

Have Your Dentist Saying
"I have the best hygienist ever!"
 And you Saying
"I work in the best office ever!"

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Disclaimer Inside Dental Hygiene

Tufts School of Dental Medicine

CELLERANT CONSULTING GROUP

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P&G

ivoclar vivadent: passion vision innovation



Course Objectives

- * Improve practice profitability through communication, caries management, using new technology, aiding in treatment planning and strategic scheduling
- * Understand that caries management programs do not have to be complicated and time-consuming
- * Identify dental and restorative materials and techniques that offer favorable long-term outcomes
- * Rejuvenate your career!

Prosthodontics & Prevention

- Older patient population
- Complex MH, Medications
- Caries risk assessment
- Diagnosis and treatment planning
- Many restorative procedures increase caries risk
- Favorable and predictable outcomes

CARIES

Caries is the most prevalent disease in the world

Surgeon General: dental caries is the single most common chronic disease of childhood

Starting at age 60, tooth decay rates are equal to or greater than adolescent decay rates who grew up with no fluoride in the water

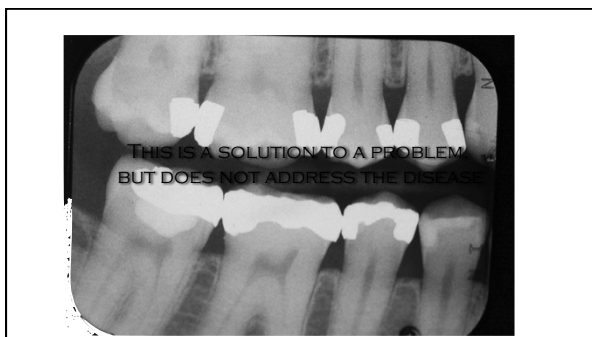
91% of adults are affected by caries in their lifetime

World Health Organization 2010
 Healthy People 2010 Surgeon General Report
 Singer P. Oral health and chronic disease prevention. J Am Dent Assoc. 2011;142(1):14-20
 Bollen Agdliv, DDS, Barker LK, Carrico HT, et al. Centers for Disease Control and Prevention. Surveillance for dental caries, dental visits, tooth retention, edentulism and advanced furcation. United States, 1989-94 and 1999-2002. NCHS Data Series 2002(D-12)

COMMON CARIES MISCONCEPTIONS

- Children and adolescents are at the highest risk for developing caries and caries risk reduces with age.
Just the opposite!
- If you brush and floss your teeth, you will not be as susceptible to caries.
False!
- High amounts of topical fluoride will minimize risk.
Sometimes!
- If incipient caries are detected, the least invasive thing to do is to watch it.
NEVER!

Who has caries?



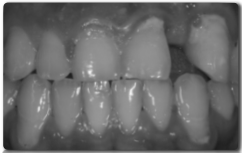
THE DISEASE: *Dental Caries*

Bacteria ◊ pH ◊ Inadequate exchange of minerals

Not a hole in a tooth!

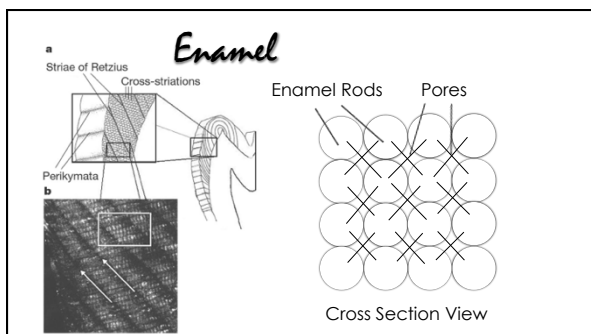
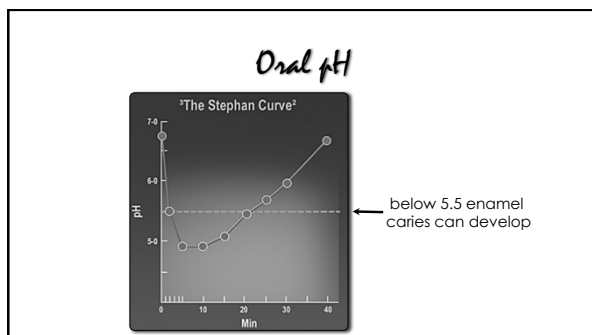
Bacteria

- S. mutans
- S. sobrinus
- Lactobacillus
- other bacteria

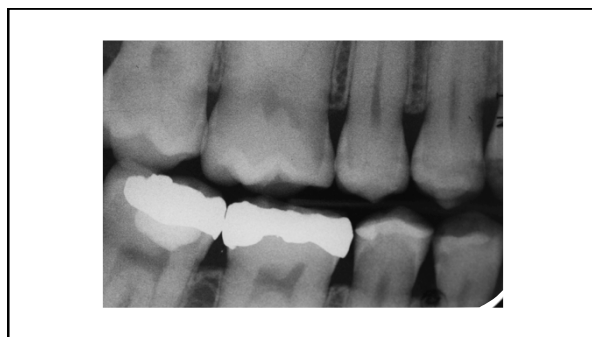
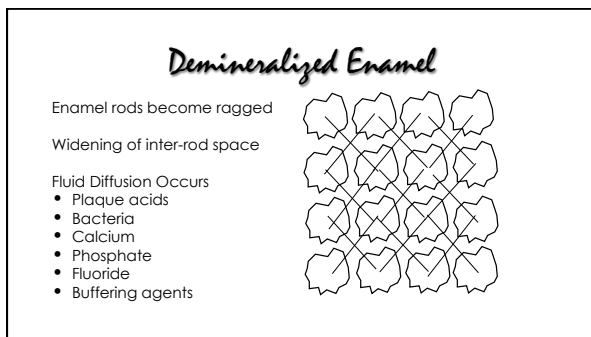


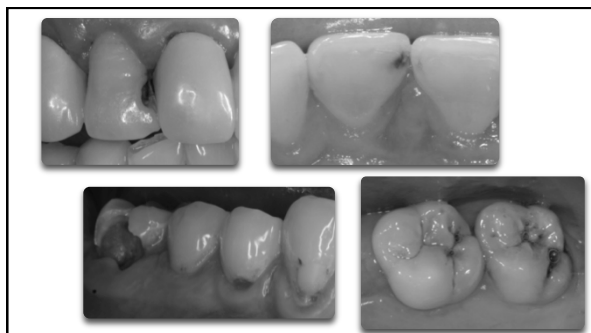
- Sticks to tooth
- Converts sucrose to glucan
- Lactic acid byproduct

Acidogenic, Aciduric, Cariogenic



- ### Demineralization
- Constant cycle of acids formed by bacteria on teeth
 - Acids remove minerals from teeth faster than the saliva can restore the minerals
 - Without chemotherapeutics and risk management, demineralization will lead to caries






DENTAL CARIES
Impact on a Patient's Quality of Life

- ✓ Diminished comfort, function, aesthetics and perception of oral health
- ✓ Increased anxiety
- ✓ Increased cost
- ✓ Direct link to systemic conditions


DENTAL CARIES
Impact on a Clinician's Quality of Life

- ✓ Increased anxiety
- ✓ Delivering "bad news"
- ✓ Lack of control of disease process
- ✓ Reduced lifespan of restorations


So, we can't see the disease, but we need to identify it before it destroys teeth?!



