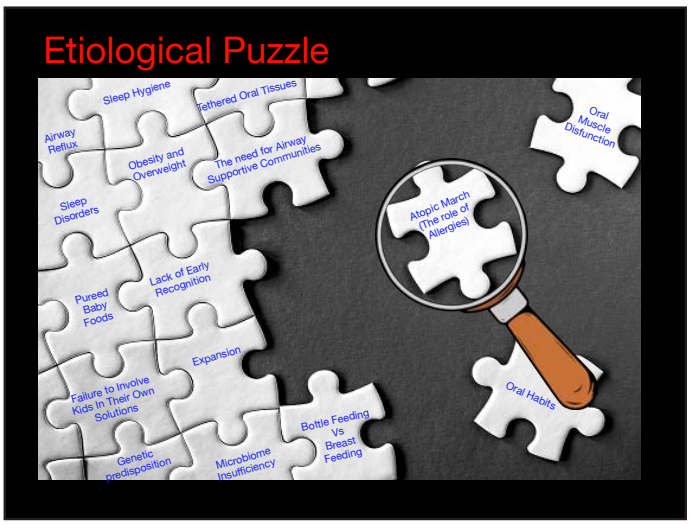
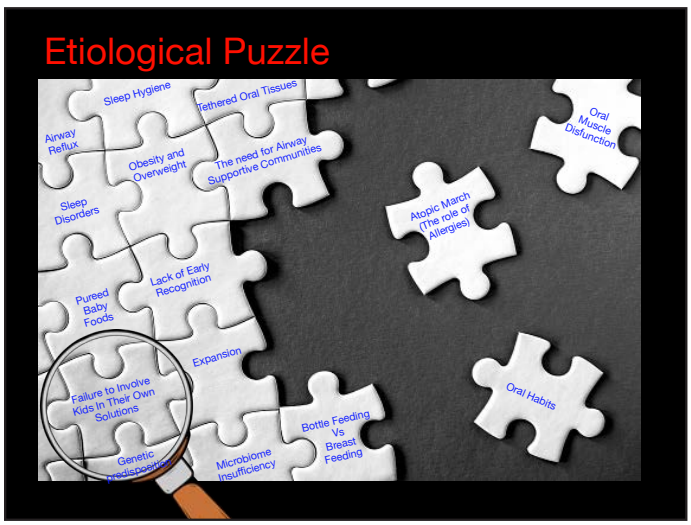
Treating Pediatric Breathing Disorders to Head off Adult UARS and OSA

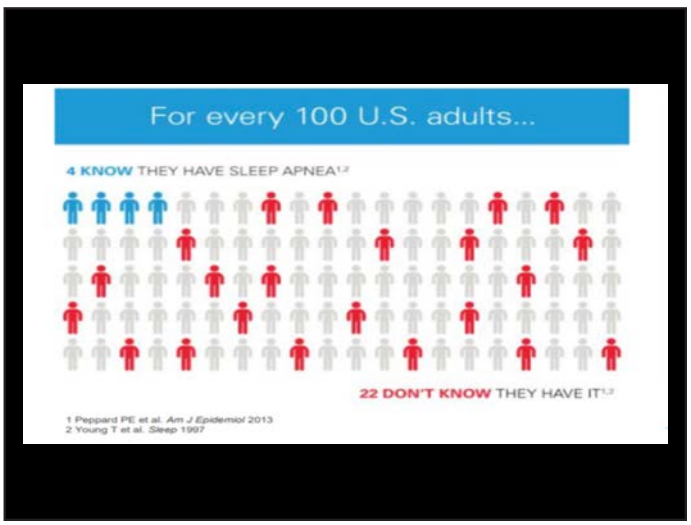


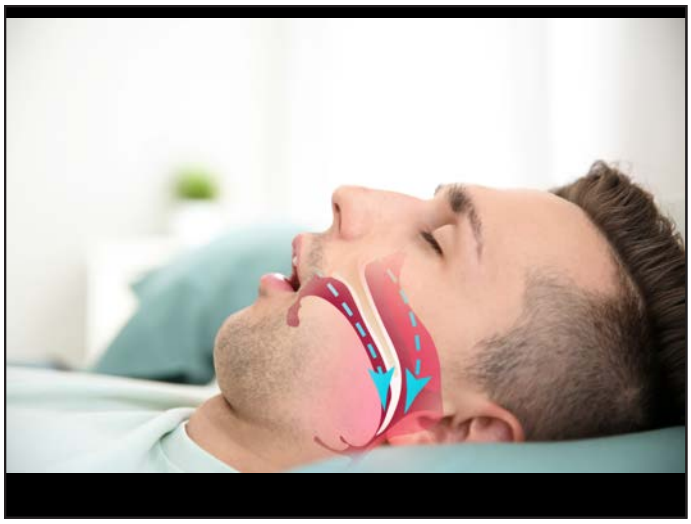


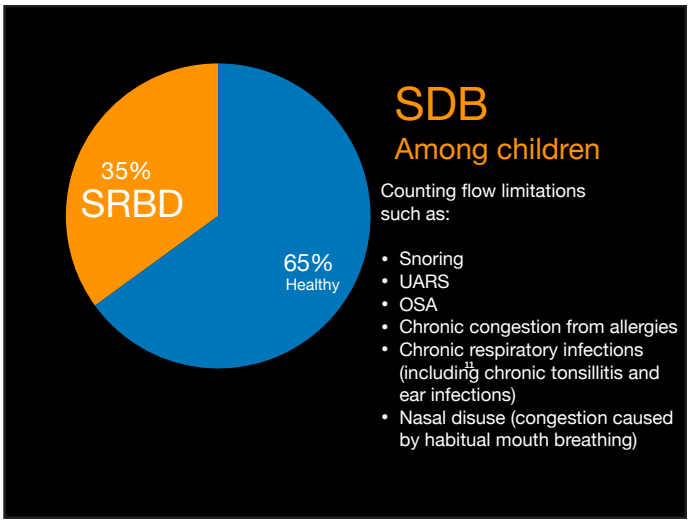




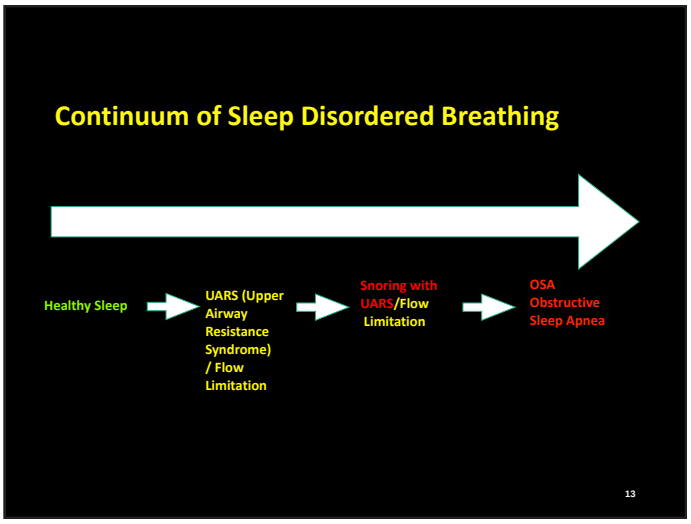







35%
SRBD
65%
Healthy
SDB
Among children
Counting flow limitations such as:
• Snoring
• UARS
• OSA
• Chronic congestion from allergies
• Chronic respiratory infections (including chronic tonsillitis and ear infections)
• Nasal disuse (congestion caused by habitual mouth breathing)

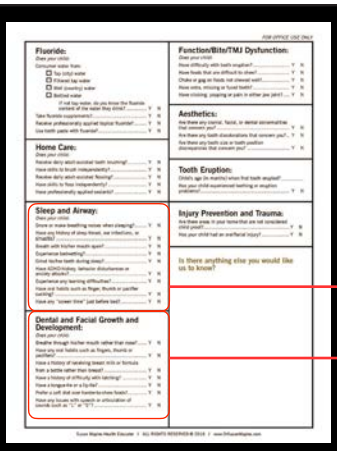

HER FUTURE MIGHT BE WRITTEN ALL OVER HER FACE.
ADHD
Bed Wetting
Anxiety
Chronic Illness
Learning Delays
Speech Problems
Learn About
Sleep Disordered Breathing.
Talk With Us Today.
SDB Communications:
SDBComm.com
12


Continuum of Sleep Disordered Breathing
Healthy Sleep
UARS (Upper Airway Resistance Syndrome) / Flow Limitation
Snoring with UARS/Flow Limitation
OSA Obstructive Sleep Apnea
13


REPORTED SYMPTOMS:
• ADD/ADHD
• Snoring
• Mouth Breathing
• Headaches
• Behavior problems
• Learning Deficits
• Bed-Wetting
• Bruising
• Hormonal Imbalances


PHYSICAL SIGNS:
• Large Tonsils
• Nasal Congestion
• Pharyngeal Opening
• Retrognathia
• Maxillary Deficiency
• Mandibular Deficiency
• Tethered Tongue
• Narrow Vaulted Palate
• Tongue Thrust
• Thumb/Pacifier Habit
• Venous Pooling-Eyes

Record and Report



SelfScreen.net

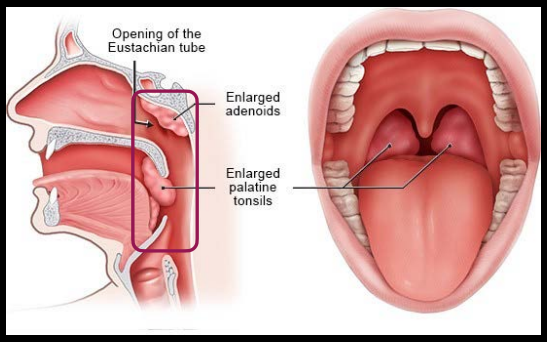
Creating Co-Referral Relationships With Your Medical Community

Children

- Myofunctional therapists-airway
- Pediatric Otolaryngologist (ENT)
- Allergist
- Pediatric and general dentists astute in airway
- Dental hygienists astute in airway
- Orthodontists astute in airway/ MMA
- Pediatricians
- Nurse Practitioners
- Lactation consultants (IBCLCs)
- Obstetricians
- Pediatric Cranial Osteopathic Physicians
- Speech/Language Pathologists

