Integrating a New Approach…A Periodontal/Restorative Paradigm For a Recession Pr oof Office

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Dental Team Concepts
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Today…it's about my team opening our doors of the office to all of you

- It all begins in the morning huddle
- How does your team reflect your philosophy in dentistry?
- Today….it's about bringing a philosophy and a practical approach to all of you
- It's about maximizing your hygiene/team dynamics

The Essential Reason to the HUDDLE A very busy 15 minutes

- Every Day has to be planned
- We review
  - Where patients are in various phases of hygiene care
  - Where patients are in their restorative care
  - Where patients are in treatment in combination cases
  - Who is do for charting, Velscope, periodontal and periodic exams, radiographs and more
  - Which patients on the doctors schedule are due for hygiene!
  - Who is do lab deliveries
  - Updates of the DAY

Seriously…2 items about saving money we have implemented

#1 Don't be lazy

Credit Card Processing Facts

Did you know that….

- Most all Merchant Statements Contain Hidden Extra Processing Fees
- Most all Merchants are Not Receiving the Best Rates on Over 200 Types of Credit Cards
- 98% of all BPN Merchant Statement Analysis Results in Saving for our Clients.

Sample Summary of Cost Savings

Account	Annual Savings	3 Year Savings
Auto Dealer	$8,926.94	$26,780.82
Dental Office	$6,341.26	$19,023.78
Restaurant	$2,066.93	$6,200.79

We are saving 500-600$ in processing fees per month!

BENCHMARK PAYMENT NETWORKS

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About Benchmark Payment Networks

Benchmark Payment Networks, Inc. is a full service electronic payments processor. We have developed a thorough understanding of the Healthcare industry and the various needs of dental practices. In order to understand how our products work efficiently within a dental practice, we have made field trips to individual locations, presentations at large affiliate Associations and analyzed general and specific industry data.

Benchmark Payment Networks has a specifically trained group of customer service representatives that understand the needs of the Medical Practice. This includes 24 hour customer support, and recurring training and support on all of the Benchmark products that are utilized by a given practice. Benchmark Payment Networks is proud to be working with Medical Practices around the country. Our goal is to help each individual practice grow their business and make it as efficient as possible. We thank you for this exciting opportunity, and we look forward to helping your medical practice grow and prosper.

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Guarantee Savings

The points below illustrate some of the features and programs we offer to all medical practices in order to maximize the efficiency of electronic payment acceptance and keep costs down.

- Free Customized Analysis and Recommendation
- Unique specialized equipment
- Personalized Customer Support and Training
- Customized Reporting and Online Reporting
- Security/Fraud Prevention-Ongoing Education
- Seamless Integration/No Downtime
- Eliminate set up fees, termination fees, annual fees and offer full transparency to your pricing

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Literally…fax your merchant statement…that's it and save your hard earned dollars….

Here's How Easy it is to Reduce Your Processing Fees

Qualify	Analysis Summary	BPN Customer
No cost. No Obligation	**Confidential Analysis Report**	**Start Saving Today**
Provide a copy of your merchant statement to your account executive or fax your merchant statement to (631) 532-1869	Within 5 business days your report will be processed and you will receive a summary of cost savings.	Plus, they will train your staff in the most recent processing guidelines so that you qualify for even greater savings.

BENCHMARK PAYMENT NETWORKS

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BENCHMARK PAYMENT NETWORKS
SETTING THE STANDARD BY WHICH OTHERS ARE MEASURED

Corporate Office:
3 Harbor Road
Cold Spring Harbor NY 11724

Ron Reiter
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O 631-659-3578
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C 516-972-0920
rreiter@benchmarkpaynet.com
www. Benchmarkpaymentnetworks.com

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#2 Changing how you think! Stop giving away 8-10% of your casework…Do Banks?

3 years ago, I had 3 kids in braces…the orthodontist financed my kids over 3 years, why not in dentistry with interest growth to US!

Helping More Patients Afford the Care They Need

comprehensivefinance

What is Comprehensive Finance?

- Low-risk, self-directed financing plan administered on your behalf as outside lender to the patient
- Simple web-system for extending credit, billing, collecting and reporting
- You control the payment terms & set interest rates
- Complete loan management provided – day to day collections via ACH & soft/hard collections
- On-going team training and coaching

You know this is True!

Traditional 3rd party finance only approving approx.
50% of patients

Many patients approved do not receive full funding

A large % of patients who are denied or partially approved funding are still very "payment-worthy"

"Approximately 48% of the population has a credit score under 700." – Experian Dec. 2011

2% default rate last year!

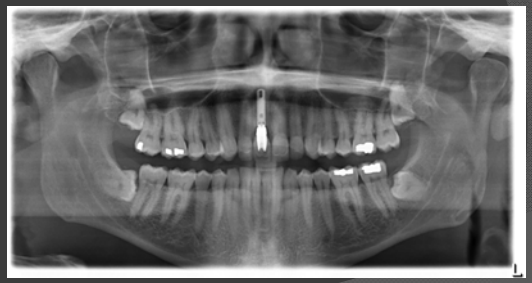
- **info@comprehensivefinance.com**
- **866-964-4727**
- **www.comprehensivefinance.com**
- **Seriously, would you rather give away every 4th case or be smart!**

BEYOND

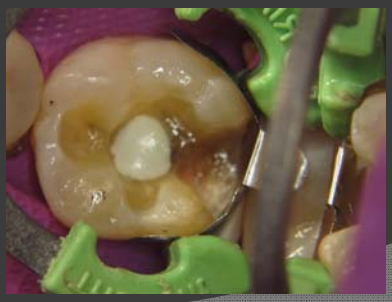
30's,40's,50,s **60's-70's**

80-90's

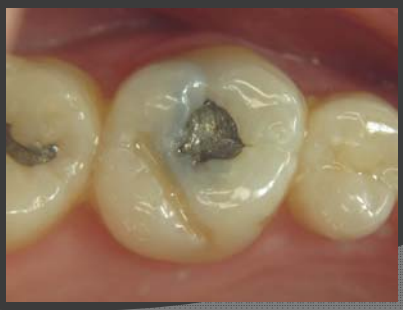
39 YEAR OLD new patient with a beautiful smile of Veneers and an implant but WITH 9'S ON THE DISTAL OF 31 AND A POSITIVE VELSCOPE LESION...WATCHING...WAITING?



On a 44 year old new patient told he needed a crown on this tooth…do I want to crown?

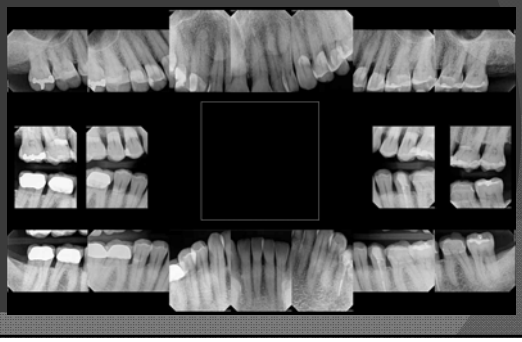


A 46 YEAR OLD MOM..WATCHING…WAITING?

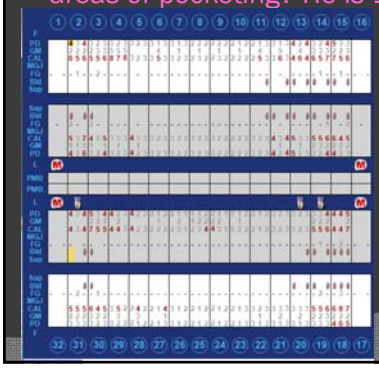


How does waiting help?

Tom…68…retiring, how do you maintain is perio and restorative concerns?

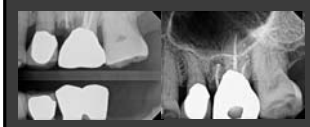


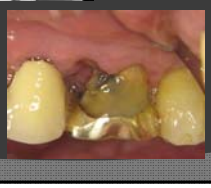
He's had numerous surgeries and yet still areas of pocketing? He is 100% Compliant



What does your team offer to maintain him long term? What sets you apart?

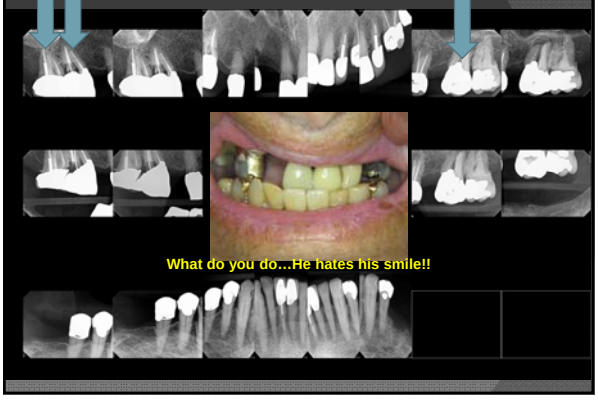
75 YEAR OLD in good health….HOW LONG DOES A ROOT AMP LAST?





- Caries Distal 13
- Do You Repair 13?
- New Crown 13?
- Bridge?.
- Implant?
- Curve of spee
- What if was 85?

Oh yes beyond 100!!

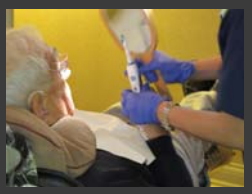


What do you do…He hates his smile!!

How do we manage these patients?

- Routinely, poor hygiene
- Food traps, plaque issues, poor margins in many restorations
- Periodontal issues, restorative issues that can affect their daily lives
- Where do you start?

Prevention at 102!!! 3 hygiene appointments and introducing him to his new BF

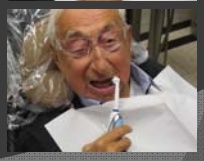



Questions to All of YOU?