CAMBRA
Caries Management by Risk Assessment



Evidence Based
 Caries can be prevented and cured
 Risk Assessment
 Risk Management
 ADA adopted protocols




CAMBRA
 (CARIES MANAGEMENT BY RISK ASSESSMENT)

Journal of the California Dental Association, Oct & Nov 2007

Why would I consider a Caries Management Program for my Practice?

RECORD REVIEW

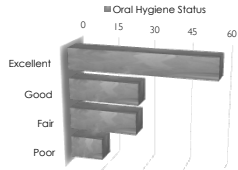


132 Patients
 Demographic Information
 # of new carious lesions
 # of reversal of incipient lesions
 Oral Hygiene Status
 Risk Category

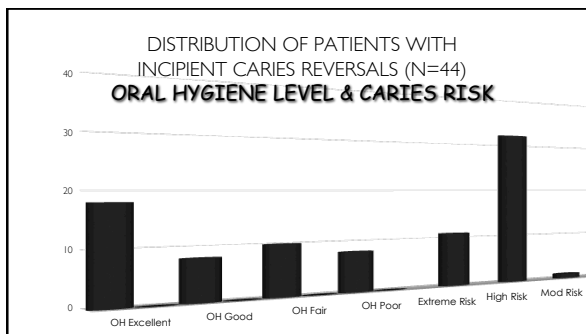
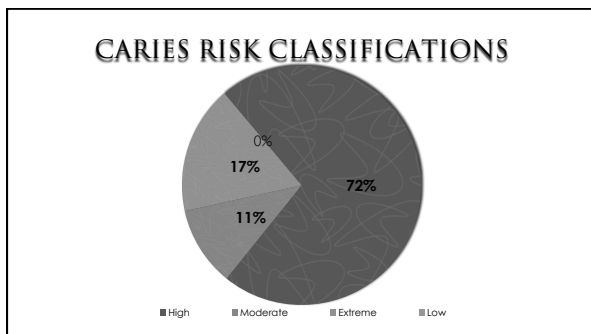
Maragliano-Muniz, PM, Roberts, DR, Chapman, RJ. Trends in Dental Hygiene: Clinical Results and Profitability of a Caries-Management Program in Private Practice. RDH Magazine, Dec. 2002.

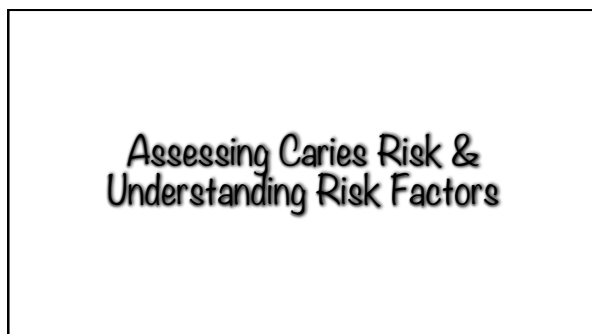
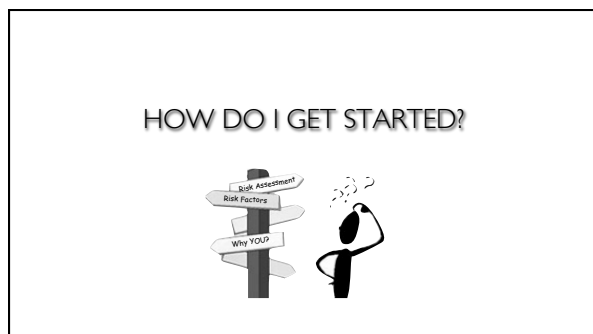
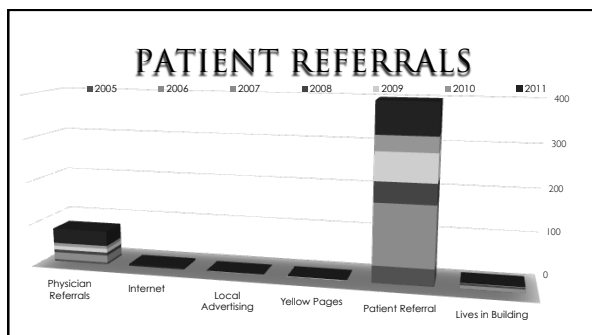
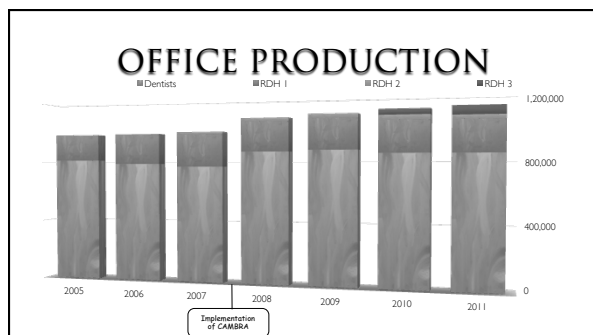
RESULTS

- n=132 (62 Male, 70 Female)
- Mean age: 63 years old
- 254 new carious lesions (49 people)
- 215 lesions reversed
- 102 accepted CAMBRA



93.87% Patients with new carious lesions accepted CAMBRA protocols





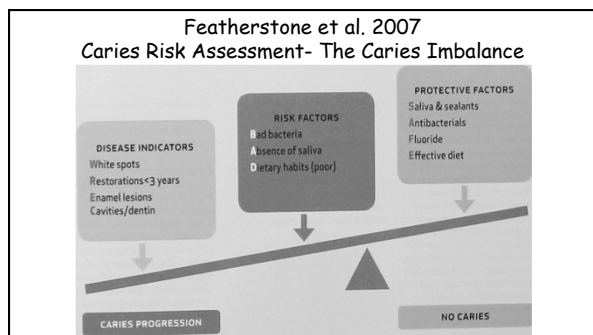
A BALANCED MOUTH IS A HEALTHY MOUTH

- Oral bacteria
- Neutral pH
- Adequate mineral exchange

AN UNBALANCED MOUTH = DISEASE

Presence of risk factors contribute to disease

- Bacterial imbalance
- Acidic oral environment
- Reduced calcium & phosphate concentrations



**Table 1
Caries Management by Risk Assessment (CAMBRA)
Clinical Guidelines for Patients 6 years and Older**

Risk Level	Frequency of Radiographs	Frequency of Caries Recall Exams	Saliva Test (Saliva Flow & Bacterial Culture)	Antibacterials	Fluoride	pH Control	Calcium Phosphate Topical Supplement	Sealants (Resin-based or Glass Ionomer)
Low Risk	Biennial Orthographic every 24-36 months	Every 12-18 months	May be done as a home assessment for new patients	Per saliva test if done	OTC fluoride toothpaste Professional fluoride varnish every 6-12 months Fluoride mouth rinse every 1-2 days (highly concentrated 0.05% F) or 2 days (0.2% F)	Not Required	Not Required	Optional for patients at risk of recurrent caries
Moderate Risk	Biennial Orthographic every 18-24 months	Every 6-12 months	May be done as a home assessment for new patients or if there is a change in risk status without new anti-infective	Per saliva test if done	OTC fluoride toothpaste Professional fluoride varnish every 6-12 months Fluoride mouth rinse every 1-2 days (highly concentrated 0.05% F) or 2 days (0.2% F)	Not Required	Optional for patients at risk of recurrent caries	Optional for patients at risk of recurrent caries
High Risk	Biennial Orthographic every 12-18 months	Every 3-6 months	Saliva flow test and bacterial culture and/or every 6 months if there is a change in risk status without new anti-infective	Chlorhexidine 0.12% rinse 1-2 times per day for 30 seconds Per saliva test if done	OTC fluoride toothpaste Professional fluoride varnish every 6-12 months Fluoride mouth rinse every 1-2 days (highly concentrated 0.05% F) or 2 days (0.2% F)	Not Required	Optional for patients at risk of recurrent caries	Optional for patients at risk of recurrent caries
Extreme Risk	Orthographic every 6-12 months	Every 3-6 months	Saliva flow test and bacterial culture and/or every 6 months if there is a change in risk status without new anti-infective	Chlorhexidine 0.12% rinse 1-2 times per day for 30 seconds Per saliva test if done	OTC fluoride toothpaste Professional fluoride varnish every 6-12 months Fluoride mouth rinse every 1-2 days (highly concentrated 0.05% F) or 2 days (0.2% F)	Not Required	Optional for patients at risk of recurrent caries	Optional for patients at risk of recurrent caries