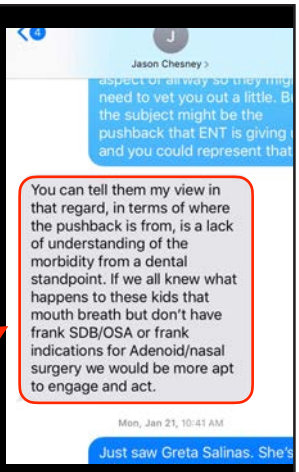
- Health CARE
- Root cause orientation
- Spend TIME
- Good communicators
- Gratified by helping people toward optimal health
- Wanted to be part of a health community
- Continual learners

22



24

Pediatrician *and* ENT Pushback



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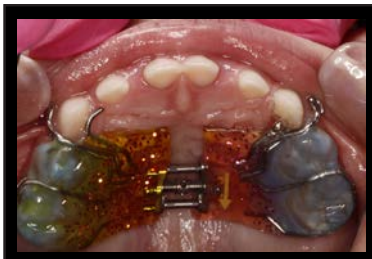

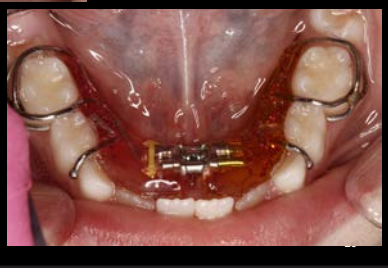

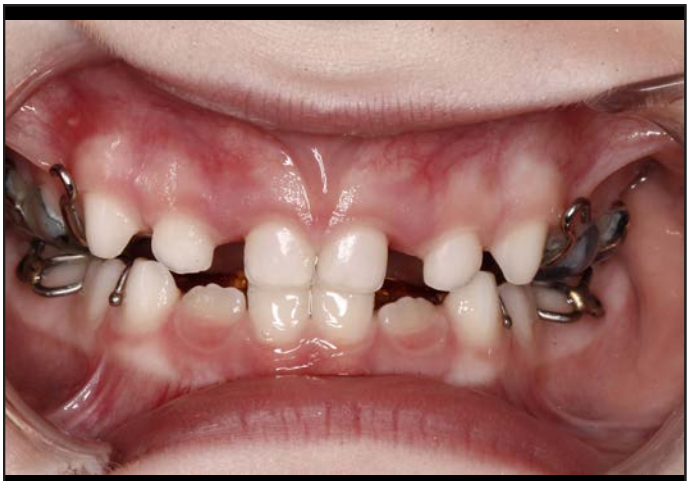

27

Impact of rapid palatal expansion on the size of adenoids and tonsils in children ☆

Audrey Yoon [a], Mohamed Abdelwahab [b], Rebecca Bockow [c], Ava Vakili [d], Katherine Lovell [d], Inwon Chang [e], Rumpa Ganguly [f], Stanley Yung-Chuan Liu [b], Clete Kushida [a], Christine Hong [g]

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Highlights

- Using CBCT, volumetric changes of adenoids and tonsils following rapid palatal expansion (RPE) was assessed.
- RPE decreases the size of enlarged adenoids and palatine tonsils.
- RPE may be considered for patients with narrow palate and adenotonsillar hypertrophy.
- RPE may have a role in patients with unsuccessful adenotonsillectomy outcome.

Highlights

- Using CBCT, volumetric changes of adenoids and tonsils following rapid palatal expansion (RPE) was assessed.
- RPE decreases the size of enlarged adenoids and palatine tonsils.
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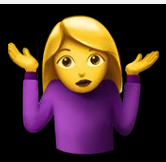

Original Research—Sleep Medicine and Surgery

OTOLARYNGOLOGY–HEAD AND NECK SURGERY FOUNDATION

Otolaryngology–Head and Neck Surgery
2023, Vol. 00(00) 1–10
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DOI: 10.1002/ohn.258
http://otojournal.org

WILEY

Transverse Maxillary Deficiency Predicts Increased Upper Airway Collapsibility during Drug-Induced Sleep Endoscopy

Eric Thuler, MD, PhD[1], Everett G. Seay, RPSGT[1], John Woo, MD[2,3], Jane Lee, MD[2], Niusha Jafari, MS[4], Brendan T. Keenan, MS[4], Raj C. Dedhia, MD, MSCR[1,4], and Alan R. Schwartz, MD[1,3,5]

Abstract

Objective. To examine the relationship between craniofacial skeletal anatomy and objective measures of pharyngeal collapse obtained during drug-induced sleep endoscopy. We hypothesized that transverse maxillary deficiency and an increased pharyngeal length will be associated with higher levels of pharyngeal collapsibility.

Study Design. Cross-sectional analysis in a prospective cohort.

Setting. University Hospital.

Methods. A cross-sectional analysis was conducted in a cohort of consecutive patients from the positive airway

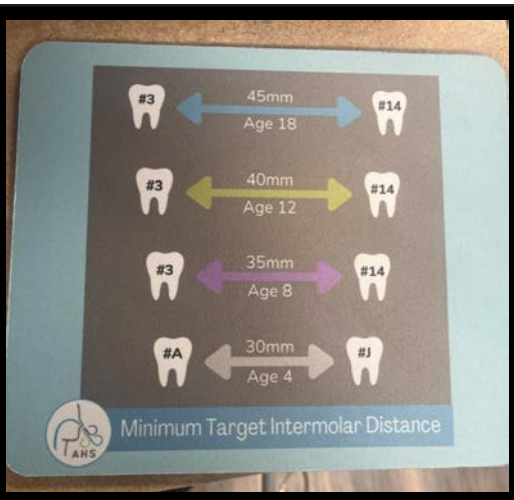
Keywords

craniofacial analysis, CT scan, maxillary transverse deficiency, sleep apnea, upper airway collapse

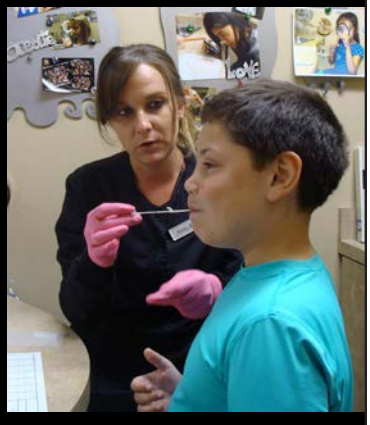
Received September 26, 2022; accepted December 17, 2022.

Obstructive sleep apnea (OSA) is characterized by recurrent episodes of upper airway obstruction during sleep resulting in increased respiratory effort, intermittent hypoxemia, and sleep fragmentation.[1]

Conclusion. Our results further the concept that skeletal restriction in the transverse dimension and hyoid descent are associated with elevations in pharyngeal collapsibility during sleep, suggesting a role of transverse deficiency in the pathogenesis of airway obstruction.



Mouth Taping



34

Mouth breathing thwarts the development of the

CFRC

CranioFacial Respiratory Complex

35

Christian Guilleminault, MD

- Pioneer and leader of all topics related to OSA, sleep, facial growth/development, pediatric sleep disorders and UARS.
- Coined the terms OSAS and UARS
- Created the AHI (Apnea-Hypopnia Index)
- Over 700 research publications on SBD, UARS and OSA

37

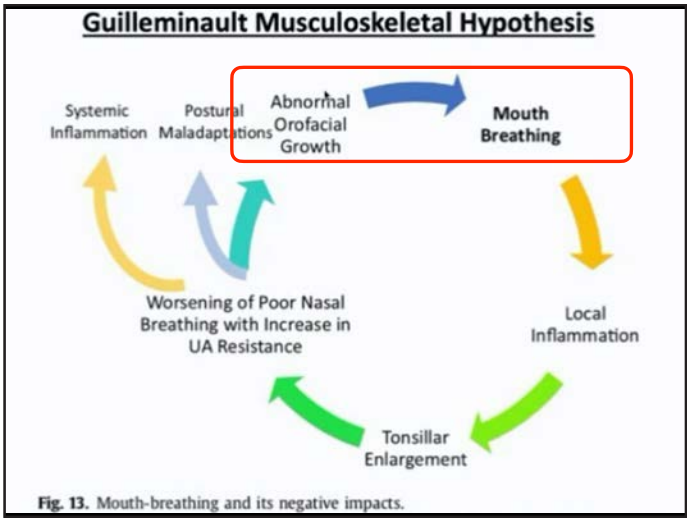


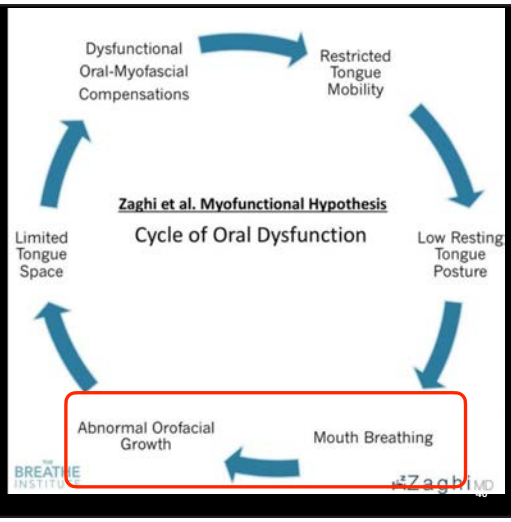
Fig. 13. Mouth-breathing and its negative impacts.

Soroush Zaghi, MD

- Protoge' of Christian Guilleminault
- Ent-Sleep Surgeon, Otolaryngology and Maxillofacial Surgery
- Specilized in Mouth Breathing, Functional Frenuloplasty, OSA and Airway Development
- Over 80 peer-reviewed research publications on SBD

39

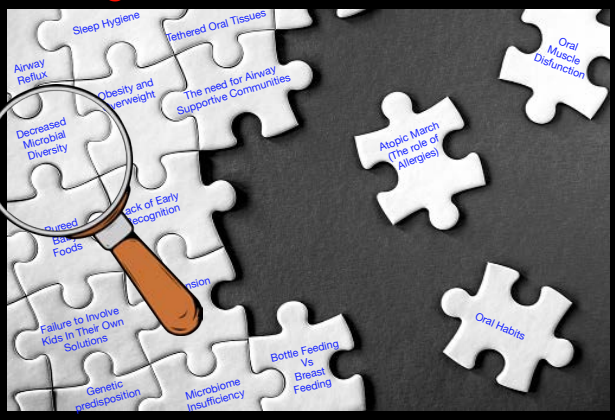
2020



Nasal Disuse

Use it or Lose it!