- Does Prevention only include young patients?
- Ask yourself then how do we approach prevention through different age groups?
- How do you communicate these issues with your patients?
- What issues do these include?
- So as we explore today, we will tackle: Diagnostics, Communication, Treatments and so much more

"Doctor Joe and his new friend"

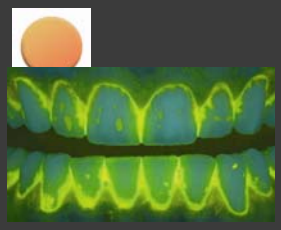
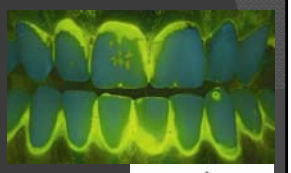




I need a Regime that is not complicated to start that includes…

- Anti caries
- Anti plaque with long substantivity
- Anti tartar
- Anti sensitivity if an issue

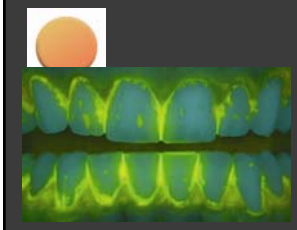
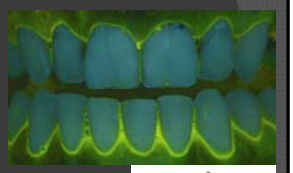
Morning Prebrushing - Baseline Day 1

Standard manual brushing

PRO-HEALTH SYSTEM

Morning Postbrushing - Day 1

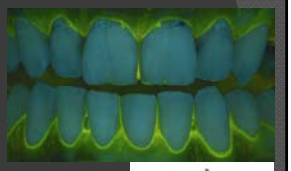



Standard manual brushing

PRO-HEALTH SYSTEM

Night Prebrushing - Day 1
(Daytime Plaque Accumulation)



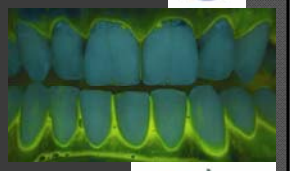


Standard manual brushing

PRO-HEALTH SYSTEM

Morning Prebrushing – Day 2
(Overnight Plaque Accumulation)

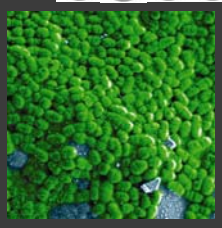
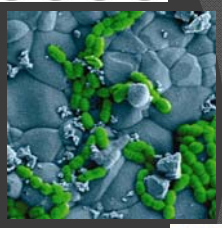




Standard manual brushing

PRO-HEALTH SYSTEM

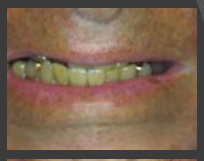
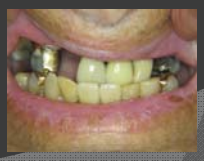
24-Hour Anti-Microbial Effects of PRO-HEALTH Paste and Rinse

Sodium Fluoride

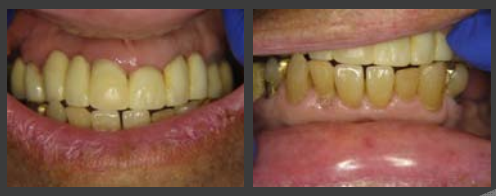
Stannous Fluoride + Cetylpridinium Chloride

Even at 102!

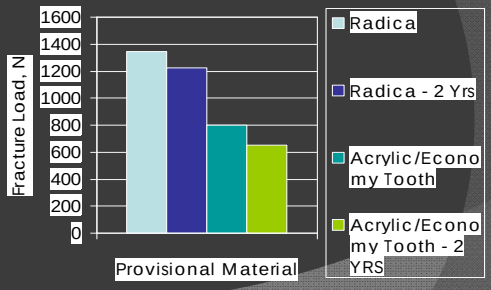
9 months later…let's take a peak

Radica

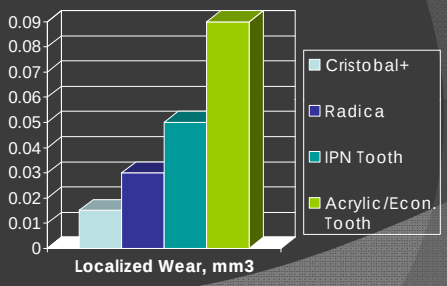


The Regimen

Radica durability…seeking 5 year approval



Radica wear resistance



E Prognosis.com

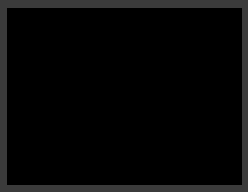
MEN…

IF you are in the top 25Th % healthwise at 70 you have a predicted life span of 18 years but if you're in the bottom 25th% only 6.7 years
At 80, if you are in the top 25th% you have a predicted lifespan of 10.8 years versus 1.5!

Women

21.3 years for the top 25th% at 70 and 9.5 for bottom 25%
13 years for the top 25th% at 80 and 4.6 for the bottom 25%

The Reality of Bridges



- 22% of complications for FPD are due to decay (crown margins next to pontics are at a higher risk for decay and endodontic therapy).
- Fracture of abutment teeth after endodontic therapy is 4 times higher than that of a single crown.

The Reality of Bridges

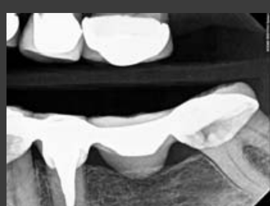
- Abutment teeth for FPD have a 15% risk of requiring endodontic therapy compared to 6% of non-abutment teeth (which the endodontic therapy is 90% successful at the 8 year mark).
- 8 to 18% of abutment teeth holding FPD are lost within 10 years.
- Long Term bone loss under pontics

The Reality of Bridges

- Abutment teeth of FPD may be lost at rates up to 30% for the 8 to 14 year period. This is why you have to think about the age of the patient and long term results and my philosophy of getting our patients teeth to their 85th birthday.
- This is disturbing since 80% of abutment teeth have no previous decay or are minimally restored prior to fabrication of the FPD.

Case in Point….

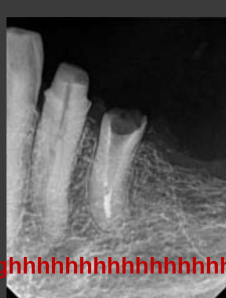
A few weeks ago…my new patient

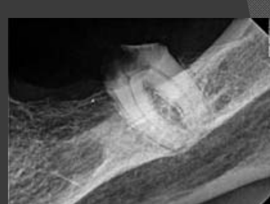


- The abutment is loose on 18
- The bridge is 14 years old
- Chewing sensitivity
- Cold sensitive
- Peri-apical is negative
- The patient is 54

So, I book an hour and a half to take off the loose bridge, do some buildups and temporize and told him we would scan him in the future to see if 19 had width for an implant…

So…I take off the of the bridge

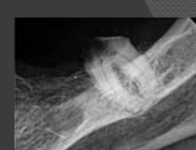


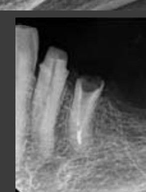


Ughhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhhh

Now What?

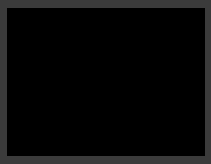
- He's 54…
- Root Canal 18…nothing really left of the tooth!
- Extraction…..
- What are his options?
- Is their enough width in the area of 19 for an implant? I don't know!
- #20…coronal micro leakage and far more issues



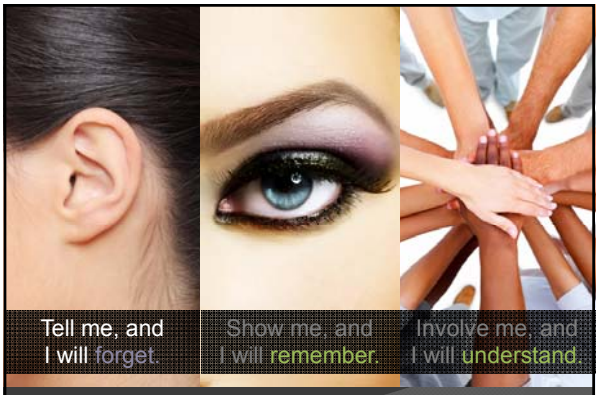


Imagine YOU in the chair…
I sit him up and it's all about visual learning and communication

It's all about Visual Learning



Communication with videos, pictures and notes



A study of the United States Department of Labor showed that 83% of all human learning is done visually whereas only 11% is done through hearing.

It was also found that people retain over 6 times more information when it is presented visually compared to just verbally.

A study conducted by the Wharton School of Business on the subject of Sales Presentation revealed that audiences found visual presentations about

70% more persuasive.

Treatment Plan Acceptance

It has been suggested that the majority of all plans that go untreated are a direct result of the patient's lack of understanding.

Educated Patients Choose Up In Their Dental Care!

So. We ended up…

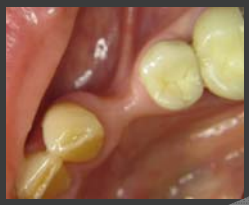
- Cementing the original post with a resin cement
- Extracted 18 and grafted with an allograft
- Made two new temps on the bicuspids
- Will ultimately set him up for a SCAN
- Guru communication to show multiple paths
- At his post op, we will discuss further and treatment plan.

Why Graft? 80,000,000 teeth are extracted annually! (ADA)

- In the first year the alveolar bone resorbs 25% in width with maximum amounts of 60%
- In mm, it has been shown to have have bucco linugal resorption up to 5-7mm and 2-4 mm vertically in the first 12 months, with much of the resorption in the first 4 months
- Horizontal bone loss is worse when multiple adjacent teeth are extracted
- In the next 3 years there will be up to an additional 8% of additional resorption.
- Beyond that time frame, a pontic site will resorb but still at a slower rate. .5-1% per year there after
- Loss of height can be as great as 40%
- Have you not seen your pontic sites resorb after a few years, why NOT graft!

Why treat a socket?

- Prevent bone loss after extraction
- Prevent soft tissue collapse in the extraction site



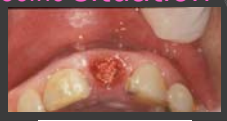
The Objective: Preservation of Jawbone

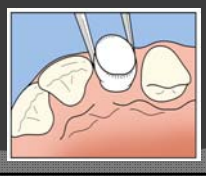
If You Don't!