CARIES RISK FACTORS

- Gingival Recession
- Deep Pits & Fissures
- Diet High in Sugar/Carbs/Acids
- Poor Oral Hygiene
- Growing up without access to fluoride
- 60+ years of age

Compendium, Oct 2013
These risk factors contribute to caries risk, but are not high risk factors

CARIES HIGH RISK FACTORS

Bacterial Influence

- Restorative Restorations
 - Removable Partial Dentures
 - Fixed Partial Dentures
- Xerostomia
 - Changes in consistency of Plaque
- Smoking
 - Increased plaque and calculus
- Infectious Contact
- Prosthodontics
- Orthodontics

CARIES HIGH RISK FACTORS

pH Influence

- Xerostomia
 - Longer rebound to neutral pH after eating
- Recreational Drug Use
 - Methamphetamines
 - Marijuana
- Smoking

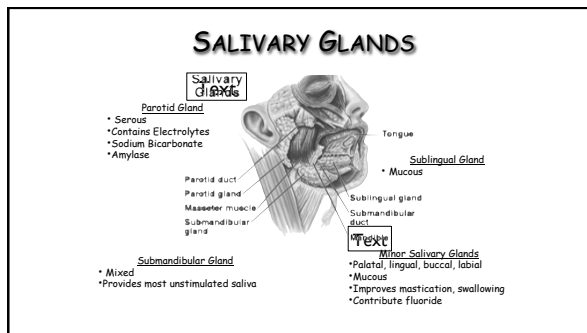
CARIES HIGH RISK FACTORS

reduced concentration of minerals

- Xerostomia
 - Lack of Calcium, Phosphate and Fluoride
- Caries within 3 years
 - High likelihood of recurrence
 - Best predictor for future disease
- Incipient Caries/ Demineralization
 - Tooth structure has loss of minerals

Saliva

how it works and why we need it



Saliva

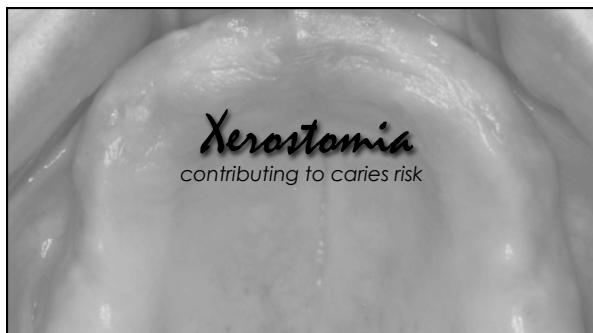
- Important for homeostasis
- 5 Protective Functions:
 - Lubrication
 - Flushing/Rinsing
 - Chemical
 - Antimicrobial
 - Maintenance of supersaturation of calcium & phosphate ions
- Varies throughout day
 - Time of day
 - Postural

- ## Components of Saliva
- Mucins/ Glycoproteins
 - Phosphoproteins
 - Immunoglobulins
 - Amylase and other enzymes

<h3>Enzymes</h3> <p>PEROXIDASE</p> <ul style="list-style-type: none"> Reacts with saliva, forms HYPOTHIOCYANATE- inhibits the ability of bacteria to fully use glucose <p>LACTOPEROXIDASE</p> <ul style="list-style-type: none"> Component of acquired pellicle Adheres to hydroxyapatite Influences qualitative and quantitative characteristics of bacteria within dental plaque 	<h3>Proteins</h3> <p>HISTADINE & STATHERIN</p> <ul style="list-style-type: none"> Control the status of Calcium & Phosphate Maintain levels of supersaturation of calcium & phosphate in relation to hydroxyapatite Prevent a rapid drop in pH, aid in quicker pH recovery Bacteriostatic
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The lack of saliva effects:

- Mastication & Deglutition
- Digestion
- Immunity
- Oral Homeostasis
- Buffering Capacity (control of oral pH)
- Oral Microflora
- Concentration of Calcium & Phosphate



XEROSTOMIA

Over 400 Medications

Antihypertensives
Antidepressants
Anxiety
Antihistamines
Decongestants
Acid Reflux
Sedatives
Pain Meds
ADHD
Chemotherapy

XEROSTOMIA

Systemic Conditions

• SYSTEMIC LUPUS	• DIABETES
• RHEUMATOID ARTHRITIS	• SCLERODERMA
• HYPERTENSION	• HIV
• ENDOCRINE DISORDERS	• SJOGREN'S SYNDROME
• BELLS PALSY	• DEHYDRATION
• SARCOIDOSIS	• ANXIETY

EVALUATING XEROSTOMIA

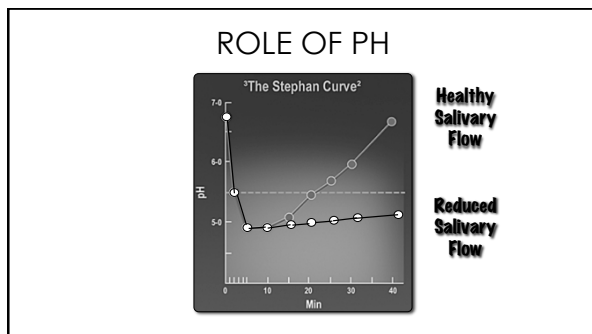
"Is your mouth dry?"
"Do you crave sugars?"

CLINICAL SIGNS OF XEROSTOMIA

Thick Plaque

Stringy Saliva

Bubbly or Frothy Saliva



SMOKING
Contributing to Caries Risk



XEROSTOMIA
Reduced Concentration of Salivary Minerals

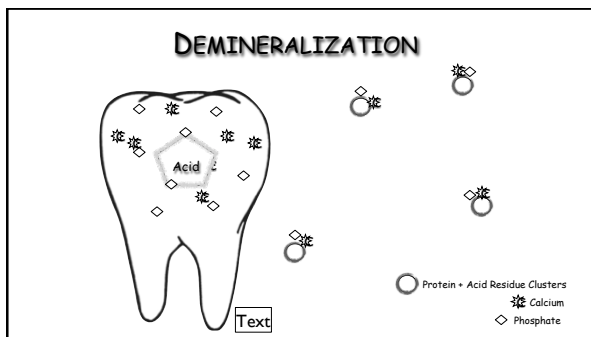
- Calcium
- Phosphate
- Fluoride
- Buffering Agents
- Immunoglobulins
- Digestive Enzymes