Etiological Puzzle



EAT Your kid vs. today's food craziness: It's a lot to swallow!

DRINK Bubble, Fizz, Guzzle Gulp: W

DIGEST Support the bugs in your kid ug them!

BREATHE Growing the tongue box to come!

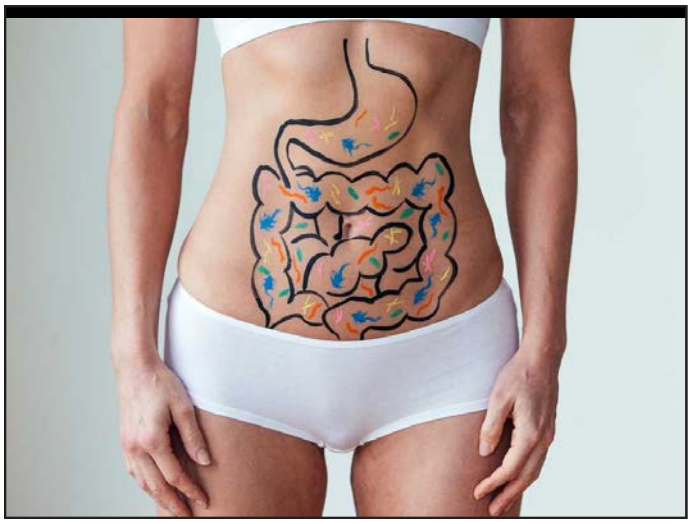
SLEEP The greatest underrated front

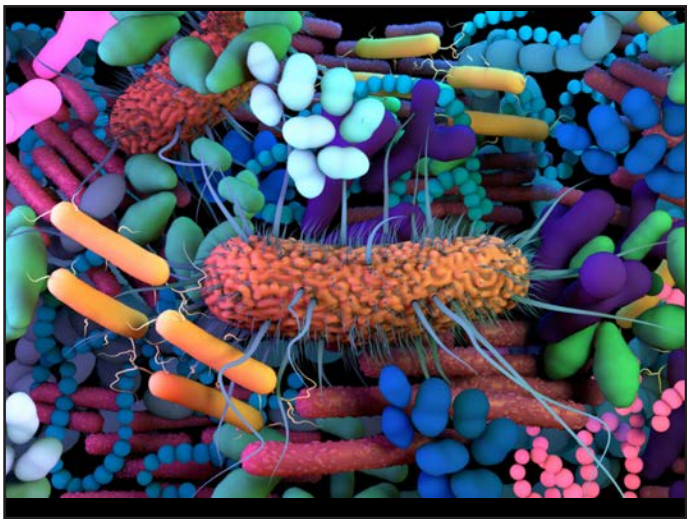
FEEL & THINK Brainiac-Yak Ya

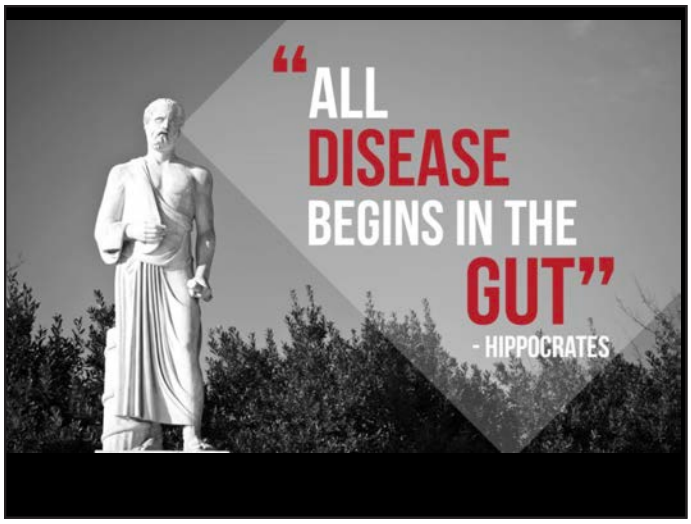
CHEW & SMILE Oral health w letale!

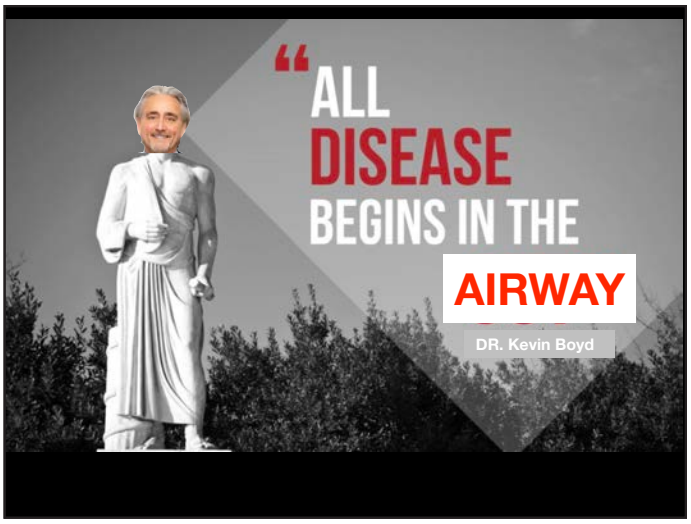
MOVE Foster a daily dose of get-up and go!

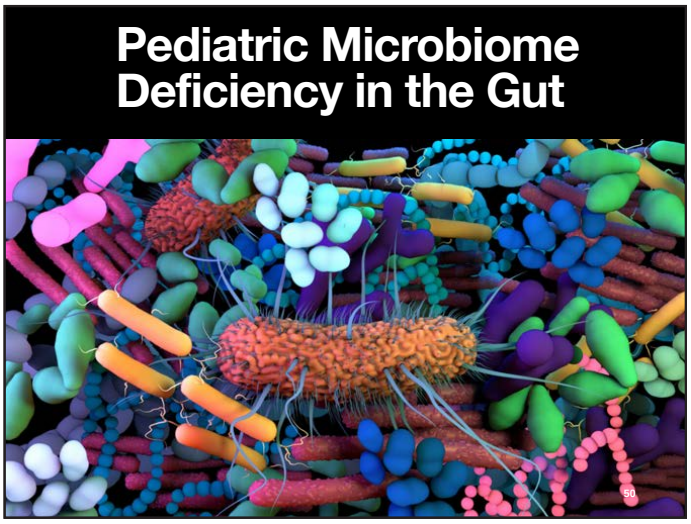
44











Linking the Gut Microbial Ecosystem with the Environment: Does Gut Health Depend on Where We Live?

Nishat Tasnim, Nijiati Abulizi, Jason Pither, Miranda M. Hart,† and Deanna L. Gibson†

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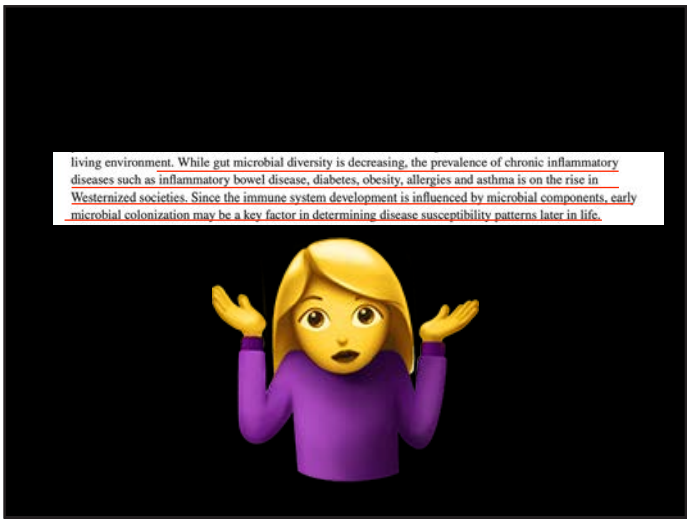
Abstract Go to: ›

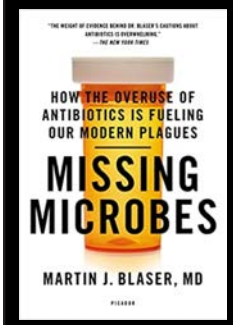
Global comparisons reveal a decrease in gut microbiota diversity attributed to Western diets, lifestyle practices such as caesarian section, antibiotic use and formula-feeding of infants, and sanitation of the living environment. While gut microbial diversity is decreasing, the prevalence of chronic inflammatory diseases such as inflammatory bowel disease, diabetes, obesity, allergies and asthma is on the rise in Westernized societies. Since the immune system development is influenced by microbial components, early microbial colonization may be a key factor in determining disease susceptibility patterns later in life. Evidence indicates that the gut microbiota is vertically transmitted from the mother and this affects offspring immunity. However, the role of the external environment in gut microbiome and immune development is poorly understood. Studies show that growing up in microbe-rich environments, such as traditional farms, can have protective health effects on children. These health-effects may be ablated due to changes in the human lifestyle, diet, living environment and environmental biodiversity as a result of urbanization. Importantly, if early-life exposure to environmental microbes increases gut microbiota diversity by influencing patterns of gut microbial assembly, then soil biodiversity loss due to land-use changes such as urbanization could be a public health threat. Here, we summarize key questions in environmental health research and discuss some of the challenges that have hindered progress toward a better understanding of the role of the environment on gut microbiome development.