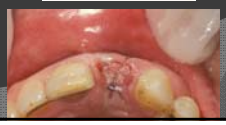
The Decision Tree

- Are you placing an implant in the near or short term?
- If near term, MCP Allograft, or Puros is preferential as turn around time is around 4-8 months (mineralized cancellous)
- If unclear over the next year but NOT near term of four months, use MCP Cortical/Cancellous or Bovine material such as Osteograf N from other manufacturers
- If you never are going to place an implant, utilize a NON-resorbing material like Osteograf D

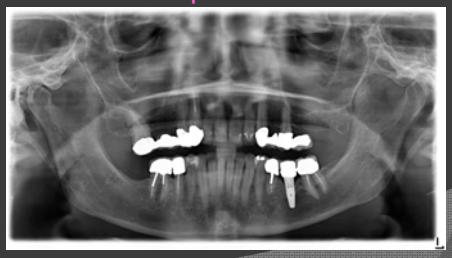
Its as easy as this…just know what you need for the specific situation





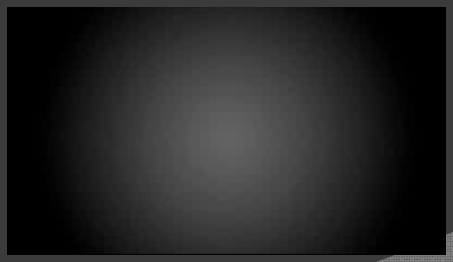


So given this new patient is 54 and wants to replace her old ugly bridges… Do you treatment plan bridges or implants?



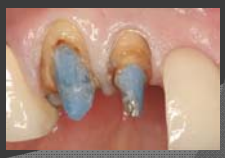
When you cut off those bridges…my favorite hand-piece…..

Drilling off 6 crowns….the new "WOW " in my hands



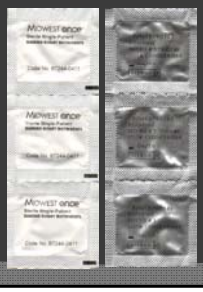
Single use bur, and together an effortless procedure

Crowns and Bridges…Like Butter!



Dentsply's new ONCE Burs
Midwest's Multi Prep Carbide 1558

PACKAGING & LABELING



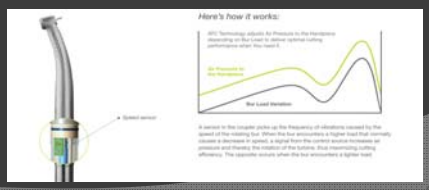
25 ct. BOX - Contains perforated roll of 25 diamonds

Why is the ATC different?

HOW SSI WORKS

79

- **Speed-Sensing Intelligence (SSI)**
  - Sensor monitors bur speed according frequency and adjusts speed automatically
  - Increases air pressure to maintains speed and torque while under load



I Show What I use everyday
Equipping 3 more rooms

Dr Lou:

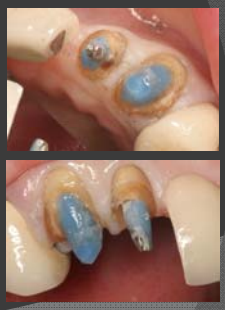
Great seeing you yesterday. I wanted to follow up on the integrated Cavitron's and their installation? Have they these been sent to you yet? The reason I ask is that we have one of our Service Techs from York flying in for training and an ATC installation on 6-1-12. We like to load their schedule when in town and wanted to see if you would want them installed either the day before or after the training. Also, have you made any decisions on ATC? He can install these at the same time as well.

Let me know and we'll help coordinate.

Thanks,

Just the beginning of long term treatment…but it makes it so much easier…

- Used One Bur to remove the porcelain
- Two burs to cut threw the metal
- A labor/touch technique so much easier



What if you need to remove a zirconia crown or do endo through one?

Great White Z Diamonds from SS White

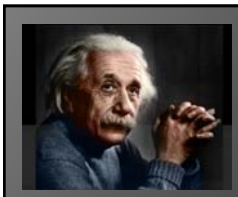
These are actually fine grit diamonds in 3 layers of resins

From philosophy to Mantra for Growth…

The essence of Success Building a successful Hygiene/Team

My history in Periodontal therapy and the hygienist

- **Mid 1990's**
  - Half mouth scaling and planing… 2 visits
  - Actisite
  - Systemic Antibiotics
- **Late 1990's**
  - Half mouth scaling and planing… 2 visits
  - Atridox
  - Systemic Antibiotics
- **2000-2004**
  - Sequential therapy
  - Arestin
  - Enzyme Therapy
  - Systemic Antibiotic
  - DNA Testing
  - Loupes with hygienists
- **2004 to the present**
  - Sequential therapy
  - laser therapy
  - Arestin
  - Enzyme therapy
  - Occasional Systemic Antibiotics
  - Velscope
  - Diagnodent
  - Transillumination
  - Loupes and Lights with hygienists
  - Additional tests and screenings
  - Guru



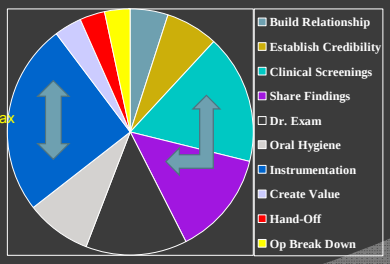
Albert Einstein's Definition of Insanity

Doing the same thing over and over again AND expecting different results

CHANGE IS INEVITABLE, SUFFERING IS OPTIONAL

The 60 minute Value Appointment

30 minutes max



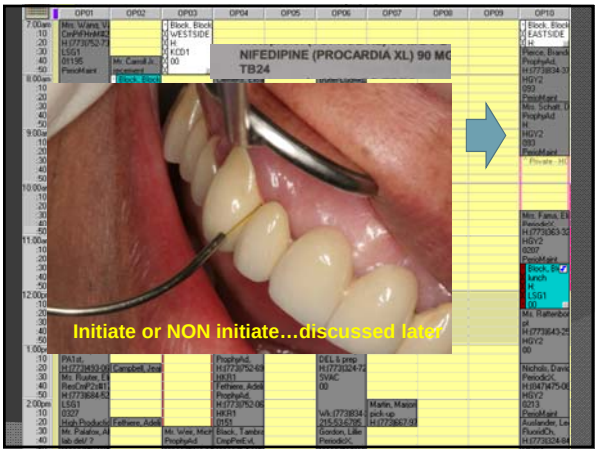
The key is allowing the hygienist enough time to be a total oral care provider

It's all about giving the hygienist time for…. learning about the patient so you know how to talk to them and know what they want.

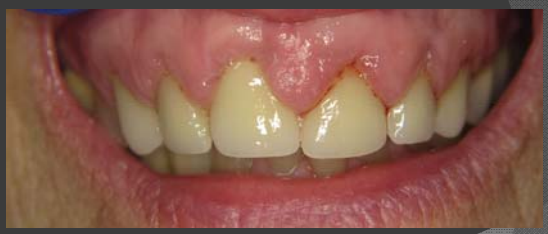
The key is having the patient desire oral health and that can be for systemic health, esthetics, function, etc.

Clinical Screening, Review of Medical and Dental History, and even Oral Hygiene Instructions are all done BEFORE ANY TREATMENT

Medications, Xerostomia, Dexterity, All of these can affect how we teach PREVENTION to our Aging patients along with paradigm shifts in Treatment Planning….



2 Weeks later, another patient…same issue

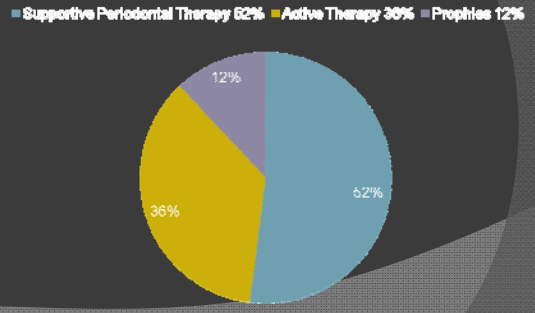


Building Relationships to create "Value"

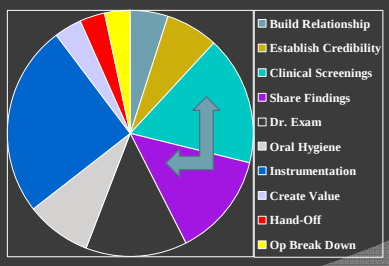
- Caring for the person…not just their teeth
- Understanding their individuality
- Understanding their concerns
- Understanding their history
- *It's all about connecting*…the more you connect, the more they will be committed to you and their care
- YOU ARE THEIR ORAL HEALTH CARE PROVIDER

As your practice grows beyond just "cleaning teeth", the hygienist will have so many more options to share with your patients the key is taking the time

Non Surgical Periodontal Goals



The 60 minute Value Appointment



The key is allowing the hygienist enough time to be a total oral care provider

Screenings…for Diagnosis

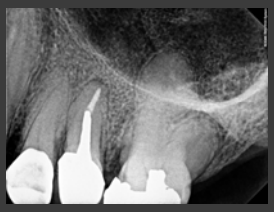
X rays: individualized per patient: This is determined by periodontal and caries susceptibility along with age….Bite Wings Yearly, FMX every 4-5 years, Panorex, and now the world of Cone Beams

Periodontal exam: absolutely annually with full probing and more Clinical Attachment levels, fremitus, mobility, BOP, inflammation, infection

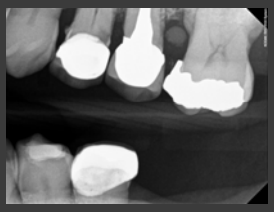
Restorative/Occlusal Exam with both the doctor and hygienist working together, this can include Diagnodent/CariesScan, (when appropriate)/ Transillumination, Articulating paper, Tooth sleuth, Pulp Vitality Tester…..and more

Reading YOUR X-Rays: Who is Responsible?