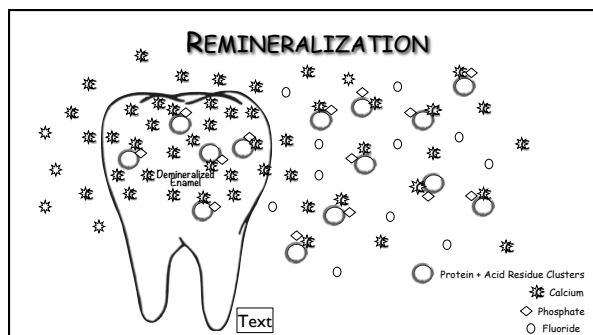
Salivary Testing

- **pH Testing**
 - Saliva Check Buffer- GC America
 - CRT Buffer- Ivoclar
- **Bacterial Testing**
 - Saliva Check Mutans- GC America
 - CRT Bacteria- Ivoclar
 - Cari-cult- Oral Biotech
 - Dentocult SM- Orion Diagnostics
- **ATPase Testing**
 - Cariscreen- Carifree

CHEMISTRY OF MINERAL UPTAKE

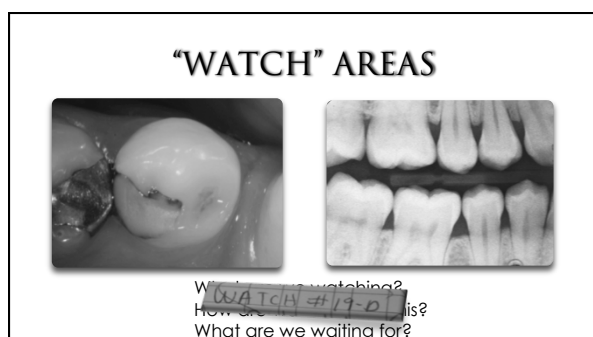
- Diffusion + ionic exchange
- Teeth made of hydroxyapatite, fluorapatite, calcium, phosphate
- Constant cycle of demin-remin
- If minerals out = minerals in: no net change to tooth
- Rate limiting factor is the **available calcium & phosphate**





CARIES WITHIN 3 YEARS & INCIPIENT CARIES

"Are we watching or waiting?"



ORTHODONTICS

FIXED ORTHODONTICS

- Difficult to clean
- Demineralization common around brackets/bands
- White spot lesion prevalence 2-97%

Chapman JA, et al. American Journal of Orthodontics and Dentofacial Orthopedics, Aug 2010

"INVISIBLE BRACES"

- Bonding of attachments
- Oral hygiene must be optimal
- Can impede natural passage of minerals

Plaque accumulates on internal surface of aligners
 Decalcification of cusp tips, incisal edges common

Moshir et al. Consequences of Poor Oral Hygiene During Clear Aligner Therapy. August 2015.

PROSTHETIC DENTISTRY

Fixed Partial Dentures

- Avg. lifespan: 7-10 years, 87% at 10 years, 66% at 15 years
Scuria, 1998
- The greater the span, the greater the risk of failure
- Dental Caries: most common mode of failure
Goodacre, 2004, Tan 2004



Extensively Restored Teeth

10+ Restored Surfaces

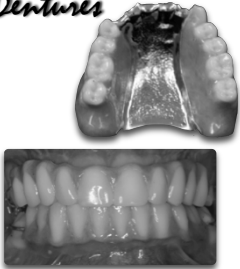
- How did we get here?
- Lifespan of restorations: 7-15 years
- Common mode of failure: secondary caries around margins



Labwork: Mr. Jungo Endo, MDT

Removable Partial Dentures

- Surgeon General: By age 50, Americans have lost an average of 12.1 teeth
- Avg. lifespan: 74% success rate at 5 years
- Dental Caries: Most common mode of failure



Kapur, 1989

INFECTIOUS CONTACT

Contributing to Caries Risk




- Significant others
- Parent to child
- Primary caregiver to child
- Child to child

RECREATIONAL DRUGS *Contributing to Caries Risk*

Methamphetamines

"Meth Mouth": severe decay, tooth loss, fracture, erosion

Causes
 drug-induced
 xerostomia
 bruxism
 poor nutrition
 poor oral hygiene



Most severe when injected

Hussen, 2012



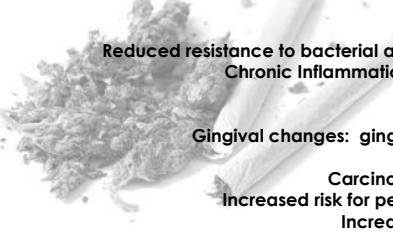
Marijuana

Active ingredient: 9-tetrahydrocannabinol (THC)

Therapeutic Uses:
 Appetite stimulant, Pain relief, Relief of glaucoma and neurological illnesses (epilepsy, migraines, bipolar disorder)

Affects cardiovascular, respiratory, immune systems

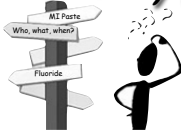
Directly affects cell activity by suppressing:
 macrophages, natural killer cells, T & B lymphocytes



Oral Side Effects:
 Reduced resistance to bacterial and viral infections
 Chronic Inflammation of oral mucosa
 Xerostomia
 Leukoedema
 Gingival changes: gingivitis, hyperplasia
 Uvulitis
 Carcinoma of the tongue
 Increased risk for periodontal disease
 Increased risk for caries

Versteeg et al. 2008

How do I implement Caries Management in my practice?



- ### KEYS FOR SUCCESSFUL IMPLEMENTATION
- ✓ Easy
 - ✓ Efficient
 - ✓ Economical
 - ✓ Effective

WHY THE HYGIENIST?

- Regularly scheduled appointments
- Direct patient contact
- 45-60 minute appointments
- Establishes rapport & trust
- Provides clinical assessments
- Provides risk management instructions

CARIES RISK ASSESSMENT

- * Health history/ medications
- * Bacterial levels
- * Salivary flow
- * Diet/ habit review
- * Condition of teeth/ restorations

Documentation

Additional Considerations

- Oral Health Related Quality of Life
- Caries Management

ORAL HEALTH RELATED QUALITY OF LIFE

COMFORT "Is everything comfortable in your mouth?"

FUNCTION "Are you chewing, speaking, swallowing properly?
Have you noticed any changes in how your mouth works?"

AESTHETICS "Are you happy with how your mouth looks?"

PERCEPTION OF HEALTH "Do you think your mouth is healthy?"

CARIES RISK CATEGORIES

Low
Moderate
High
Extreme High



www.dentalcodeology.com

CARIES RISK REDUCTION

3 Principles for Caries Risk Reduction


1. Reduce bacterial levels/ disrupt bacterial colonies
2. Neutralize pH
3. Facilitate mineral exchange

Low Risk Patient


- Absence of all high risk factors
- No to few restorations
- Shallow occlusal anatomy
- No gingival recession
- Favorable diet




Risk Management for the Low Caries Risk Patient

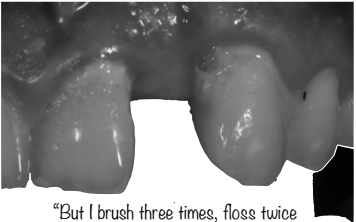


Patient handouts
Oral hygiene instructions
Diet assessment
Fluoride varnish
Xylitol
6 month recall






What is your patient doing at home?




“But I brush three times, floss twice
AND use those little brushes you gave me...”