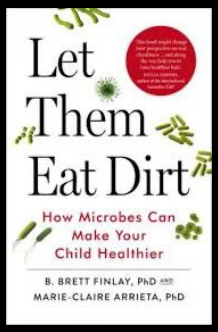


Pediatric Microbiome Deficiency

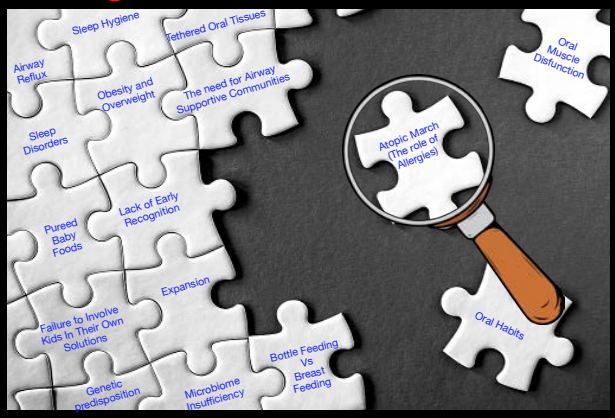
Allergies (especially food) result from reduced microbial diversity in the gut

- Processed food: Sugar, fat, additives
- Lack of diversity of our food: 75 % of our food comes from only 12 species of plants and 5 species of animals
- C-Section rates: U.S.=32% (vs WHO 10-15%)
- Child's antibiotic history (ear aches increased from bottle feeding).
- Antibiotics in meat and milk: 80% of U.S. antibiotics are sold for livestock
- Over sanitization of our living space (dishwashers, dryers)
- Lack of outdoor play





Etiological Puzzle

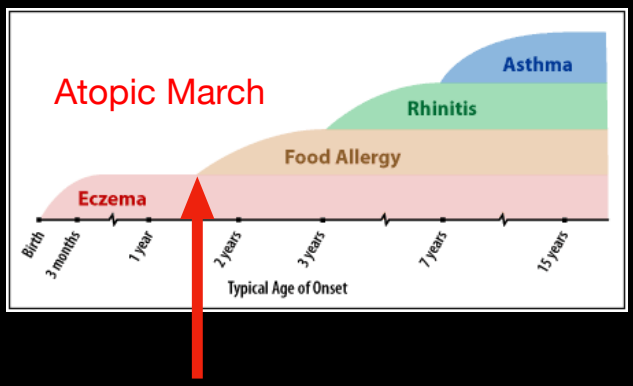


ALLERGIES

- 50% increase in allergies from 1997 to 2011 (CDC)
- One in 20 kids has a food allergy
- ED visits for pediatric allergy every 3 minutes in the US

57

Atopic March



Stuffy Nose

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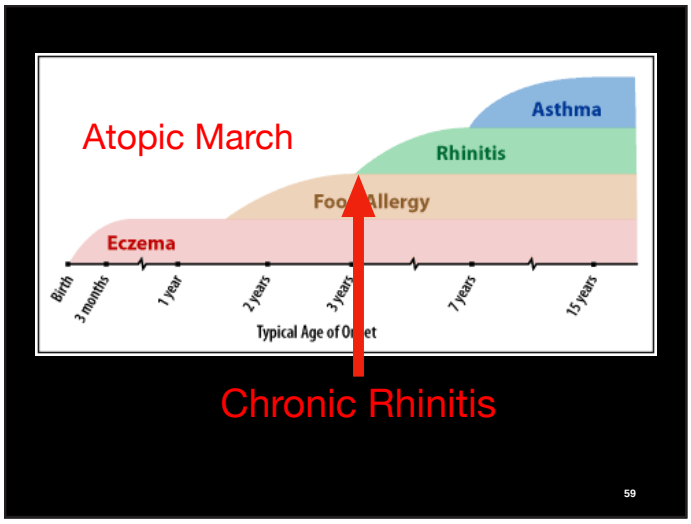
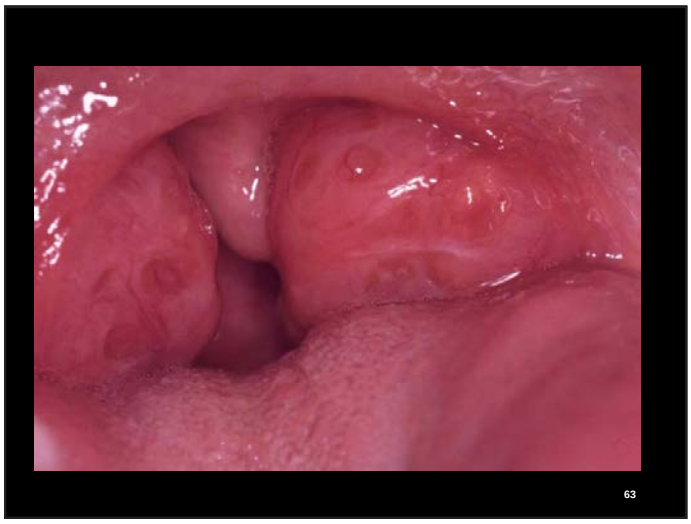


Allergies are considered the most common cause of nasal congestion in children. That leads to compensatory mouth breathing and often SRDB



Treat SRBD in Stages

Increasing Age

Habit Correcting

Guided Growth

Ortho

Treat SRBD in Stages

Increasing Age

Allergy Identification

Habit Correcting

Guided Growth

Ortho

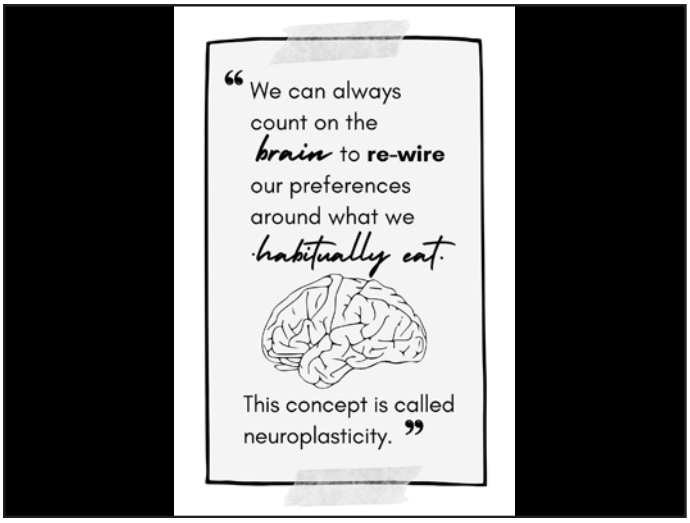
How does western medicine respond to Allergy, Asthma and Autoimmune Disorders?

67

68

Early Feeding to Avoid Allergy

- Breast milk for 6 months exclusively (Pre-industrialized cultures breast fed for an average of 3 1/2 years.)
- Baby-Led Weening because chewing materializes the tongue
- Introduction of high fiber, refined whole grains (one at a time)
- Introduction of vegetables (FIBER)
- Introduction of meats (humanely treated to avoid toxins)
- *Early* introduction of allergenic foods (dairy, wheat, soy, tree nuts, fish and shell fish) (This recommendation changed per the American Academy of Allergy, Asthma and Immunology.)

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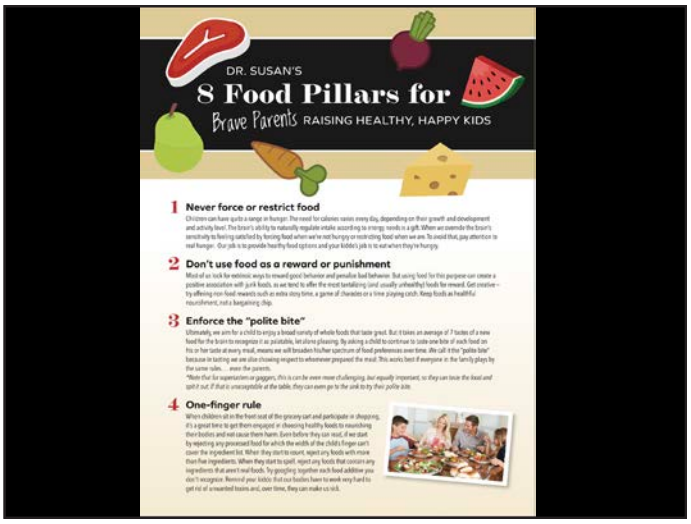
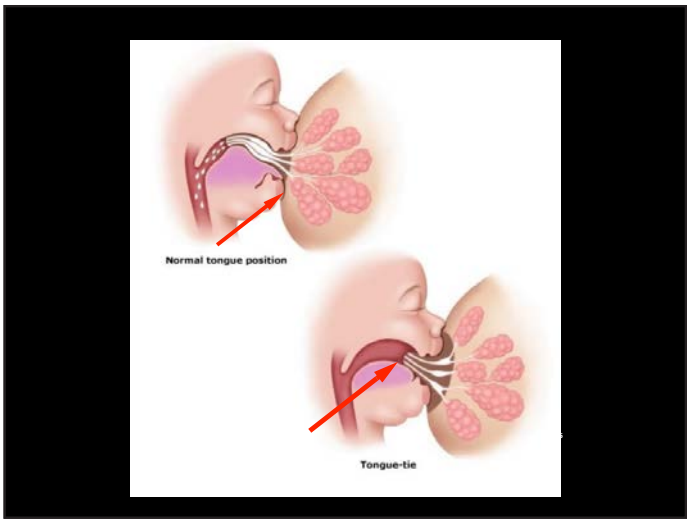
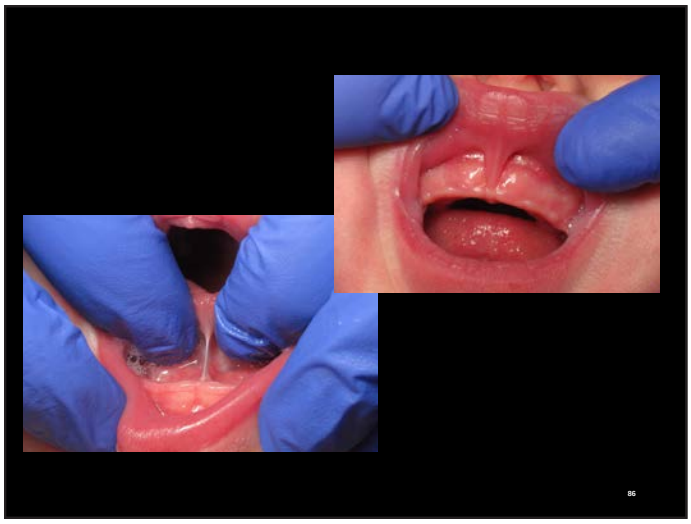

DR. SUSAN'S
8 Food Pillars for
Brave Parents RAISING HEALTHY, HAPPY KIDS
1 Never force or restrict food
2 Don't use food as a reward or punishment
3 Enforce the "polite bite"
4 One-finger rule