Look at the different views

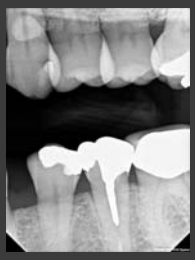


Poor X-ray

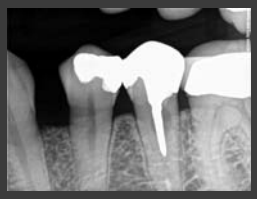


Decay evident 12D, overhang 14M and subgingival calculus

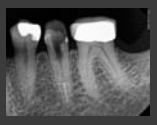
Recall Patient…Asymptomatic

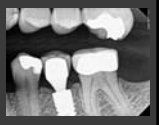


2010



2011:Buccal Parulis





Ankylos 8 months later

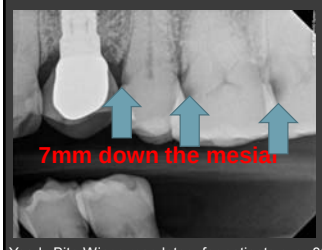
New Challenges we face

Geriatric Dentistry

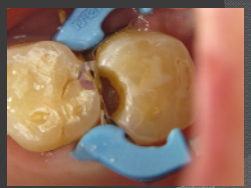
X-Ray protocols and far more

98 years old and my not my oldest patient that day

Dual Materials for Low Stress

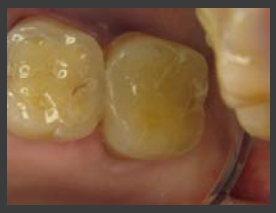


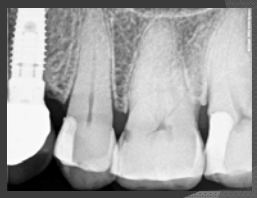
Yearly Bite Wings mandatory for patients over 80



Palodent Plus

Final Class 2 Surefil SDR Flow with Venus Diamond





14 was done 2 weeks later

Essential Equipment: My hygienist's are my eyes!

SDI's Radii LIght

Mandatory: Loupes and Lights Hygienist Responsiblity

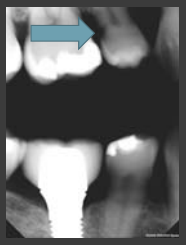
NOW lighting has truly expanded the function of loupes and visualization

Constant light is the key with these battery packs NO dimming of the brightness throughout the day when fully charged

The Diagnostic Light: Doing a hygiene exam with a 'Flash Light"

- Helps find decay, cracks, examine restorations, tartar subgingival and more!
- For the doctors, it's a great add on to simply remove their LED curing tip and pop this on to exam their preps for decay and cracks, root canal orifices, and their exams!

Creating Value: In our office the patient's value their hygienist's far more than just a cleaning!



- If a hygienist uses transillumination
- Loupes with lights
- Careful Examination
- They find lesions early versus late….
- Number 4 distal

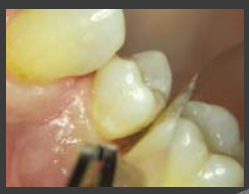
It's all part of YOUR Team's Philosophy…Quality and Value

- Number 4 is rotated
- Contact is there but a food trap
- After I confirm the diagnosis…
- The hygienist has her proxy brushes ready for the patient along with an animation to show the Value! So simple but it works

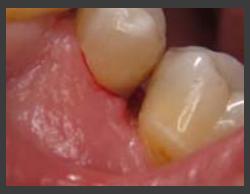
Treatment is Conservative…Saving Tooth Structure: This is our Philosophy and patient's see it!

Treatment

- Versus a destructive Class 2 preparation, access was Disto buccal
- Isolation with mylar (contact exists)
- Bleeding is eliminated with the simplicity of ViscoStat Clear (Ultradent)



Surefil SDR with it's self leveling properties makes this a very simple procedure after isolation is achieved

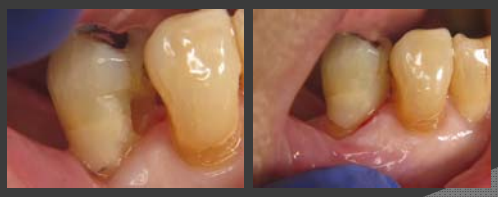


- Why this product?
- Easy handling: inject slowly, keep tip in the material
- Allow self leveling, Just pull the mylar strip tight after 5 seconds
- Very low stress on this high C factor restoration
- This was deep, light curing 4-5mm!
- Translucent color

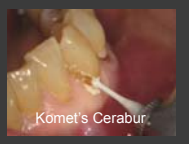
Final X-ray..Conservative Dentistry and well appreciated

Conservative and Age related Treatment…Another new great product…Beautiful Flow from Shofu 8 years studies as a Giomer Hybrid now a flowable

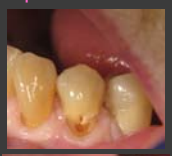
89 years old…Large DO amalgam…Large Buccal…"Repairative" Dentistry versus a crown?

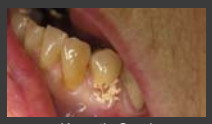


Her other side, do you just let teeth decay….it's about restorative and prevention

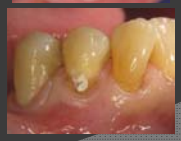


Komet's Cerabur





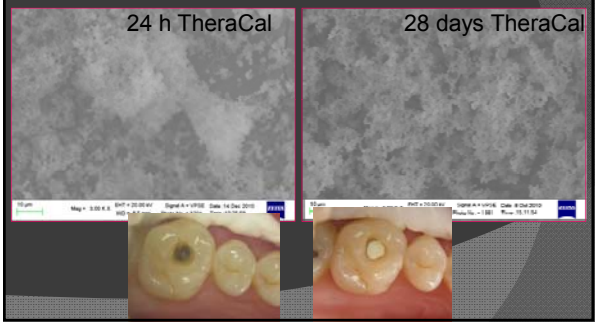
Komet's Cerabur



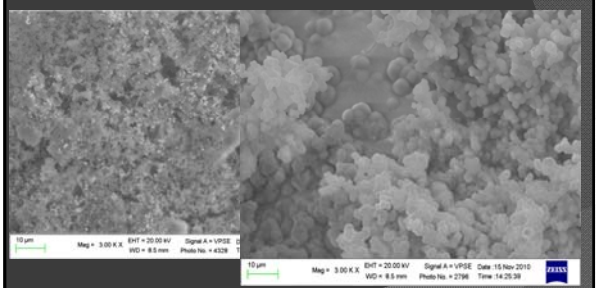
Theracal after 2% Chlorhexidine

The latest for direct and indirect pup caps: Simply place and light cure 20secs

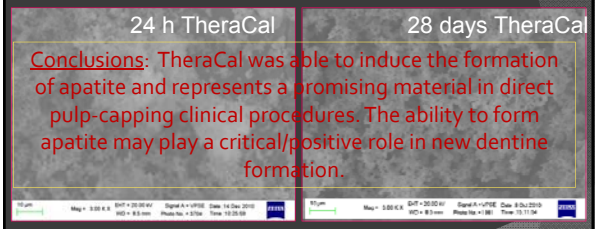
Amorphous to Crystalline in 28 days!



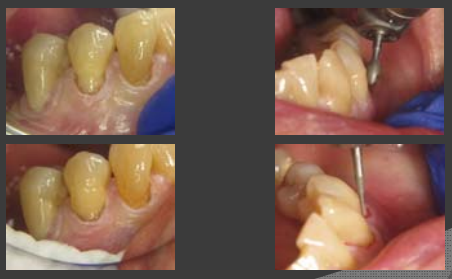
28 days



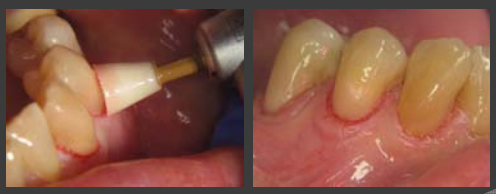
IADR 2011 Abst. #2520 Gandolfi et al. Apatite-forming ability of TheraCal pulp-capping material



Shofu's Flow Plus…Low Flow



Conservative Dentistry at all ages



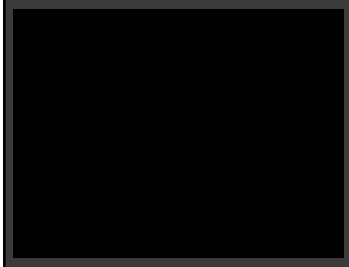
Enhance Cup (Dentsply)
More pressure than Less pressure

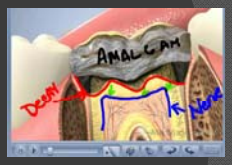
How do examine, explain and prepare your doctor?

Watching….for what!

- Questions regarding Sensitivity
- Cracks, recurrent decay, caries
- Do you have appropriate X-rays and are they readable
- Tools…beyond an explorer and a periodontal probe
- Trans-illumination, articulating paper, tooth sleuth
- Discussion: UP to YOUR TEAMS Philosophy..

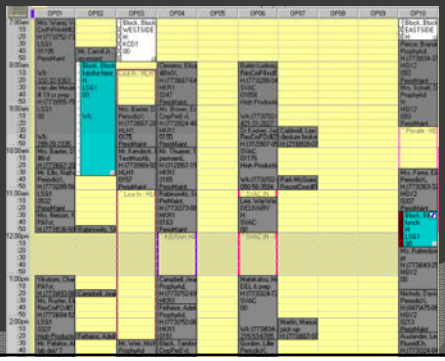
Visual



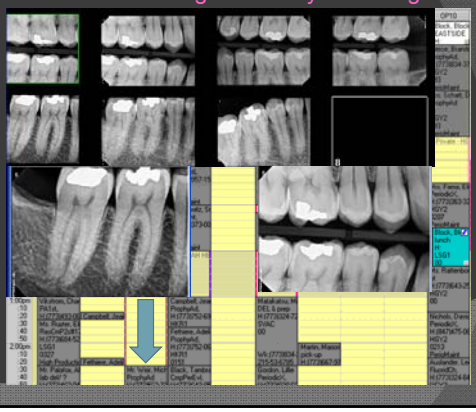


Discussion points…Does your team have this ready in the operatory to discuss everyday issues with today's technologies and skills?