ORAL HYGIENE INSTRUCTIONS PATIENT MOTIVATOR

Dark Purple: 48+ hours old
Pink: <48 hours old
Light Blue: Acidogenic Plaque

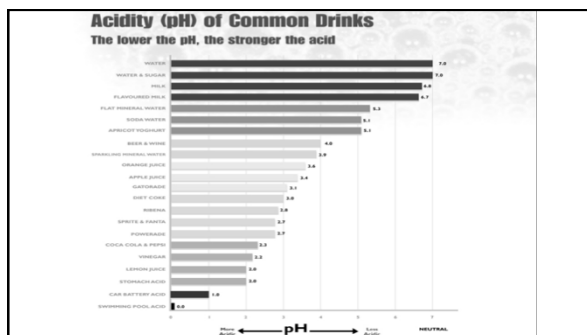




GC TRI PLAQUE ID GEL
Directions for Use

DIET REVIEW

Some caries-inducing diets are obvious to recognize, some are not so obvious



PH LEVELS OF POPULAR BRANDS OF BOTTLED WATER

Brand	pH
Propel Zero	6.5
Arrowhead	6.8
Fiji	7.3
Smart Water	7.6
Evian	7.9
Icelandic	8.4
Alkalife TEN	10.0
AquaFina	5.5
Poland Springs	7.2
Volvic	7.5
Deer Park	7.8
Real Water	8.0
Evamor	8.8
Dasani	5.6
Nestle Pure Life	7.3
V0SS	7.6
Penta	7.8
Eternal	8.1
Essenza	8.4

www.alkalifeTEN.com

100% XYLITOL

Bacteriostatic
Interferes with adherence & metabolism of *s. mutans*

Does Spry make Doggie Treats?

6-10g for highest risk
>14g Potential Side Effect GI Upset

Harmful to Pets Especially Dogs

ALTERNATIVE FORMS OF XYLITOL

Therapeutic Use:
Chew for 3-5 Minutes

Morgan, J Dent Res 2006

FLUORIDE VARNISH

WHAT IS FLUORIDE VARNISH?

- Highly concentrated form of fluoride which is applied to the tooth's surface by a dental professional as a form of topical fluoride therapy
- Due to its adherent nature, stays on the surface of the tooth for several hours
- Can be applied to the enamel, dentin or cementum
- Its been used in Western Europe, Canada and the Scandinavian countries since the 1980's for tooth decay prevention
- Many studies report it's efficacy for the prevention of tooth decay or remineralization of early carious lesions
- In the USA, it is widely used as an *anti-hypersensitivity* agent

...but, I thought fluoride varnish was used for preventing caries?

FOOD AND DRUG ASSOCIATION

Fluoride varnish is considered an FDA-approved device to occlude tubules and therefore aid in anti-hypersensitivity

For a varnish to be considered to be listed as an anti-caries material, it would have to be approved by the FDA as a drug

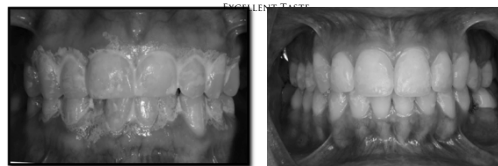
FLUORIDE VARNISH VS. TRAYS

- Delivers fluoride, calcium and phosphate
- Varnishes up to 25-75% reduction in caries risk
- Increased patient comfort & compliance
- According to the ADA Council of Scientific Affairs
- Safer to patient than gels/foams
- Acidulated phosphate fluoride treatments potentially damaging to dental restorations/sealants

There are so many varnishes on the market... How do I pick one?

PATIENT COMPLIANCE

KEYS TO IMPROVING PATIENT COMPLIANCE
 QUICK APPLICATION
 EFFECTIVE MATERIALS
 AESTHETIC OUTCOME
 EXCELLENT TASTE



FLUORIDE VARNISH + RECALDENT

FLUORIDE + CALCIUM + PHOSPHATE + CASEIN PROTEIN (ACP-CPP)




FLUORIDE VARNISH APPLICATION




Do not brush/floss for 4 hours
 Avoid hot, sticky foods
 Avoid alcohol (beverages/ rinses)
 Refrain from fluoride until the next day
 Discontinue fluoride tablets for 2-3 days

Instruct patients to expectorate-
 DO NOT SUCTION AFTER VARNISH APPLICATION


SILVER DIAMINE FLUORIDE



Zahnarzt, 1846




Piggot, 1853



Preterre, 1884

SILVER DIAMINE FLUORIDE



Silver = Antimicrobial


Fluoride = Promotes remineralization

Ammonia = Stabilizes high concentrations in solution

SDF can reach depths of 25 microns in enamel and 50-200 microns in dentin.

Horst et al., J Calif Dent Assoc, 2016

SILVER DIAMINE FLUORIDE




Indications:

- High/extreme caries risk patients
- Treatment challenged by behavioral or medical management
- Lesions that are not treated in one visit
- Difficult to treat carious lesions
- Patients with poor access to care

Horst et al., J Calif Dent Assoc, 2016

SILVER DIAMINE FLUORIDE



Elevate Oral Care

38% Silver Diamine Fluoride

FDA Approved for Dentinal Hypersensitivity by blocking dentinal tubules

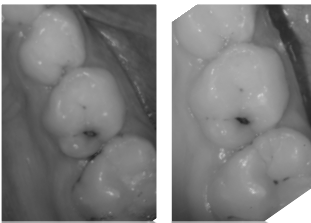
Hardens dentin

Strong bactericidal and MMP reduction= Anti-Caries!

Only contraindication = allergy to silver

<http://www.dentistryiq.com/articles/2016/07/the-dos-and-don-ts-of-silver-diamine-fluoride.html>

SILVER DIAMINE FLUORIDE



Caries Management

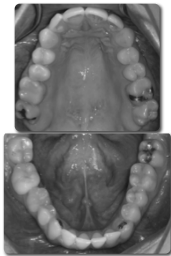
SILVER DIAMINE FLUORIDE

Protocol for Caries Management

1. Clean and dry tooth
2. Apply SDF for 1 minute (1 drop/ 1-3 teeth)
3. Rinse*
4. Apply fluoride varnish

Repeat this protocol 1x/week for 3 weeks or 3x in a month

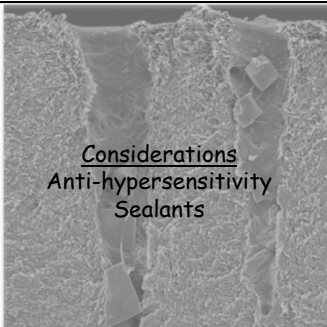
MODERATE CARIES RISK



- Good oral hygiene
- Favorable diet
- Shallow to deep occlusal anatomy
- Few restorations
- Gingival recession
- No high risk factors

Risk Reduction Moderate Risk

- Patient handouts
- Oral hygiene instructions
- Diet assessment
- Fluoride varnish
- Xylitol
- 6 month recalls



Considerations
Anti-hypersensitivity
Sealants

IN-OFFICE ANTI-HYPERSENSITIVITY



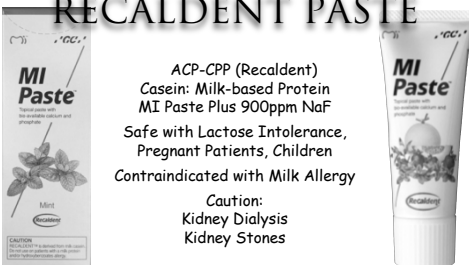
GOAL: OCCLUDE DENTINAL TUBULES

TAKE HOME ANTI-HYPERSENSITIVITY




900 ppm Fluoride No Fluoride

RECALDENT PASTE



ACP-CPP (Recaldent)
Casein: Milk-based Protein
MI Paste Plus 900ppm NaF
Safe with Lactose Intolerance, Pregnant Patients, Children
Contraindicated with Milk Allergy
Caution:
Kidney Dialysis
Kidney Stones