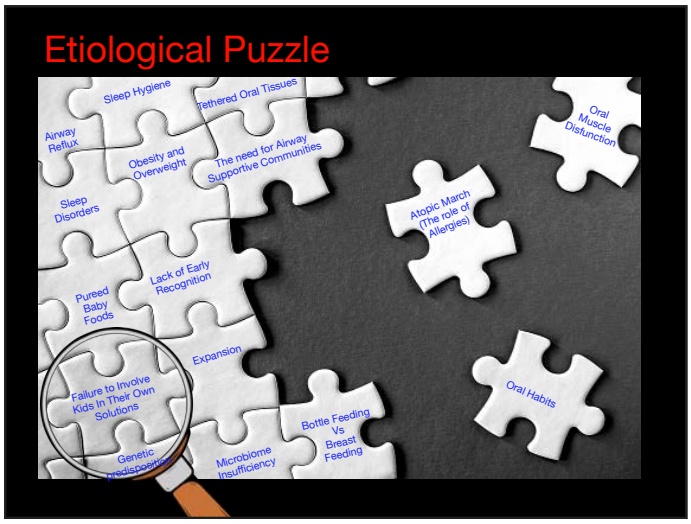

5 Eliminate ALL sugary beverages from your house
6 Keep sweetened breakfast foods in the grocery store
7 Eat WHOLE foods
8 More Plants than Animals, especially plants with color
www.BeaBraveParent.com | www.Total-Health-Dentistry.com

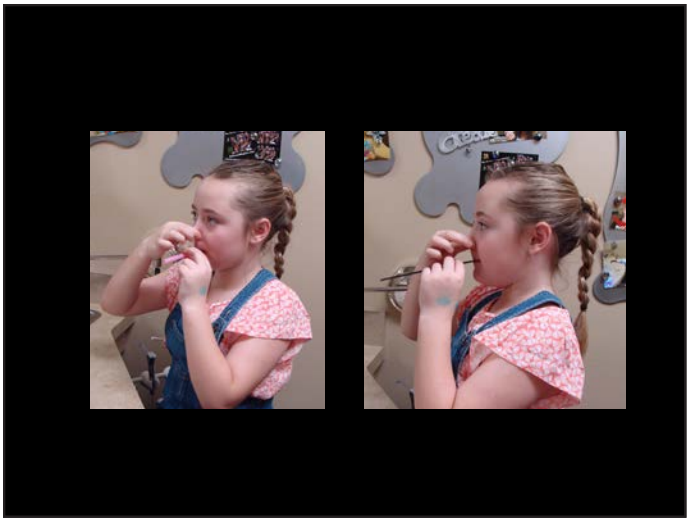

8 Food Pillars PDF
available to download on
BeABraveParent.com
83

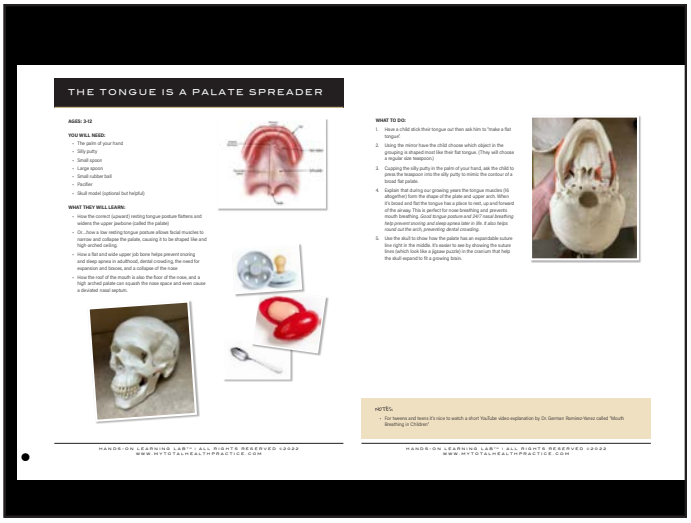

Normal tongue position
Tongue-tie




Baby-Formula Shortage Worsened by Drop in Breast-Feeding Rates
Covid-19 restrictions, pandemic disruptions caused shift in how parents feed their babies, health experts say
"Since 2020,m the share of breast-fed one-year olds has plummeted from an estimated 34% to an estimated 14% in 2023"


Etiological Puzzle
Sleep Hygiene
Tethered Oral Tissues
Airway Reflux
Obesity and Overweight
The need for Airway Supportive Communities
Oral Muscle Disfunction
Sleep Disorders
Atopic March (The role of Allergies)
Pureed Baby Foods
Lack of Early Recognition
Expansion
Failure to Involve Kids In Their Own Solutions
Oral Habits
Bottle Feeding Vs Breast Feeding
Genetic Predisposition
Microbiome Insufficiency



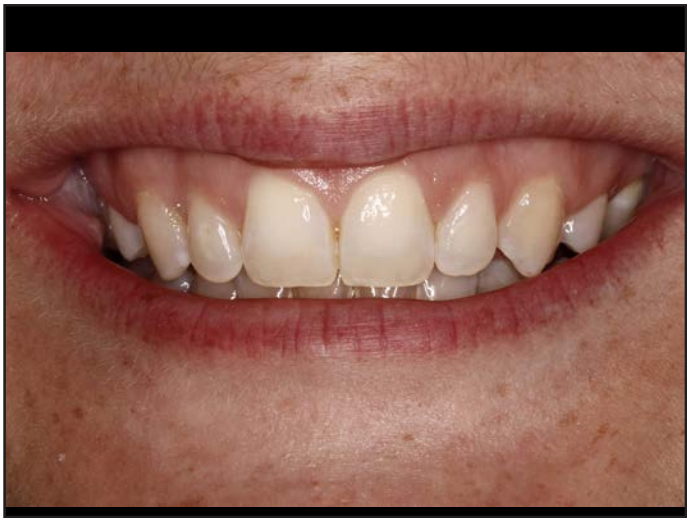


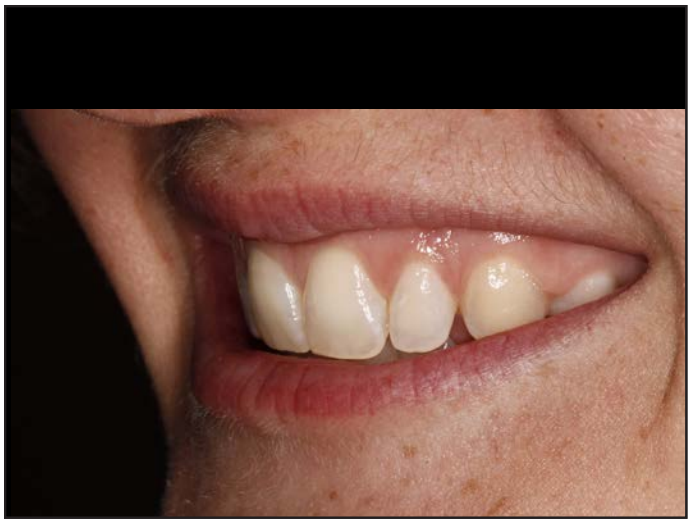
Jenny

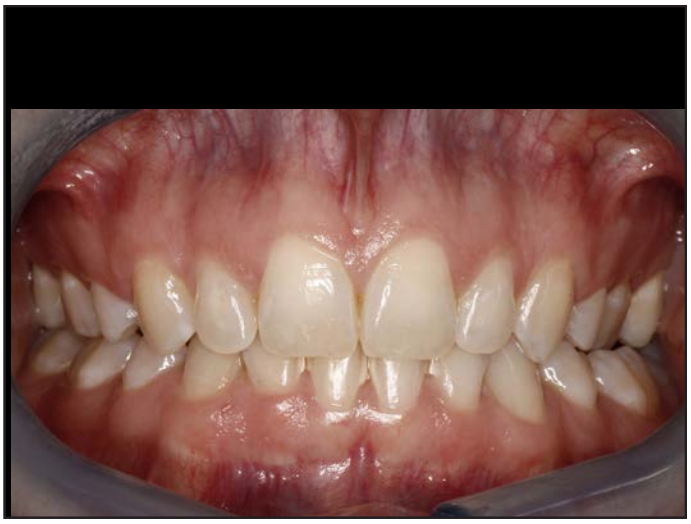
"My mouth has always been the healthiest part of my body,"

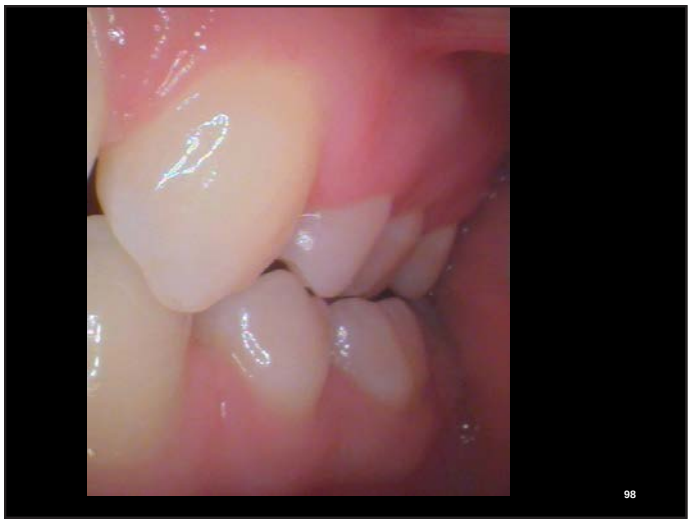
- Perfect teeth, no cavities
- diagnosed with ADHD at age 9 (Rx: Adderall)
- Diagnosed with anxiety disorder at age 14 (Rx: Seroquel)
- Diagnosed with OSA at age 23 and wears a CPAP
- TMJ disfunction w/chronic PAIN
- Limited ROM and deviates to the right on opening
- Clenches habitually in response to unilateral posterior open bite
- Multiple Allergies- with history of Atopic March