Not just another day but a day when you can have 20 plus hygiene patients and does your team reflect your philosophy

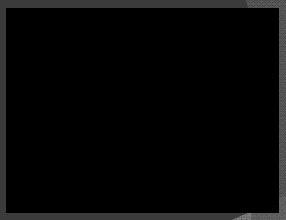


Occasional Chewing Sensitivity lower Right

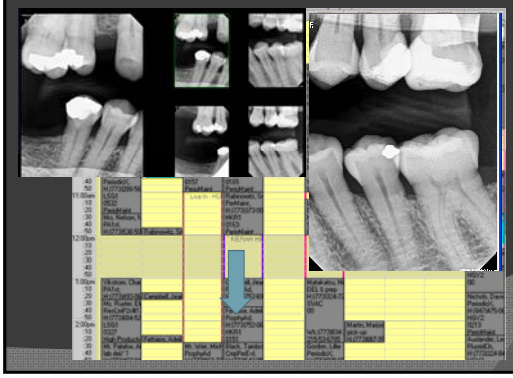


What do you need prepared for your doctor exam?

- The hygienist to have clear x-rays that he or she has read
- Articulating paper to understand and visualize a working cusp or balancing cusp interference
- A 'Tooth Sleuth" ready to evaluate the potential of a fractured cusp
- A visual explanation ready!
- It's about timely diagnosis from both of you working together



History of Fractured Teeth and now 14 is fractured along with buccal abfraction 12 and 13



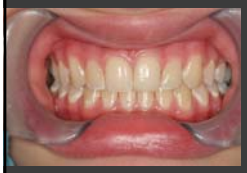
The Doctor walks into your room what do you need?

- You must review the patients history with your doctor
- In this case, history of fractured teeth, buccal abfraction history, occlusal issues, abfraction concerns
- History of bruxism appliances
- The last thing the doctor wants is to be looking through records and records…
- Be concise and give them the history and observations they require

How do you handle?

A wonderful new patient who happens to be 14 with lots of caries issues

Her previous custom attention?



8 class 2 restorations in her mouth already

- Failing Sealants
- White spots throughout her lower dentition on the buccal surfaces
- Poor compliance per her parents
- Poor diet per her!
- Deep caries on upper bicuspids already!

3 Dental offices and traditional approach,
30 minute hygiene appointments… Restorative Visits…that's it!!

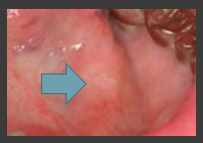
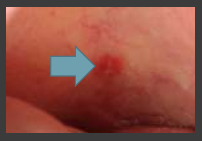
What does your office do that sets it apart?

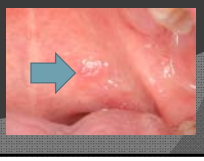
Continued Screenings for Diagnosis

- Saliva Testing with all the future of diagnostics on it's way and now for evaluation of high caries patients, xerostomia and more
- DNA testing for those patients whom we have to know what are bugs behind the disease
- More tests we are looking at Caries Free Testing for ATP and caries susceptibility and more….
- The most important Screening for your team…

Integrating a 1/2/3 Approach to Oral Cancer Screening into Your Office

In my Practice: Do you not look? And if you do…What is your office protocol?



The Absolute #1 screening program that you must implement into your practices

An integrated approach to Oral Cancer Screening

The Problem

34,360 New Cases of Oral Cancer Diagnoses estimated to be made this year in the U.S. Almost a 20% increase since 2001!

75% of HNSCC's are related to tobacco and alcohol use

This segment of oral cancer is DECREASING in the US as usage decreases

The segment INCREASING is Orapharyngeal cancers: specifically…base of the tongue and tonsillar regions…HPV associated

Trends to YOUNGER patients are increasing with this shift

Global Burden of Oral Cancer

Worldwide annual incidence>300,000

The 6th most common malignancy in the world

U.S. Oral Cancer Statistics (oropharyngeal included)

- ~ 8000 deaths yearly, more than melanoma and cervical cancer

More common than:
Leukemia, Hodgkin's, brain, stomach, ovary, thyroid, kidney, pancreas, esophagus cancer

- 3% of all cancers are Oral Cancer
- 90% of oral cancers are squamous cell

The Facts

Risks: Smoking

- Use of tobacco products 75% or more of oral cancers (2004)
- •One pack daily increases risk 4.5 times
- Cigarette use is associated with 92% of oral cancer deaths in men and 61% in women

Risks: Alcohol

- Alcohol
- •6.6 drinks 3.3 times
- •7-9 drinks 15 times
- •Heavy use of both tobacco and alcohol 100 times

Breaking Stereotypes With Facts

- Yet even with older male smokers being the most high risk…
- The numbers of women are increasing who are diagnosed with oral cancer
- And that age thing…like over the age of 60
  - Nearly a five fold increase in oral cancer patients under age 40 from 1973-1997
  - 25% of patients who are diagnosed do not have these risk factors!

Additional Risk Factors

- Sun light especially to the lower lip
- Diets low in fruits and vegetables
- HPV

IN…2006

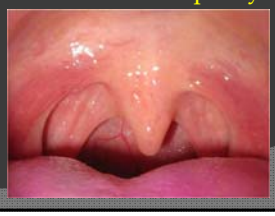
The HPV etiology of these tumors may have future clinical implications for the diagnosis therapy, screening, and prevention of HNSCC."

Clinical Implications of Human Papillomavirus in Head and Neck Cancers
Carole Fakhry and Maura L. Gillison

JOURNAL OF CLINICAL ONCOLOGY
VOLUME 24 NUMBER 17 JUNE 10 2006

IN…2011

"**Human papillomavirus (HPV) is now recognized to play a role in the pathogenesis of a subset of head and neck squamous cell carcinomas** (HNSCCs), particularly those that arise from the lingual and palatine tonsils within the oropharynx.



HPV

- Oropharynx:Tonsillar regions, base of the tongue, soft palate, posterior pharyngeal wall
- HPV likes lymphoepithelial tissue such as in the lingual and palatine tonsils, similar tissues found in the cervix and an….
- Basal cells more exposed due to anatomical features

Transmitting the Disease

- Most people are infected within 2-3 years of becoming sexually active
- Transmitted through skin to skin contact, condoms may not provide protection
- Mouth to mouth kissing or in ordinary family life
- Infected mother to her newborn during delivery

HPV infection may be altering the demographics of HNSCC patients, as these patients tend to be younger, nonsmokers, and nondrinkers.

Hence we begin screening at 15

Facts

- HPV (positive) associated OSCC may affect younger patients and are less differentiated, better prognosis
- HPV independent is the more traditional and more associated with alcohol and tobacco. *(can be involved with HPV associated)

Human Papilloma Virus numbers

- Approximately 75% of the population is infected at some point
- 25-30 million infections yearly in the US
- 3-5% of adolescents have HPV oral infection
- 5-10% of adults have HPV oral infection

HPV Numbers

- Of those 25-30,000,000 infections…
- 26,000 develop HPV malignancies
- 7,400 in the Oral Cavity….
- More in MEN (4X) than woman…
- 30% of all Oral Cancers are HPV related BUT
- Percentage wise….0004% develop HNSCC who are HPV positive…1 for every 2500 HPV positive patient

HPV

- 100 types: approximately 15 are oral related
- HPV-1 common warts, low risk
- HPV-2 and 4, Verruca Vulgaris, low risk
- HPV-6 and 11, genital warts, keratinized tissue locations, low risk
- HPV-16 associated with majority of oral cancer, high risk
- HPV-18 associated with oral cancers, high risk

Facts

- Genital HPV may not predispose patients to Oral HPV
- Genital HPV infections resolve usually 4-20 months
- Low risk HPV infections clear faster than high risk infections (16 and 18)
- 18 studies…Kreimer and Colleagues reviewed prevalence
- HPV 16 associated with 16% of oral cancers
- HPV 16 associated 31% or orapharyngeal cancers

Vacines

- Bivalent
- 16 and 18
- Indicated to prevent, cervical cancer and it's precursors

Cervarix (GSK)

- Quadrivalent
- 6,11,16,18
- Indicated to cancer of the vulva, vagina, anus and it's precursors and adenocarcinoma in situ

Gardasil (Merck)

The Debate:

Should we be doing salivary DNA testing for HPV?

It's as easy as swishing and spitting… OraRisk^{sm} HPV Collection Instructions

- Ask patient to **SWISH and GARGLE** for 30 seconds with provided saline.
- Ask patient to **EXPECTORATE** into labeled collection tube. Tightly seal and place in transport bag.

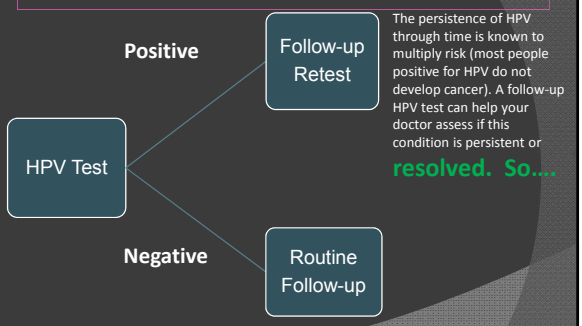
Rinsing and Testing

- High quality sample because of the high yield gathered for HPV in epithelial cells
- Location cannot be determined with this method
- You simply know it's there….

Oral HPV

- The unknown:
  - Clearance rate of oral HPV infection
  - How long is the latency period between infection and carinogenisis
  - Is persistence of the infection related

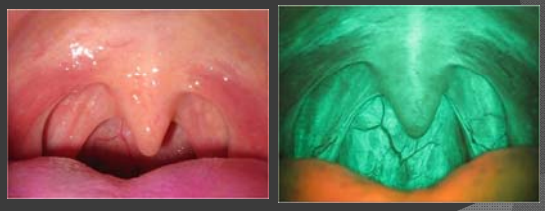
What does my Oral HPV result mean?