MILK ALLERGY



- ✓ Most common food allergy in early childhood
- ✓ 2-3% of infants and young children
- ✓ 85-90% of these children lose clinical reactivity to milk by age 3
- ✓ Prevalence in adults is 0.1-0.5%

1. <http://www.cdc.gov/od/oc/ohrt/ohrt.htm>
2. Hall A December 2003 "Prevalence of cow milk allergy in children" Am J Orthod Relat Disord 124(6): Suppl 6:55-7
3. Ormrod, R.E, Swann, L.E (2005) "Cow milk allergy: A complex disorder" Journal of the American College of Nutrition 24(6): Suppl S658-S666
4. The Dairy Council www.dairy.com

MI PASTE APPLICATION

★ Similar benefits as MI Paste Plus

★ Better compliance

★ Great flavor

★ Eliminates "extra step"

★ Neutral pH

Brush-on Paste

1100 ppm 0.24% NaF

ACP-CPP

Mild Abrasive

Potassium Nitrate

SEALANTS
for the moderate to high risk patient

RESIN VS. GLASS IONOMER SEALANTS

GLASS IONOMER SEALANTS

✓ Similar retention rates as resin-based sealants

✓ Fewer caries

✓ Better marginal integrity

✓ Improved ability to reach the depth of fissure

Wang H. Retention and effectiveness of dental sealant after 15 years. JAMA. 1991; 265(10): 14-22.
EM, Griffin S, Kahn WJ, Goch BF, Caulfield PW. The effect of dental sealants on bacterial levels in carious lesions: A review of the evidence. JADA. 2008;139(3):273-278.
F J, Clarkson J, Fontana MT, et al. The effectiveness of glass ionomer sealants in preventing dental caries: a report of the American Dental Association Council on Scientific Affairs. JADA. 2007;138(1):107-116.
Kemp J, Caulfield PW, Crab R, et al. American Dental Association Council on Scientific Affairs. JADA. 2007;138(1):107-116.
Kish-Rastegar G, van Dijken JB. A comparison of the retention of glass ionomer and resin-based sealants. J Dent. 1999;27(2):103-111.
Lee H, Wang H. 2-year clinical trial of the effectiveness of glass ionomer and resin-based sealants. J Dent. 1999;27(2):103-111.
Lee S, Barrett N, Kadir N. A comparison of the retention of glass ionomer and resin-based sealants. Community Dent Oral Epidemiol. 2003;31(4):298-301.
Lippert W, Nashed FZ, Dostal D, et al. A comparison of the retention of glass ionomer cement and a resin-based fissure sealant: a 3-year split-mouth randomized trial. Oral Health Prev Dent. 2007;9(1):20-25.
Meyer LA. Retention of a resin-based and glass ionomer sealant. J Dent. 1999;27(2):103-111.
N, Soares DM, Siqueira S. Comparison of glass ionomer and resin-based fissure sealants: a 2-year clinical trial. Community Dent Oral Epidemiol. 1994;22(1):21-24.
Pinto A. In vitro evaluation of microleakage in contaminated fissures sealed with GC Fuji Triage glass ionomer cement. J Esth Dent. 2016;28(1):25-32.
Riddell J, Mitchell L, Gibson BE. Effectiveness of a glass ionomer cement and a resin-based sealant in newly erupted permanent first molars. J Dent Child. 2009;76(1):34-40.
Shah B, Weller J. Clinical and SEM assessment of AET high-strength glass ionomer sealants after 5-13 years in 4 teeth. J Dent. 2010;38(1):59-64.
Shah B, Franchon JE, van't Hof-Grootenboer EA, Tulkoff D, van Palenstein Helderman WH. Caries-preventive effect of a one-time application of composite resin and glass ionomer sealants after 5 years. Caries Res. 2006;40(1):52-59.
Shah B, Franchon JE, van't Hof-Grootenboer EA, Tulkoff D, van Palenstein Helderman WH. Caries-preventive effect of resin-based and glass ionomer sealants over time: a systematic review. Community Dent Oral Epidemiol. 2006;34(1):10-19.

GLASS IONOMER SEALANTS


- Works in a moist field
- No isolation required
- No bonding agent required
- Self bonding (chemical bond) with its high fluoride release
- Safe to seal over immature enamel or non-cavitated lesions

GLASS IONOMER SEALANTS

- Glass ionomer sealant allows Fluoride, Calcium and Phosphate to pass through the sealant to help mature the newly erupted tooth
- Resin sealants create a barrier and Fluoride, Calcium and Phosphate cannot penetrate through the sealant
- Contains 1400ppm Fluoride- releases over 400 days
- "rechargeable" with fluoride tx
- 1 capsule seals one arch

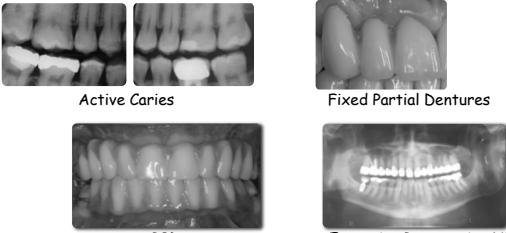
HIGH CARIES RISK

- Incipient caries
- Demineralization
- Xerostomia
- 60+ years old
- Orthodontics
- Recreational drug use



- Smoking
- Infectious contact

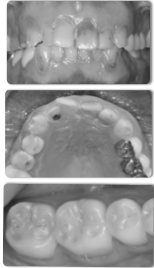
WHO ELSE IS AT HIGH RISK?



Active Caries Fixed Partial Dentures

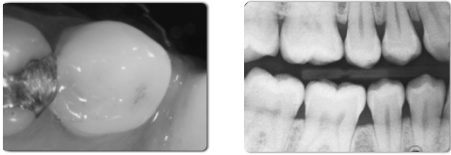
RPD Extensive Restorative History

EXTREME HIGH CARIES RISK



- Severe xerostomia
Multiple medications
Systemic conditions
- Multiple high risk factors/acidic oral environment
- Planning/undergoing chemotherapy or radiation
- Special needs patients
- Uncontrolled GI disorders
Acid reflux, H. pylori, rumination
- High caries incidence
Unknown cause
Recreational drug use

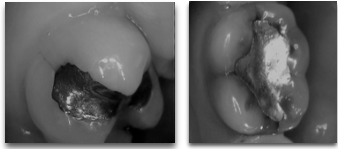
“WATCH” AREAS



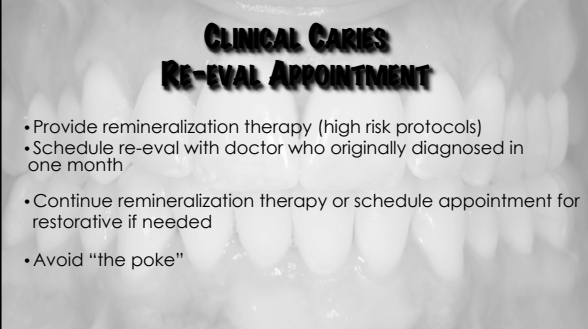
We no longer watch caries get larger, we can now predictably reverse or stop the process!