94





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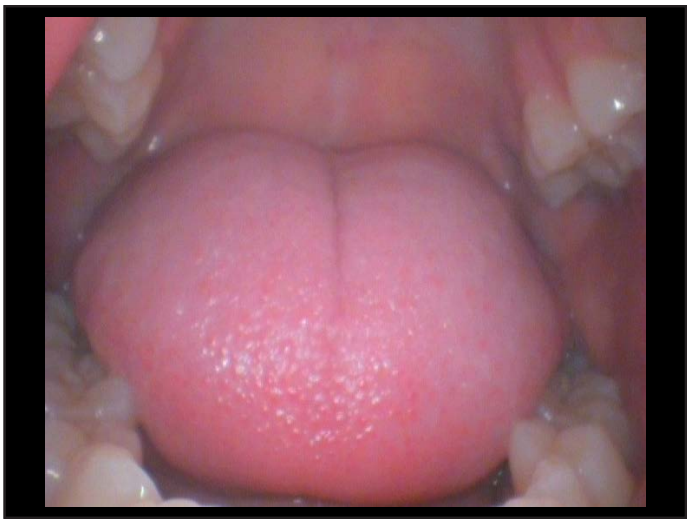

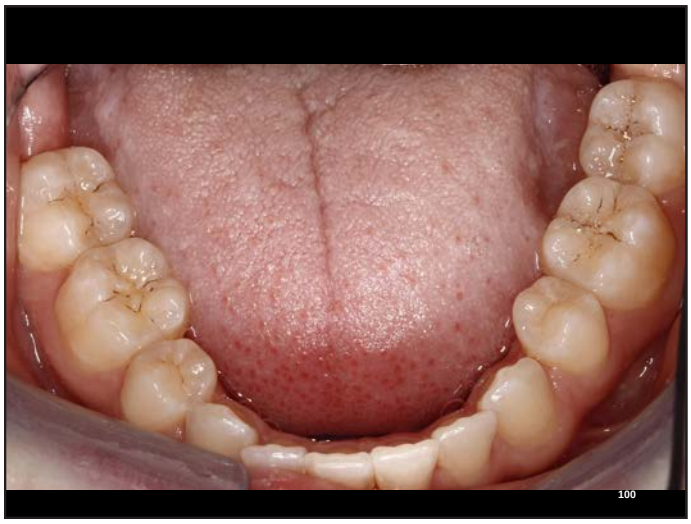
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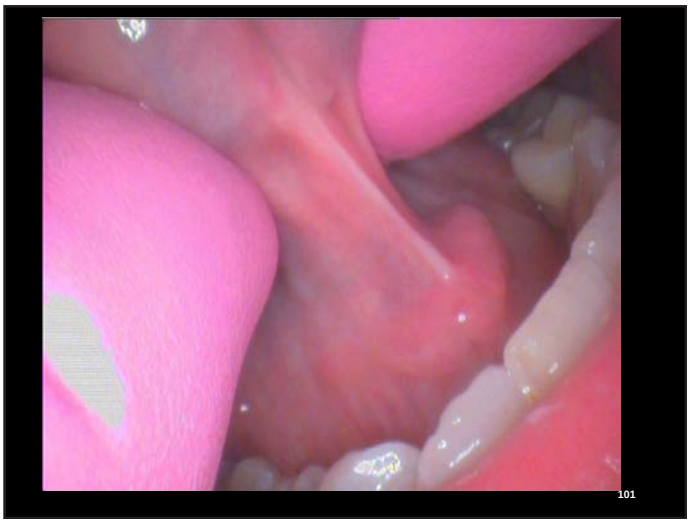
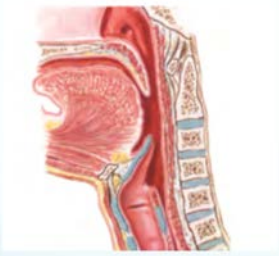
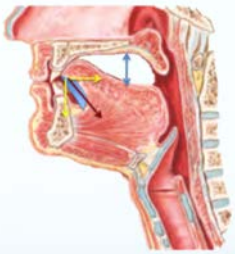

101

Ideal Tongue Position: tongue suctioned up to the roof of mouth

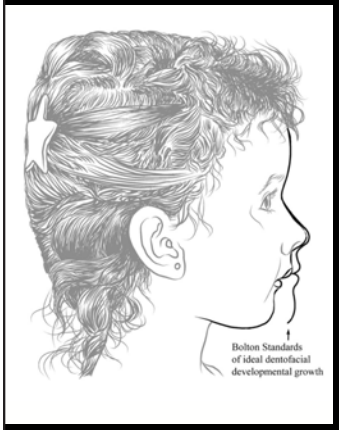


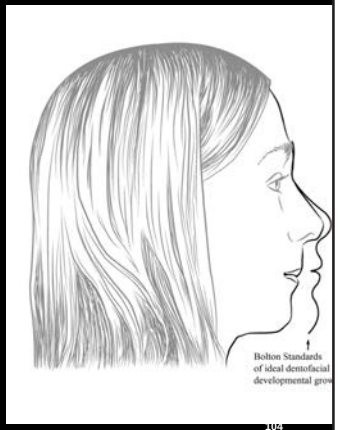
Normal / Optimal
Wide Open Airway



Low Tongue Posture
Tongue blocking airway

Reference Credit: http://www.paragonhealth.net.au/blog/tongue-tie-in-adults





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Jenny

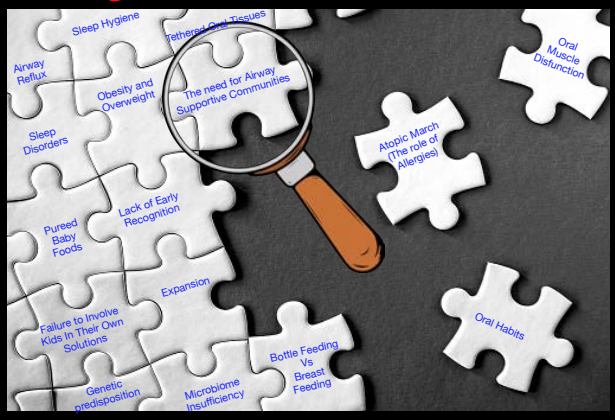
- Perfect teeth, no cavities
- diagnosed with ADHD at age 9 (Rx: Adderall)
- Diagnosed with anxiety disorder at age 14 (Rx: Seroquel)
- Diagnosed with OSA at age 23 and wears a CPAP
- TMJ disfunction and chronic PAIN
- Limited ROM and deviates to the right on opening
- Clenches habitually in response to unilateral posterior open bite
- Multiple Allergies- with history early Eczema, Allergies and Asthma

105

"I had a full-time stuffed up nose. So I had to breathe through my mouth."

106

Etiological Puzzle



Wellness and Prevention Study Club

102

The Greater Lansing Pediatric Airway Team presents

Breathe Well, Little One:

Pediatric Sleep Disordered Breathing (SDB) Forum for Healthcare Professionals

Approximately 25% of adults have sleep-related breathing disorders such as Upper Airway Resistance Syndrome (UARS) and Obstructive Sleep Apnea (OSA) and we now know it's mostly preventable. This forum will teach you how to recognize your patient's risk factors and the progression of breathing disorders from cradle to commencement. Together we can change the health trajectory of our community's youth.

Tuesday, November 5, 2019
6:00-8:30pm

University Club of MSU
3435 Forest Road, Lansing, MI 48910
Complimentary Dinner Included

Limited to 50 attendees. RSVP to Molly Day at 517.694.9585 or molly@drsusanmaples.com by 10/31/19

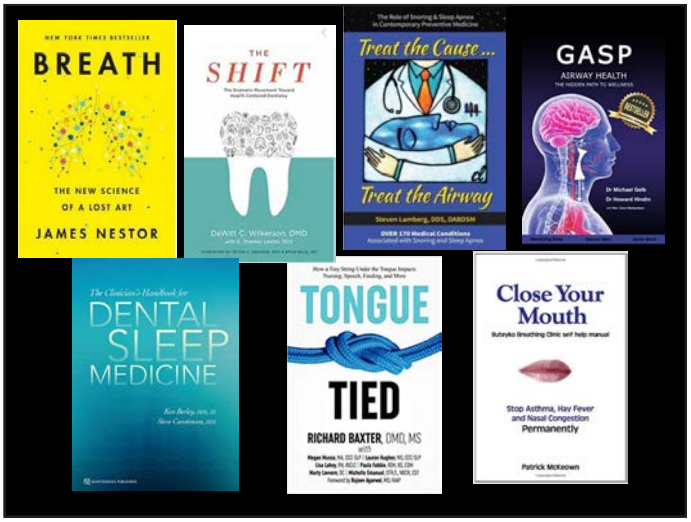
You will learn:

- How to be differentiating between parent reported symptoms and clinical signs of SDB and OSA
- Screening for pediatric sleep disorders
- Status and understanding of pediatric sleep studies
- Treatment for pediatric patients with frank OSA
- When and how we make confident referrals for removal of tonsils and adenoids related to SDB
- Importance of 24/7 silent nasal breathing
- Why a good breastfeeding latch matters for breathing and mid-face development
- Why and when myofunctional therapy makes a difference

Featured speakers:

Dr. Susan Maples, Total Health Dentist | Dr. Erin Kirkham, Pediatric ENT | Dr. C.M. Gera, Sleep Physician | Dr. Ashok Gupta, Sleep Physician

See it Sooner… and Help Kids Thrive!



TotalHealthPractice.net

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Never doubt that a small group of thoughtful, committed citizens can change the world; indeed, it's the only thing that ever has.

- Margaret Mead

Susan@DrSusanMaples.com
(517) 819 6330 cell

SELF EVALUATION

Treating Pediatric Breathing Disorders to Head off Adult UARS and OSA

1. T/F - Identifying and treating sleep disorders in infants and children has very little bearing on the possibility of preventing obstructive sleep apnea in adults.

2. What percentage of ADHD diagnosis has now been attributed to sleep disorders in children?

a. 2%
b. 10%
c. 18%
d. 37%

3. Some of the symptoms of airway obstructions or sleep disordered breathing in children include:

a. headaches
b. bed wetting
c. wrestles sleep
d. poor performance in school
e. behavior disturbances
f. all of the above

4. When tongue develops normally and takes it's place on the top of the palate it can positive influence:

a. Nasal breathing
b. Expansion of the palate
c. Proper occlusal relationships
d. Speech development
e. Development of the nose and maxillary sinuses
f. All of the above
g. None of the above

5. T/F - Enlarged tonsils and adenoids are a significant risk factor for sleep disordered breathing also the enlargement of tonsils/adenoids can be a result of open mouth breathing/sleep disorder.