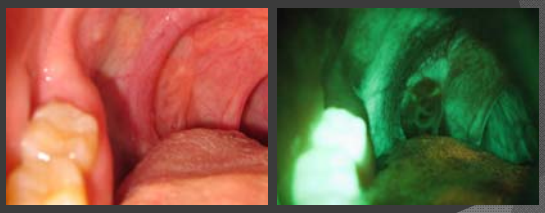
The persistence of HPV through time is known to multiply risk (most people positive for HPV do not develop cancer). A follow-up HPV test can help your doctor assess if this condition is persistent or **resolved. So….**

So….we screen every patient as if they were HPV positive with our 1/2/3 approach

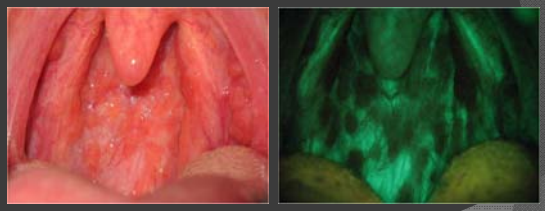
Visualizing Difficult Areas: Bilateral



Unilateral…



Visualization of Difficult Areas



Referred to ENT, - for Dysplasia but tissue changes were caused by reflux and patient was subsequently treated for such

Signs and Symptoms

- Less Visible and very often detected later in stages
- Persistent sore throat, hoarseness, earaches and enlarged lymphnodes can mimic tonsillitis and pharyngitis.
- Dysphagia, weight loss

Steps in malignant transformation of epithelial cells caused by HPV

- Infection with high risk HPV
- High viral load of episomes
- Integration of HPV
- Loss of episomes
- Initiation of S-phase of cell cycling
- Deregulation of cell cycling
- Inhibition of apoptosis
- Deregulation of DNA repair
- Cellular senescence
- Immortalization of the cell
- Telomere erosion
- Genomic instability
- Other cofactors such as smoking, irradiation, carcinogens
- Progression towards malignancy

Final Thoughts

- Most infections simply clear, those that don't and become persistent, increase the possibility of cellular transformation that can lead to negative changes.

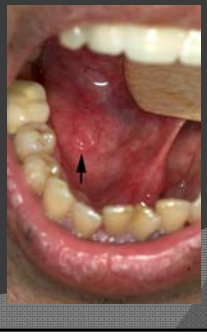
Final Thoughts

- Strong etiologic association with a large percentage of orapharyngeal cancers but a far lower relationship with intra oral cancers
- More closely aligned to younger patients, white male, multiple sexual partners, non tobacco smoking (marijuana potential), better prognosis than HPV non associated orapharyngeal and other oral cancers

The Dilemma

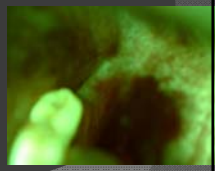
The Challenge of Early Detection

- 5% to 15% of all dental patients have an oral abnormality
- The vast majority of these are truly benign
- Detecting those that are precancerous and cancerous is the key to improving survival of oral cancer patients



The Difficulty With Oral Cancer Screening

- Classic features of oral cancer: nodularity, ulceration, fixation, and large size are features of advanced lesions, not early ones
- Precancerous and early cancerous lesions appear identical to common, benign-looking lesions- no distinctive features
- Benign-looking but dangerous lesions are left to progress to advanced stages



Thoughts

- Clinical inspection alone cannot differentiate precancerous and early cancerous lesions from common benign lesions
- It is impractical to subject every innocuous looking lesion to scalpel biopsy….YOU need a full screening approach

So…are you doing enough for your patients?

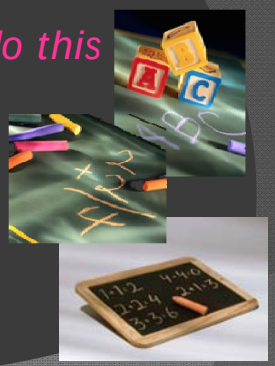
Step 1…..Change

Who's responsibility is it to do oral health exams?

In a simple answer…..ours

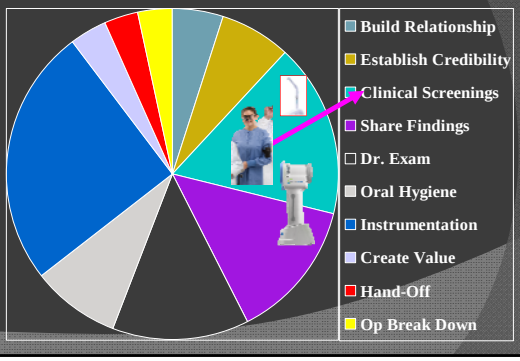
To diagnose early and ultimately save lives

Ask yourselves:
"How can we do this better?"



The hygienist per every appointment follows the 60 minute protocol

60 Minutes to Success

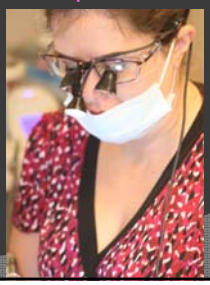


4 Essential Steps to Oral Cancer

- Visualization…if you don't look, how can you find. If you don't look, then you are negligent
- Palpation
- Beyond Visualization… understanding how to incorporate Velscope into your practice
- Oral CDX, Cytology, Biopsy… don't watch, prevent

First Off…you must look visually and do a full visual exam and palpation exam

Loupes aren't just for the dentist anymore:
IN my practice, All of my hygienists wear 2.5x loupes and lights

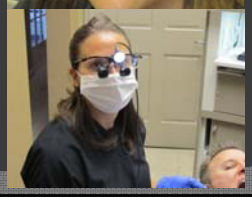


Advantage of Magnification

Without Magnification | 2.5x Hygienist | 3.5x Doctor

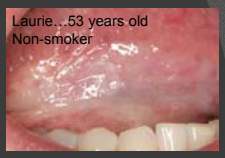
- Lower Power = Less detail, but wider viewing field
  - Appropriate for general exam, cleaning, scaling, and probing
- Higher Power = **Greater detail**, but smaller viewing field
  - More appropriate for single tooth restorative work, endo, and surgery

The Conversion in my Practice Seeing the Light



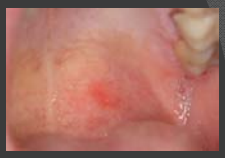
In my practice....each month

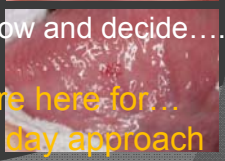
- 10% of all leukoplakias turn into pre cancerous lesions or cancerous lesions
- Leukoplakias on the lateral border of tongue or floor of the mouth 25-50% chance of dysplasia
- How do you find these in your practice?



In my practice this year

70% of erythroplakias have pre-malignant changes





How do you find, follow and decide….

That is what we are here for…
A simplified every day approach

After a complete visual exam and palpation exam...in our practice we perform our second screening....annually and often biannually and even sometimes more, each hygiene visit...

Velscope

An instrument that we believe gives our team better screening skills

VELscope® The Mucosal Examination System

Benefits of Direct Tissue Fluorescence Visualization Technology

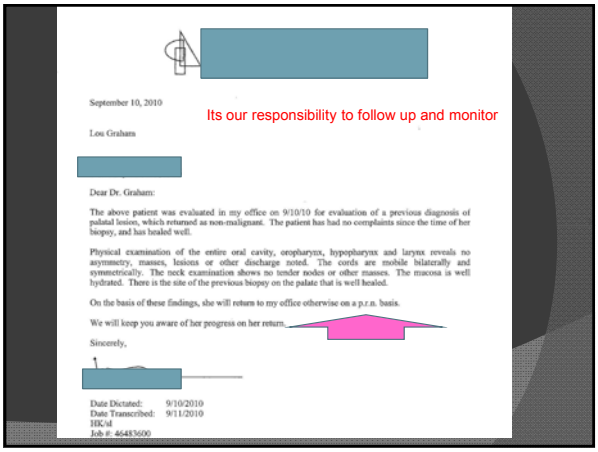
- Effective
- Non-invasive
- No stains or rinses required
  - No side effects
  - No interaction with mouthwashes, fluorides, prophy paste, etc.
  - No aftertaste
  - No temporary or lasting discoloration
- Does not interfere with other care or treatments
- Quick and easy to use…less than 2-3 minutes
- Cost-effective (significantly lower per-patient costs)

In our practice, it is a mandatory exam and at 26$...and rarely do more than 10 patients yearly decline the test

Learning curve: a 2 hour in service by Velscope and we were off ! Today…Velscope offers on-line learning and the support from an Oral Pathologist

Role of Direct Fluorescent Visualization with Velscope

- Screening (Discovery)
  - If questionable or postive for a finding routinely….Oral CDx/Liquid Based Cytology unless it immediately based on our concern, requires a biopsy
- Biopsy Guidance
- Margin Delineation
- Surveillance and Monitoring



September 10, 2010

Its our responsibility to follow up and monitor

Lou Grahams

[redacted]

Dear Dr. Graham:

The above patient was evaluated in my office on 9/10/10 for evaluation of a previous diagnosis of palatal lesion, which returned as non-malignant. The patient has had no complaints since the time of her biopsy, and has healed well.

Physical examination of the entire oral cavity, oropharynx, hypopharynx and larynx reveals no asymmetry, masses, lesions or other discharge noted. The cords are mobile bilaterally and symmetrically. The neck examination shows no tender nodes or other masses. The mucosa is well hydrated. There is the site of the previous biopsy on the palate that is well healed.

On the basis of these findings, she will return to my office otherwise on a p.r.n. basis.

We will keep you aware of her progress on her return.