Intra-oral Camera

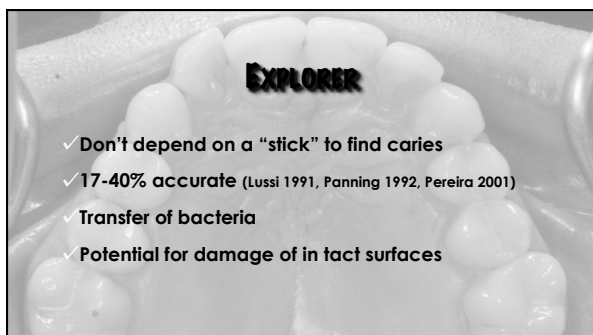
- ★ Documentation
- ★ Patient education
- ★ Treatment acceptance
- ★ Informed consent
- ★ Before & Afters
- ★ All teeth to be “monitored”



CLINICAL CARIES RE-EVAL APPOINTMENT



- Provide remineralization therapy (high risk protocols)
- Schedule re-eval with doctor who originally diagnosed in one month
- Continue remineralization therapy or schedule appointment for restorative if needed
- Avoid “the poke”



- ✓ Don't depend on a "stick" to find caries
- ✓ 17-40% accurate (Lussi 1991, Panning 1992, Pereira 2001)
- Transfer of bacteria
- ✓ Potential for damage of intact surfaces

ICDAS code	0	1	2	3	4	5	6	
Definition	Sound tooth surface (no caries change after air drying or use of hypodermic weak etchant and other noncarious phenomena)	First visual change is enamel, seen only when etchant is used or color change that is limited to the surface of the pit and fissure area	Distinct visual change is enamel, seen when weak etchant or underlying dentin is exposed. Discoloration of surface enamel underlying PFF fissure	Localized enamel breakdown with no visible dentin or underlying dentin. Discoloration of surface enamel underlying PFF fissure	Underlying dentin shadow from dentin caries extending less than half of a tooth surface	Detect cavity with visible dentin. Dark coloration extending less than half of a tooth surface	Detect cavity with visible dentin. Dark coloration extending less than half of a tooth surface	Detect cavity with visible dentin. Dark coloration extending less than half of a tooth surface
Lesion depth		Lesion depth in PFF less than 1/2 mm, enamel exposed with only 1/2 mm of dentin	Lesion depth in PFF less than 1/2 mm, enamel exposed with only 1/2 mm of dentin	Lesion depth in PFF with 1/2 mm of dentin	Lesion depth in PFF with 1/2 mm of dentin	Lesion depth in PFF with 1/2 mm of dentin	Lesion depth in PFF with 1/2 mm of dentin	
Substratum recommendation for low risk	Substratum optional (DAG/ICDAS may be helpful)	Substratum optional (DAG/ICDAS may be helpful)	Substratum optional (DAG/ICDAS may be helpful)	Substratum optional (DAG/ICDAS may be helpful)	Substratum optional (DAG/ICDAS may be helpful)	Substratum optional (DAG/ICDAS may be helpful)	Substratum optional (DAG/ICDAS may be helpful)	
Substratum recommendation for high risk	Substratum recommended (DAG/ICDAS may be helpful)	Substratum recommended (DAG/ICDAS may be helpful)	Substratum recommended (DAG/ICDAS may be helpful)	Substratum recommended (DAG/ICDAS may be helpful)	Substratum recommended (DAG/ICDAS may be helpful)	Substratum recommended (DAG/ICDAS may be helpful)	Substratum recommended (DAG/ICDAS may be helpful)	
Substratum recommendation for severe risk	Substratum recommended (DAG/ICDAS may be helpful)	Substratum recommended (DAG/ICDAS may be helpful)	Substratum recommended (DAG/ICDAS may be helpful)	Substratum recommended (DAG/ICDAS may be helpful)	Substratum recommended (DAG/ICDAS may be helpful)	Substratum recommended (DAG/ICDAS may be helpful)	Substratum recommended (DAG/ICDAS may be helpful)	

CARIES DETECTION TECHNOLOGY

- Transillumination
- CarVu (Dexis)
- Laser Caries Detection Systems
 - DIAGNOdent (KaVo USA), SoproCARE/ SoproLIFE (Acteon), Spectra (Air Tech), Kodak, Midwest Caries D
- Crystallinity Measurements
 - The Canary System (Quantum Dental Technologies)
- Optical Coherence Tomography
 - Lanitis Laser

Caries Detection Technology

The Canary System
Quantum Dental Technology

Yes, but does it work?

43 year old patient
Initial visit: 45
Follow up: 15

POWERED BY THE DENTISTRY NETWORK

Dentistry IQ

Home » Products » Implementing CAMBRA in the private practice: A clinical report

Implementing CAMBRA in the private practice: A clinical report

May 22, 2015

By Pamela Mangano-Muniz, DMD, and Diane Prividy, RDH

<http://www.dentistryiq.com/articles/2015/05/implementing-cambra-in-the-private-practice-a-clinical-report.html>

Tooth Number (UNS)	Surface	May 11, 2015
18	Buccal	

Recommendations


- 0-20: Healthy/Sound Tooth Structure
- 21-70: Early Decay
- 71-100: Advanced Decay

RADIOGRAPHIC CARIES RE-EVAL APPOINTMENT

- Provide remineralization therapy
- Bitewing x-ray 3-6 months
- Evaluate for reversal, stability or progression
- Evaluated by doctor who originally diagnosed

Transillumination

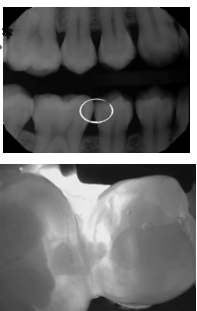
- different perspective of the tooth
- No radiation
- Easy to read images
- Pt education
- Diagnosis
- Monitoring
- Stored with radiographs/
IO photos within DEXIS



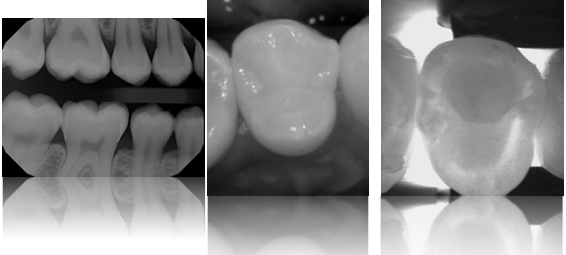
Benefits of Transillumination

- Identify interproximal caries from the B-L, M-D dimensions
- Occlusal caries
- Secondary caries

*Proximal dentin lesions represented in CarVu images correlate to the actual condition of the tooth with 99% accuracy. Study data on file. CarVu is a diagnostic aid for the detection of open or incipient carious lesions above the gingiva and for monitoring the progress of such lesions. Indications for use for CarVu are detection of smooth surface caries, occlusal caries, inter proximal caries, secondary caries and cracks.