6. The brain growth (and so the cranium), from birth to age two is on average:

a. 40% to 50% adult size
b. 30% to 80% adult size
c. 90% to 100% adult size
d. none of the above

7. T/F - The number one reason for a chronic stuffy nose (and compensatory mouth breathing) in kids is allergies.

8. T/F - An untreated tongue tie that keeps the tongue from pressing upward on the palate also can allow the cheek and facial muscles to narrow the upper palate

9. T/F - The prevalence of allergies in the children's population is finally on the decline.

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

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Planning for Retirement After the Consolidated Appropriations Act of 2023

Carole C. Foos, CPA

Topics we will Cover

- New Required Minimum Distribution (RMD) Rules
- Catch-Up Contributions for High Income Earners
- Tax Diversification Strategies
- Using Non-Qualified and Defined Benefit Plans in Retirement Planning

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Changes to Required Minimum Distributions

- Previous age for RMD = 72
- New law increases
  - 73 for those born 1951-1959
  - 75 for those born 1960 and later
- Qualified Charitable Distribution stays at 70 ½
- RMD penalty drops to 25% (from 50%)
- Eliminates RMD's for Roth 401(k) and 403(b) – same as Roth IRA beginning 2024

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How to Plan for RMD Changes

- Individuals with more $$ than they will need in retirement account will need to decide: take RMD's earlier or wait until required?
  - Spread out tax burden, potentially maintain a lower tax bracket
  - Reduce future RMD's to minimize impact on future tax
  - Increase flexibility in financial planning (pay off debt, charitable endeavors, add to after-tax investment accounts)
  - Estate planning – heirs may be in a higher tax bracket than you will be in retirement
  - Hedge against future tax changes and investment performance potentially increase diversity
  - Fund charitable giving

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How to Plan for RMD Changes

- Acceleration of tax liability - timing as well as potentially higher tax bracket
- Impact on Retirement Income – reduction in account balance diminishes future availability
- Loss of tax-deferred growth
- Loss of asset protection
- Reduced inheritance for beneficiaries
- Potential to miss investment opportunities

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Catch-Up Contributions for High Income Earners

- Beginning 2026 (IRS Notice 2023-62) if wages from sponsoring employer exceeded $145,000 previous year , catch-up must be to Roth for 401(k), 403(b), governmental 457(b)
- May not apply if job change
- Does not apply to IRA catch-up including SIMPLE IRA
- Limit applies based on FICA wages (somewhat unclear regarding SE income)
- This means catch-up will be made with after tax dollars
- If plan does not have Roth option and there are participants in this category, no one will be allowed catch up contributions
- Beginning after 2024, catch-ups indexed for inflation

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Catch-Up Contribution Example

- Dr Jones, age 55, earns $300,000 in W2 income from ABC Orthopedics in 2025
- Wants to maximize 401(k) salary deferrals and a catch-up in 2026
- Assuming same limits as 2024, she can defer $23,000 into traditional 401(k) in 2026 but $7,500 catch-up must be to Roth
- $23k pre-tax; $7,500 after-tax
- If she changes jobs and works for XYZ Ortho in 2026, can presumably make all with pre-tax dollars

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Additional Catch-Up ages 60-63

- Beginning in 2025, those aged 60-63 can make increased catch-up contributions
- Applicable to 401(k)'s and similar plans as well as SIMPLE IRA's
- For qualified plans, additional limit will be > of 150% of regular catch-up amount for the year OR $10,000 (150% of current catch-up = $11,250 so limit would be $11,250)
- For SIMPLE plans, additional limit is greater of 150% of regular catch-up OR $5,000
- Catch-up amounts indexed for inflation beginning in 2024

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Tax Diversification Strategies

- Maintain a mix of tax-deferred, tax-free and taxable accounts
- Tax-Deferred includes traditional 401(k) and 403(b) and IRA's
- Tax-Free includes Roth 401(k), Roth IRA and permanent life insurance
- Taxable accounts include after-tax brokerage accounts and real estate investments

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Tax Diversification Strategies

- Tax-Deferred
  - Pre-tax contributions reduce current tax liability
  - Contribute in years when in higher tax brackets
  - Manage withdrawals in retirement to minimize tax / control tax bracket
- Tax-Free
  - After-tax contributions but tax-free growth and distributions
  - Contribute in years of lower tax brackets
  - Contribute at least partially for diversification / tax hedge
- Taxable
  - After-tax contributions / investments
  - Subject to current rates on income and gains
  - Flexibility in terms of liquidity and penalty-free withdrawals
  - Can utilize tax loss harvesting and LTCG treatment

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Tax Diversification

ORDINARY INCOME	CAPITAL GAINS	TAX FREE
37.0% FEDERAL + 6.6% STATE + 3.8% ACA (47.4% TAX)	20% FEDERAL + 6.6% STATE + 3.8% ACA (30.4% TAX)	(0% TAX)
WITHDRAWAL: $100,000	WITHDRAWAL: $100,000	WITHDRAWAL: $100,000
LESS TAX: $47,400	LESS TAX: $30,400	LESS TAX: $0
NET AFTER TAX: $52,600	NET AFTER TAX: $69,600	NET AFTER TAX: $100,000

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Addition of Non-Qualified and DB Plans

- Non-Qualified Plans
  - In addition to qualified plan
  - Higher contribution limits
  - Flexibility on who participates and to what extent
  - Flexibility on timing of distributions
- Defined Benefit Plans
  - In addition to defined contribution plan
  - Specific retirement benefit based on years of service and compensation
  - Fully funded by employer

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Non-Qualified Plans

- Generally offered to key executives / owners
- Participation at discretion of employer
- Often specific benefit amount or formula-based income stream
- Employer contributions (depending on type of plan and where assets held, could be subject to creditors of employer)
- Vesting schedules permitted
- Contributions can be greater as long as reasonable compensation
- Tax implications for practices as contributions likely don't provide tax deduction until benefit paid

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Defined Benefit Plans

- Actuarially determined contribution amount
- May be able to contribute $200k plus annually
- Tax deductible contributions, tax-deferred growth
- Asset protection
- Employee costs can be high
- Penalties for underfunding or termination
- Can be a tool for attracting / retaining talent
- Distributions taxed at ordinary income tax rates

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Miscellaneous Provisions

- Employer non-forfeitable matching and non-elective contributions can be made to Roth's effective immediately
- SIMPLE and SEP contributions can be made to Roth's starting in 2023

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529 to Roth IRA Transfer

- Beginning 2024, 529 plan balances can be transferred to Roth IRA's
  - Roth account must be in name of 529 beneficiary
  - 529 plan must have been maintained at least 15 years
  - No transfer of contributions made within last 5 years and their earnings
  - Lifetime max transfer $35,000
  - Annual transfer limit = IRA contribution limit for that year less contributions already made
  - Beneficiary will need to have earned income to contribute
  - Change beneficiary restart 15 year????

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Employer Provisions

- Beginning 2024 employee student loan payments treated as elective deferrals for purpose of matching
  - Based on employee certification of payments
  - Vesting and matching rules must be same as if loan payment were employee deferral
- New Starter 401(k) for businesses that don't currently offer retirement plans (2024)
  - Would include automatic enrollment
  - Contribution limits = IRA contribution limits
- New plans required to have auto enrollment
- Part-time employees can participate if age 21 or completed 12 months and >1,000 hours OR 2 12-month periods of >500 hours

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Conclusion

- Understand changes and how they affect your current plans and your future funding
- Work with your financial advisor to implement a tailored strategy in order to optimize your retirement readiness
- Key to secure retirement is informed decision making and proactive financial planning

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PERSONAL
WEALTH
PLANNING

DIAGNOSTIC vs. TREATMENT

ADVICE & EXPERTISE FOR A FLAT FEE

BUILDING A RELATIONSHIP

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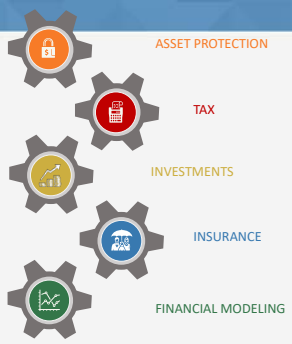

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SELF EVALUATION

Planning for Retirement After the Consolidated Appropriations Act of 2023

1. The age for required minimum distributions for someone born in 1958 is:

a. 70.5
b. 72
c. 73
d. 75

2. One benefit of taking distributions before required age is:

a. Delaying payment of tax
b. Spreading out tax burden to maintain a lower tax bracket
c. Maximize tax-deferred growth
d. Better asset protection outside retirement plan

3. Wage earners earning above $145,000 must make catch up contributions to A Roth account beginning in

a. 2024
b. 2025
c. 2026
d. Never

4. In 2025 workers aged 60-63 can make catch up contributions to a 401k plan of :

a. $7,500
b. Zero
c. > 150% of current catch up contribution amount or $10,000
d. > 150% of current catch up contribution amount or $5,000

5. Tax Deferred accounts generally have:

a. After tax contributions and tax-free growth and distributions
b. After-tax contributions and capital gains rates on distributions
c. Pre-tax contributions and ordinary taxes when distributed
d. After-tax contributions and ordinary tax when distributed

6. T/F - A non-qualified plan must cover all employees in the same manner without discrimination.

7. T/F - A 529 plan can be rolled over to a Roth IRA of the same beneficiary if the account has been maintained for at least 15 years.

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

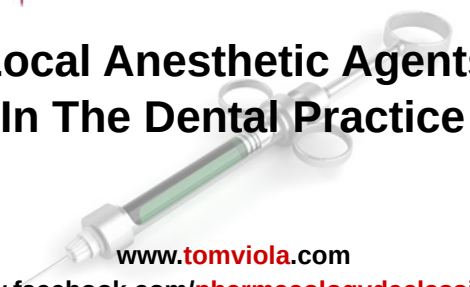
TOM VIOLA
PHARMACOLOGY DECLASSIFIED

Local Anesthetic Agents in the Dental Practice

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

TOM VIOLA
PHARMACOLOGY DECLASSIFIED

Local Anesthetic Agents In The Dental Practice



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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.

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.

If You're Thinking…

"Why is it so complicated anyway?"