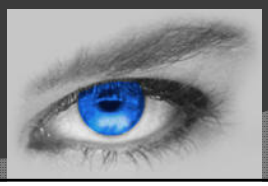
Sincerely,

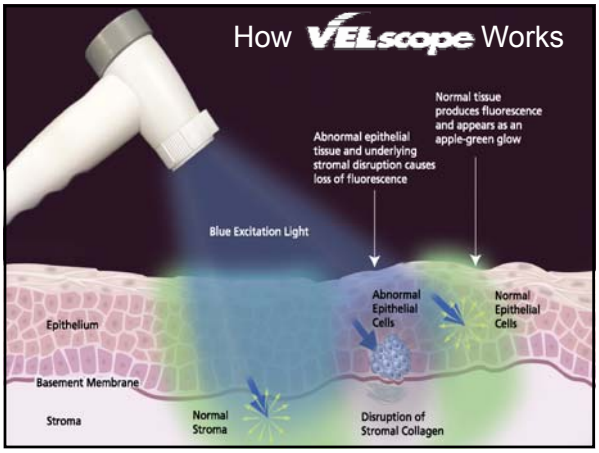
[redacted]

Date Dictated: 9/10/2010
Date Transcribed: 9/11/2010
HK/sl
Job #: 46483600

Fluorescence Visualization

- Compliments rather than replaces what can be seen with the naked eye and manual manipulation
- Fundamentally different than white light





Generally speaking, healthy oral mucosa presents as a bright green colour due to a combination of predominantly green fluorescence from both the epithelial and stromal layers

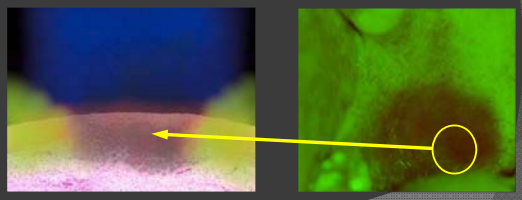
Normal (Healthy) Tissue Fluorescence

- Shinning an excitation light on the tissue causes it to emit fluorescence
- Color is characteristic of combination of the fluorophores in the tissue

Schematic representation of tissue fluorescence

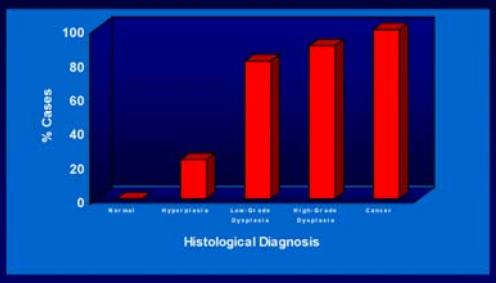
Abnormal Tissue Fluorescence

- Changes in tissue fluorescence can help determine areas where molecular/structural changes have occurred

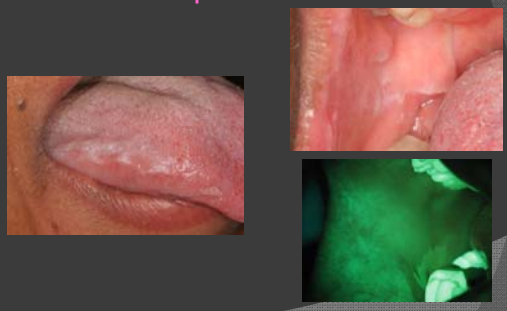


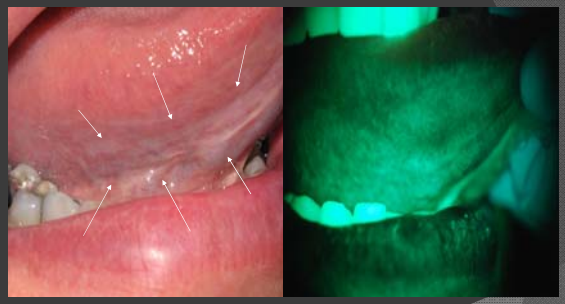
Schematic representation of tissue fluorescence

Histology & Loss of Fluorescence



White lesions…negative under Velscope… all GREEN



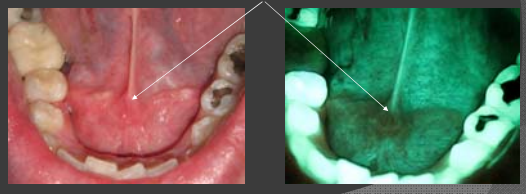


Lichen Planus – VELscope Confirmed Benign Etiology

Dept of Oral Medicine, University of Washington

Sometimes healthy tissue has a normal fluorescence pattern of both bright and dark areas

Area of dense vascularization may appear symmetrically dark under VELscope



Floor of the Mouth

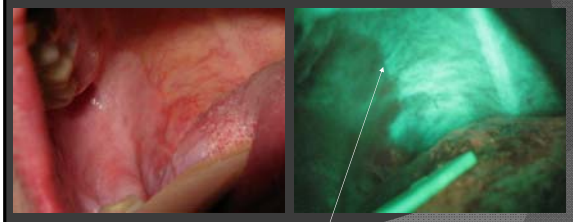
Fluorescent Changes

Some Important things to remember…

- Recognize normal and abnormal *patterns* of fluorescence – your brain is good at pattern recognition!
- Look for unilateral as opposed to bilateral symmetry in helping you decide what "doesn't belong".
- Be especially careful about non-symmetrical lesions with irregular and/or well-delineated borders – this could be a danger sign.
- Excess blood in the tissue will nearly always look dark under VELscope

Dysplasia on the Soft Palate

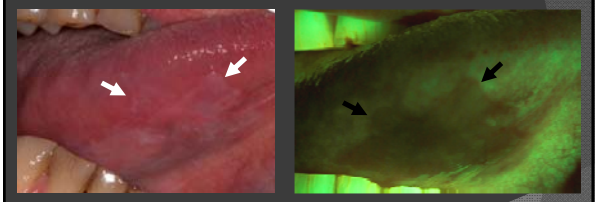
Biopsy confirmed moderate dysplasia



Notice the well delineated and irregular border

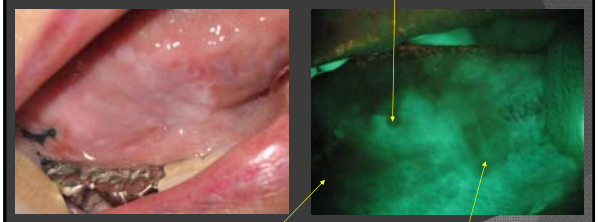
Dysplasia & Oral Cancer

Biopsy Confirmed as Severe Dysplasia



Dysplasia & Oral Cancer on the lateral border of the tongue

Severe dysplasia

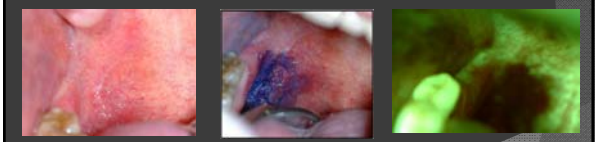


Invasive Squamous Cell Carcinoma

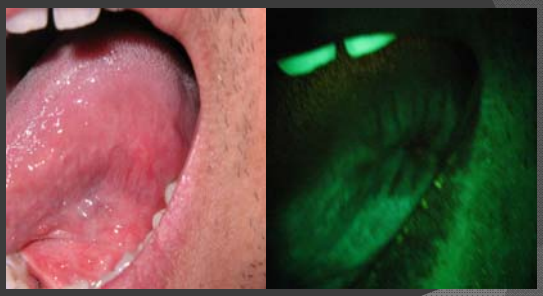
Moderate dysplasia

Dysplasia & Oral Cancer

Clinically occult lesion presents as an extended dark area under VELscope

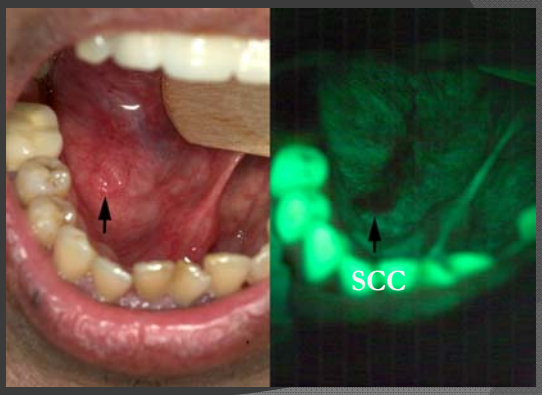


Biopsy confirmed carcinoma in situ



Moderate Dysplasia

Dept of Oral Medicine, University of Washington

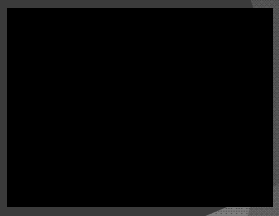


New York University, Dept of Oral Medicine

Blanching

Using an instrument to blanch a dark area under VELscope can be a useful technique for indicating whether or not an abnormality has an inflammatory component

This particular area blanches completely. Treatment and subsequent follow-up after two weeks resulted in complete resolution.



R eturn O n I nvestment

- **We are Charging $26 per use in addition to normal hygiene fees**
- **Once a year fee, alternating with bite wings.**
- **Average 4 Velscope Exams per hygienist per day**
- **It is mandatory to have this done yearly in our practice or a release is signed**
- **Follow ups are complimentary in the same year**
- **Low End is $100 per day per hygienist**
- **One hygienist work 4 days per week which works out to $1,600 per hygienist per month**

Reimbursement Code (US)

D0431 (20 million insured lives for yearly tests)

cdt 2007 2008 current dental terminology ADA

Adjunctive Mucosal Screening

An adjunctive pre-diagnostic test that aids in detection of mucosal abnormalities including pre-malignant and malignant lesions,

Not to include cytology or biopsy.