Caries



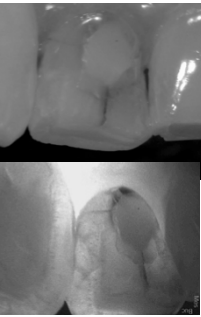
Caries

- Identify interproximal caries from the B-L, M-D dimensions
- Occlusal caries
- Secondary caries

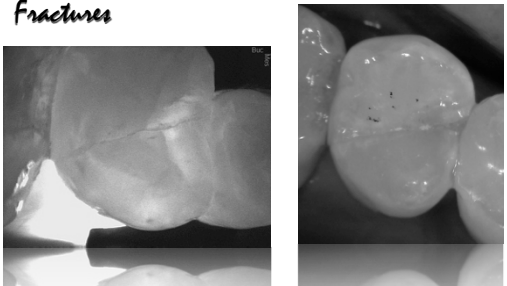


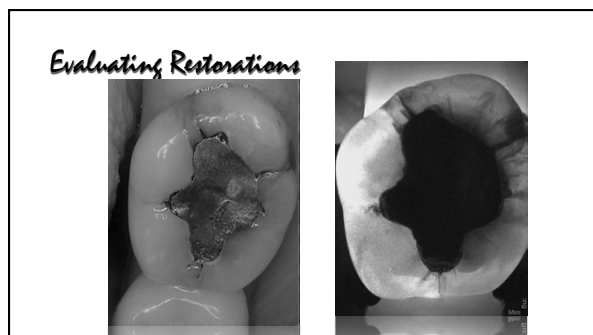
Caries

- Identify interproximal caries from the B-L, M-D dimensions
- Occlusal caries
- Secondary caries



Fractures





**RISK REDUCTION
HIGH & EXTREME RISK**

- Patient handouts
- Oral hygiene instructions
- Diet assessment
- MI Paste Plus
- Xylitol (6-10g/day)
- 3-4 month recall
- Fluoride varnish -OR-
- Chlorhexidine Varnish

**Fluoride +
Recaldent Paste +
Antimicrobials? +
Raise pH**

Chlorhexidine

CHLORHEXIDINE GLUCONATE
ORAL RINSE USP, 0.12%
170ml (5.7 fl. oz.)
NET WT 5.7 FL. OZ.
NET WT 170 ml

- Non-specific Antimicrobial
- Literature supports lack of efficacy
- Interaction with Fluoride
- Patient Compliance Issues



Cervitec® Plus
Free Stand Single Dose Assortment
Cool storage / Kuhl lagern 2-8°C / 36-46°F

Indications

- Sealing of exposed root surfaces
- Dentinal hypersensitivity
- Reduction of bacterial activity on tooth surfaces

EN Protective vernis
DE Chlorhexidin
FR Vernis protecteur
IT Vernice protettiva
NL Beschermingslak
PT Verniz protetor
TR Klorheksidin koruyucu vernik
RU Защитное покрытие с хлоргексидином
PL Lakier ochronny z chlorheksydyną

ivoclar vivadent







Oral Rinse

- Activated chlorine dioxide
- Antibacterial, anti fungal
- Halitosis
- Every day use
- Post-op implants

OraCare
PART ONE
PART TWO ACTIVATOR



The Oral Ecosystem

400-700 microorganisms in the oral cavity
 Many are considered "good bacteria".
 Many have not been named or classified and their role in health or disease has yet to be determined.

Consider probiotics!

evora plus
 The First Probiotic Mint for Complete Oral Care

ALL-DAY PROBIOTIC
 • SUPPORTS GUM AND TOOTH HEALTH
 • FRESHENS BREATH
 • WHITENS TEETH

BAKING SODA TOOTHBRUSHING RAISES PH

Baking soda has an abrasion index of 7

The Relative Dentin Abrasion (RDA) Index adopted by the American Dental Association

RDA: ability to remove stain, NOT a measure of safety

No additional benefit over 250

<250: Safe for a lifetime of use

<http://www.ada.org/en/member-center/oral-health-topics/toothpastes>

When does abrasivity matter?

- Cosmetic Dentistry
- Gold
- Root Surfaces
- Composite Restorations
- Implants

Proxyl[®]
 Prophy Paste

CTX2 SPRAY

pH 9

Glycerine
 Xylitol
 Natural Flavoring

Carifree
CTx2
 Spray MINT

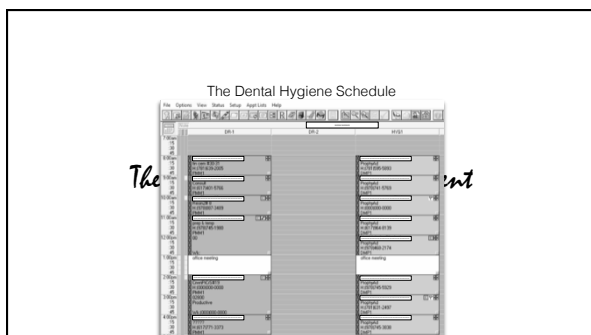
- pH Neutralization
- Xylitol
- Contains Fluoride, AFl, O2 (12%) & Xylitol
- www.carifree.com

POTENTIAL PROFITS

5 days a week/ 48 weeks a year

Before Implementation	After Implementation
RDH: 8 Patients/day	RDH: 8 Patients/day
Almost a 30% Increase!	1 Extremely High Risk
\$140 x 8 = \$1,120/ day	8 Pro+8 Flz + 7 MI Paste/ day
= \$5,600/week	\$1120 + \$280 + \$175/day
= \$268,800*/year	= \$1575/day
	= \$7875/week
	= \$378,000*/year

* Does not include radiographs, sealants, white spot removal, tooth whitening



The hygiene visit with Caries Management

1. Seat your patient
 - OHRQOL
 - Med hx review
2. Clinical and Risk Assessment
 - Clinical findings
 - Risk factors
 - Diet and habit review
3. Risk Management: *"We have a new approach to prevent disease in your mouth so that we can treat you more conservatively."*
4. Patient Education
 - Handouts
 - OHI
5. Periodic Exam with Dentist
 - Confirm recommendations
6. Fluoride Varnish Application
7. Recall based on risk

IMMEDIATE REWARDS

- Enhanced production within your hygiene department
- Improved communication
 - Patients
 - Office staff
- Practice at the highest standard of care
- Legal protection

LONG-TERM REWARDS

- Improved patient retention & new patient referrals
- Increased production for elective dental procedures
- Improved experience
 - Patients
 - Office

MAINTENANCE

What are the next steps?

HERE'S WHAT THEY SAY...

If a patient is caries free for 3 years, the practitioner may consider classifying the patient in a lower caries risk category.

J California Dental Assoc. Oct/Nov 2007

CARIES

Caries is the most prevalent disease in the world
 Surgeon General: dental caries is the single most common chronic disease of childhood

Starting at age 60, tooth decay rates are equal to or greater than adolescent decay rates who grew up with no fluoride in the water
 91% of adults are affected by caries in their lifetime

World Health Organization 2010
 Health Policy 2010, Surgeon General Report
 Pittenger R. www.aad.org/advocacy, J Am Dent Assoc 2007; 138(7): 95-101
 Bahran-Aghaie, ED, Baker LC, Corbo MT, et al. Centers for Disease Control and Prevention. Surveillance for dental caries, dental sealants, tooth retention, edentulism and orofacial clefts - United States, 1988-94 and 1999-2002. MMWR Surveill Summ 2005;54(2): 1-43

"If the disease is controlled with medicaments and risk management AND the risk factors are still present, the patient will be treated at the existing risk category for life. I will consider reducing the caries risk classification only in cases where the disease is controlled AND the risk factors are eliminated."

- Pamela Maragliano-Muniz

Summary

- * Dental hygienists are invaluable to a thriving dental practice
- * Get involved in implementing new programs, technology
- * Strategic scheduling for maximum productivity

THANK YOU

for your kind attention



THANK YOU

Salem Dental Arts

Inside
Dental Hygiene

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Acknowledgements: GC America