Significance of Phospholipid Membranes

 7

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.

 8

If You're Thinking…

"Wait, you just said local anesthetic molecules had to be fat-soluble to cross phospholipid membranes.

But, when I look at a local anesthetic cartridge, I can see water in there!

Doesn't that mean that the local anesthetic molecule is water-soluble then?!"

 9

Significance of Biochemistry

 10

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

Hydro-chloric Acid (HCl) + Lidocaine (for topical use) ⇌ Lidocaine HCl (for injection) + Water

 11

If You're Thinking…

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

 12

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

Hydro-chloric Acid (HCl) + Lidocaine (for topical use) ⇌ Lidocaine HCl (for injection) + Water

 13

If You're Thinking…

"OK, you said local anesthetic molecules had to be fat-soluble to cross membranes.

But, now you just said the local anesthetic molecule is water-soluble in the cartridge!

How can it be both?"

 14

Significance of Biochemistry (again!)

 15

Significance of Biochemistry

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

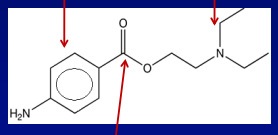
- The two opposite ends are joined by either an ester or amide chemical linkage.
- Anesthetics without a hydrophilic segment are not injected, but are used topically (benzocaine).

 16

Significance of Biochemistry

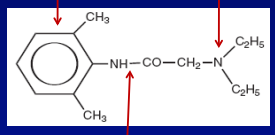
Local anesthetics are classified by the chemical linkage between these two opposite ends.

Lipophilic Hydrophilic



Ester Linkage ("esters")

Lipophilic Hydrophilic



Amide Linkage ("amides")

 17

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

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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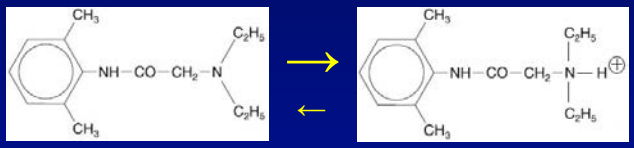
Significance of Biochemistry

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"

 20

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…

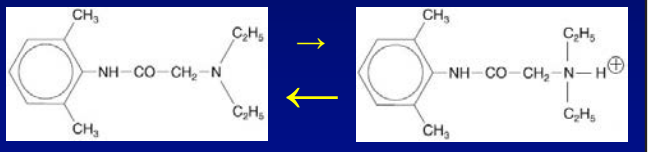
"But if the local anesthetic is water soluble in the cartridge how does it become fat soluble to cross membranes?

 22

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"

 23

If You're Thinking…

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

 24

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
- pH of the tissues has to be high enough for local anesthetic to convert to non-ionized form

 25

Dental Local Anesthetic Agents For Injection

 26

Articaine

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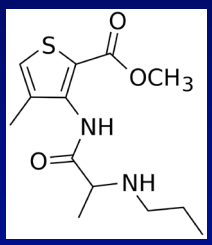
Articaine

- 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
    - Cartridges contain sulfites!

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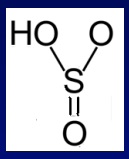
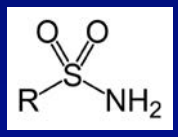
Sulfur vs. Sulfa vs. Sulfite vs. …



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.

 31

Bupivacaine

 32

Bupivacaine

- Clinical Advantages
  - Very useful in extended procedures
  - Provides extended postoperative pain control (up to 12 hours of relief)
    - May decrease need for opioid analgesics
  - Useful in situations where profound anesthesia is difficult to achieve with all other available drugs

 33

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

 34

Bupivacaine

- Clinical Disadvantages
  - Long duration of action increases:
    - Risk of self-inflicted soft tissue injury
    - Risk of cardiovascular and CNS toxicity

 35

Lidocaine

 36

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

 37

If You're Thinking…

"Which anesthetic is safe to use for a pregnant patient?"

 38

Lidocaine

- Onset of action
  - 2 to 3 minutes
- Available formulations
  - 2% lidocaine with epinephrine 1:50,000
  - 2% lidocaine with epinephrine 1:100,000

 39

Lidocaine

- Clinical Disadvantages
  - Not available without vasoconstrictor
  - Limits clinical advantage in pregnancy

 40

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

 41

Mepivacaine

- Onset of action
  - 1.5 to 2 minutes
- Available formulations
  - 3% mepivacaine (plain)

 42

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

 43

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

 45

Prilocaine

- Clinical Disdvantages
  - Metabolized directly to orthotoluidine
    - 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

 47

Topical Local Anesthetic Agents

- Benzocaine
  - An **ester**
  - Commonly used formulations
    - Aerosols (Hurricaine)
    - Gels (Anbesol, Orajel)
    - Solutions (Anbesol, Orajel)
  - Specific considerations
    - OTC dental pain relief (Orajel, Anbesol)
    - May impair gag reflex

 48

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

 50

Topical Local Anesthetic Agents

- Tetracaine
  - –An **ester**
  - –Commonly used formulations:
    - Cetacaine® Liquid (viscous, water-soluble base)
      - –Benzocaine 14%
      - –Butamben 2%
      - –Tetracaine 2%
  - –Specific considerations
    - Rapid onset (approximately 30 seconds)
    - Long duration (typically 30-60 minutes)

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Dental Local Anesthetic Drug Interactions

 52

Significant Drug Interactions with Local Anesthetics

Local Anesthetic	Interacting Drug	Nature of Interaction
All local anesthetics	Other local anesthetics (including topical)	Toxicity of local anesthetics is additive when administered in combination
All local anesthetics	Opioid analgesics; CNS Depressants	Additive sedation may occur; increased risk of local anesthetic overdose
Lidocaine	Tagamet (cimetidine)	Competes for metabolism via liver enzymes, results in prolonged action of lidocaine and toxicity

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Significant Drug Interactions with Vasoconstrictors

Vasoconstrictor	Interacting Drug	Nature of Interaction
Epinephrine	Tricyclic Antidepressants (TCA's) ▪ Amitriptyline (Elavil) ▪ Nortriptyline (Pamelor) ▪ Imipramine (Tofranil) ▪ Clomipramine (Anafranil)	Enhances cardiovascular action of epinephrine; may result in hypertensive crisis Severity: Inhibit reuptake of epinephrine; interaction is theoretical and may be seen only at high doses SSRI's not involved

 54

Significant Drug Interactions with Vasoconstrictors

Vasoconstrictor	Interacting Drug	Nature of Interaction
Epinephrine	Monoamine oxidase inhibitors (MAOI's) ▪ Phenelzine (Nardil) ▪ Tranylcypromine (Parnate) ▪ Selegiline (Emsam Patch)	Interfere with enzymatic inactivation of epinephrine; may result in hypertensive crisis Severity: Epinephrine is primarily metabolized by COMT; interaction may be minimal

 55

Significant Drug Interactions with Vasoconstrictors

Vasoconstrictor	Interacting Drug	Nature of Interaction
Epinephrine	Non- selective beta-blockers ▪ Propranolol (Inderal) ▪ Timolol (Blocadren) ▪ Sotalol (Betapace) ▪ Nadolol (Corgard)	Blockade of beta receptors enhances alpha receptor activity, rapid increase in blood pressure followed by reflex bradycardia Severity: Avoid use of epinephrine if possible; monitor for increased systolic, diastolic pressure

 56

Dental Local Anesthetic Contraindications

 57

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.

 59

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).

 60

Considerations With Epinephrine

 61

Vasoconstrictors

Vasoconstrictors are added to local anesthetic solutions to counteract this vasodilation and control tissue perfusion.

- Decreased 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

 62

Vasoconstrictors

Receptor	Stimulation by epinephrine produces:
α_1	Vasoconstriction
β_1	Increased cardiac activity
β_2	Bronchodilation Vasodilation

 63

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

 64

If You're Thinking…

"Why should I use epinephrine? Why should I not use it?"

 65

Considerations with Epinephrine

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.

 66

Considerations with Epinephrine

If the patient is cleared for treatment, then epinephrine should be used in the lowest possible effective concentration.

- Use of epinephrine is contraindicated in situations of severe uncontrolled cardiovascular disease.
- However, these situations in themselves are contraindications to elective dental treatment!

 67

Considerations with Epinephrine

In patients with clinically significant cardiovascular impairment, the maximum recommended dose of epinephrine is 0.04 mg per appointment, or 2 cartridges of 1:100,000 dilution.

1:50,000 dilution = 1 cartridge
1:100,000 dilution = 2 cartridges
1:200,000 dilution = 4 cartridges

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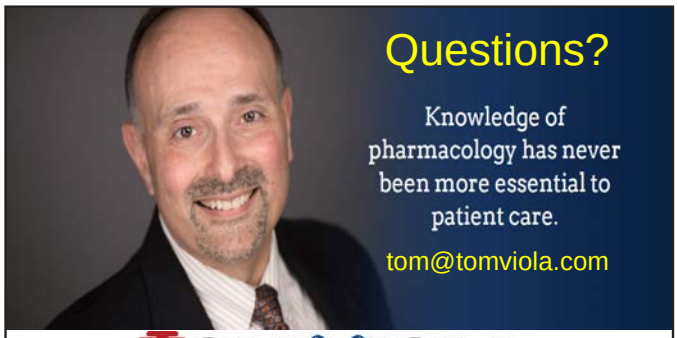

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SELF EVALUATION

Local Anesthetic Agents in the Dental Practice

1. T/F - Lidocaine is available with epinephrine in concentrations of 1:100000 and 1:200000.

2. Infection at the injection site decreases the effectiveness of local anesthetics due to:

a. Excessive dehydration
b. Low tissue pH
c. Intense pain
d. Rapid metabolism
e. High tissue pH

3. Which portion of the local anesthetic molecule determines the classification of the drug as an ester or amide local anesthetic?

a. Lipophilic portion
b. Hydrophilic portion
c. Intermediate bond
d. Sulfur atom
e. Sulfite bond

4. Which of the following is NOT an amide local anesthetic?

a. Mepivacaine (Carbocaine)
b. Procaine (Novocain)
c. Prilocaine (Citanest)
d. Articaine (Septocaine)
e. All of the above

5. T/F - Articaine is contraindicated in patients with a sulfonamide (“sulfa”) allergy.

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