Related CDT-2007 Procedure Code Values

Relative Fee Information Obtained From 2007 National Dental Advisory Service®

Code	Description	40 %	50 %	60 %	70 %	80 %	90 %	95%
D0120	Periodic Oral Evaluation	34	36	38	40	43	47	53
D0150	Comprehensive Oral Evaluation	58	62	66	68	74	82	92
D0170	Re-evaluation – limited problem focused	47	49	52	55	60	68	73
D0210	Intraoral –Complete Series -(Including Bitewings)	92	95	98	102	107	116	126
D0220	Intraoral –Periapical Film (first)	20	21	22	23	24	26	28
D0230	Intraoral –Periapical (each additional)	16	17	18	19	20	26	28
D0272	**Bitewing –Two (2) Films**	**32**	**33**	**34**	**36**	**38**	**41**	**44**
D0274	**Bitewing –Four (4) Films**	**45**	**47**	**48**	**50**	**53**	**58**	**63**
D0330	Panoramic	79	82	86	89	92	99	107
D0350	Oral/ Facial Photographs	48	50	53	57	63	73	86
D0431	**Adjunctive Pre-diagnostic Test that Aids in Detection of Mucosal Abnormalities - Including Premalignant Lesions, Not to Include Cytology or Biopsy Procedures**	**44**	**48**	**58**	**63**	**73**	**82**	**97**

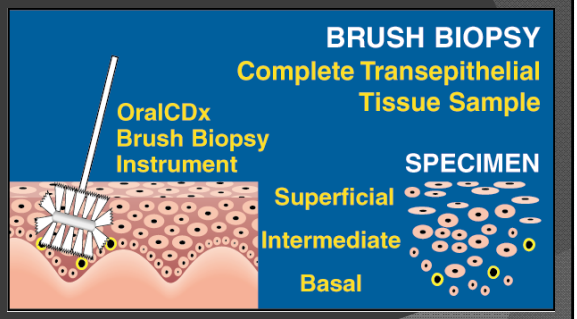
Once the Initial Screening of Visualization with natural light and Velscope is done and an abnormal finding is found…then what?

- Oral CDx routinely…unless its that suspicious that you jump to a biopsy OralCDx is intended to test "everyday" oral spots to detect the 4% of them which may contain still harmless dysplasia - years before a suspicious lesion can form.
- Liquid Based Cytology is another option
- Biopsy… if it's something that I am immediately concerned about we bypass the brush test

OralCDx Testing

Two Components

- Office Procedure- OralCDx BrushTest
- Laboratory Analysis - Computer-assisted inspection specifically designed for oral dysplasia.



Technique Review

- The flat surface should be used in most cases.
- Apply firm pressure against the lesion - you should see a slight bend in the brush
- Rotate clockwise 10 times or more
- Pink tissue or micro bleeding indicates that the brush has penetrated to the basement membrane
  - If lesion bleeds, stop brushing and transfer material to slide

OralCDx BrushTest

- If you did not obtain a complete transepithelial sample – it is safe for you and the patient – the lab will notify you that the sample was "partial" and needs to be repeated.
- You will receive a "negative" report only if the sample was complete.

The Brush Biopsy Technique

Transfer Cells

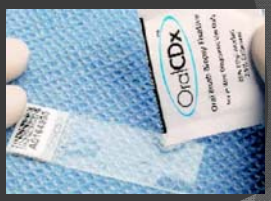
- Evenly spread the specimen over the entire slide – bar code facing up

Hold the slide up to a light – ensure the cellular material is visible on the slide

The Brush Biopsy Technique

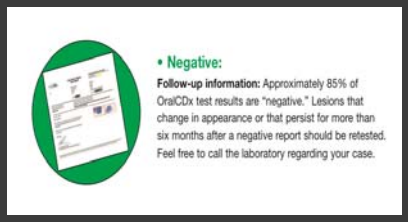
Apply Fixative
… by flooding slide with liquid

Complete paperwork
place slide and slide holder into mailer



Full instructions included in each OralCDx test kit

OralCDx Result "Negative equates to No Dysplasia"



• **Negative:**

Follow-up information: Approximately 85% of OralCDx test results are "negative." Lesions that change in appearance or that persist for more than six months after a negative report should be retested. Feel free to call the laboratory regarding your case.

OralCDx Result "Positive equates to Biopsy"

• **Positive:**

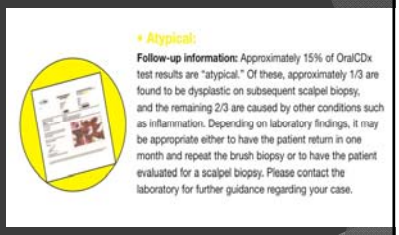
Follow-up information: Approximately 1% of OralCDx tests are "positive" and these patients should have a scalpel biopsy. Please feel free to call the laboratory with any questions.

Scalpel biopsy to provide additional information regarding the nature and degree of the abnormality detected with OralCDx

OralCDx Result "Atypical equates to Thought"

The probability that a patient with an "atypical" report has a dysplasia is

~ 40%



• **Atypical:**

Follow-up information: Approximately 15% of OralCDx test results are "atypical." Of these, approximately 1/3 are found to be dysplastic on subsequent scalpel biopsy, and the remaining 2/3 are caused by other conditions such as inflammation. Depending on laboratory findings, it may be appropriate either to have the patient return in one month and repeat the brush biopsy or to have the patient evaluated for a scalpel biopsy. Please contact the laboratory for further guidance regarding your case.

The OralCDx laboratory can provide you with specific guidance on how to follow-up each "atypical" report.

Reports are faxed and mailed

"positive" and "atypical" reports include images of abnormal cells found

OralCDx

Oral Brush Biopsy Test Report

Confidential Patient Information

Dr.

Biopsy Date:
Rec Date:
Phone:
Fax:

Patient:
Sex: M
DOB:
SS#
Lesion: Lateral Tongue

Pt#

Case:

Microscopic Description: Mild atypia
Cellular Representation: Superficial, intermediate, and basal cells
Diagnosis: Atypical squamous epithelial cells

02 / 04 / 2005

Dear Doctor:

The brush biopsy shows nuclear crowding with a loss of polarity, and an increase in nuclear staining.

Please refer to attached explanations of diagnostic categories.

Sincerely,

Dr. Matthew Klein
Cytopathologist (Electronically Signed)

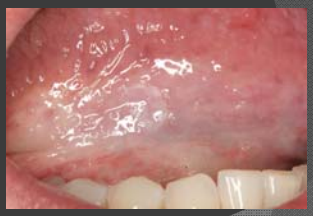
Reimbursement

- The majority of both the dentist's and the laboratory's charges are covered by most dental and medical plans
  - Dentist's fee for performing the test
    - Specific CDT Code is widely covered by dental $75-$125
    - Average fee for service range $120-175
    - Medicare > $120 – Important for nursing home practices
    - Dentist's only cost is $10 for the OralCDx test kit.
  - OralCDx laboratory Fee for analysis of the specimen
    - OralCDx lab bills the patient's medical insurance $95
    - >97% of medical plans cover a portion of this fee.

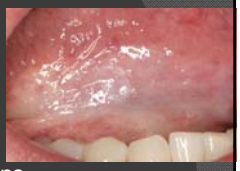
5 patients and how we followed them

Laurie…

- 50 ish
- Non smoker
- Social Drinker
- Negative Velscope
- Brought her back 2 weeks later, still present….
- Brush Biopsy….



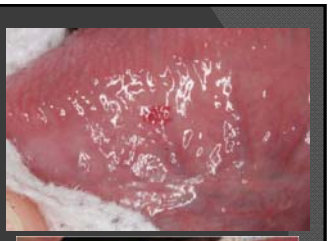
Follow up

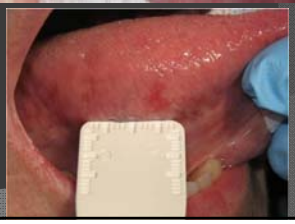


- With a negative finding…
- Stored the JPEG in the patients digital file
- Measured the lesion's dimensions
- Re-evaluated the patient 2 months later and with lesion was still present, she wanted the area biopsied due to history in family of oral cancer and no dysplasia was found and we will continue to follow and monitor

Dan

- 80 years old
- Non Smoker
- Non Drinker
- Lesion NOT present at last exam
- Lesion was positive for Velscope
- NO blanching
- Brush Biopsy two weeks later after area presented unresolved

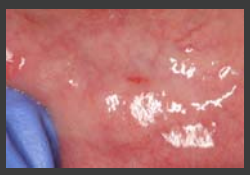


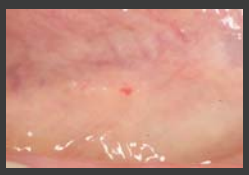


Follow up

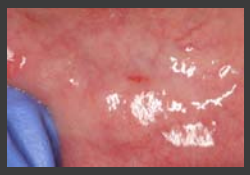
- Atypical Finding
- Pictures taken, sent to Oral CDX and discussed with Histopathologist and suggestion was that probably ecchymosis
- Re-evaluate in 2 months, if present, measure, new picture, re- brush and if same results…just biopsy and if negative results…continue to watch
- Results were negative and the lesion is checked every hygiene visit and pictures are stored in his file
- Discussion with patient….if patient wanted biopsy, would refer to oral surgeon..he declined and we have follow for 3 years

Two red lesions….both asymptomatic



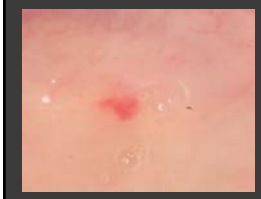


Positive under Velscope at hygiene visit



- Direct visual
- Velscope positive
- Negative to blanching
- Brought patient back two weeks later for evaluation and if still positive would brush test
- Lesion was gone and probable cause was trauma

Positive under Velscope

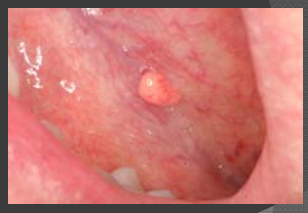


- Palate
- Direct Visualization
- Positive Velscope
- Brought patient back 2 weeks later, still present
- Brush Test
- Results..atypical
- Sent for excisional biopsy
- Dysplasia….

33 year old medical student, non smoker

Mike

- 58 years old
- Small lesion that we were observing with Velscope (negative) times two visits
- Felt the lesion had grown over the last few months
- Oral CDX not indicated
- Laser Biopsy done
- Fibroma type lesioin



Expanding the Hygiene/Doctor Team

Turning patients around of all ages is essential to our practice and truly begins with customizing home care regimens and treatments

Let's take a number of patients and begin customizing their treatment and creating long term value