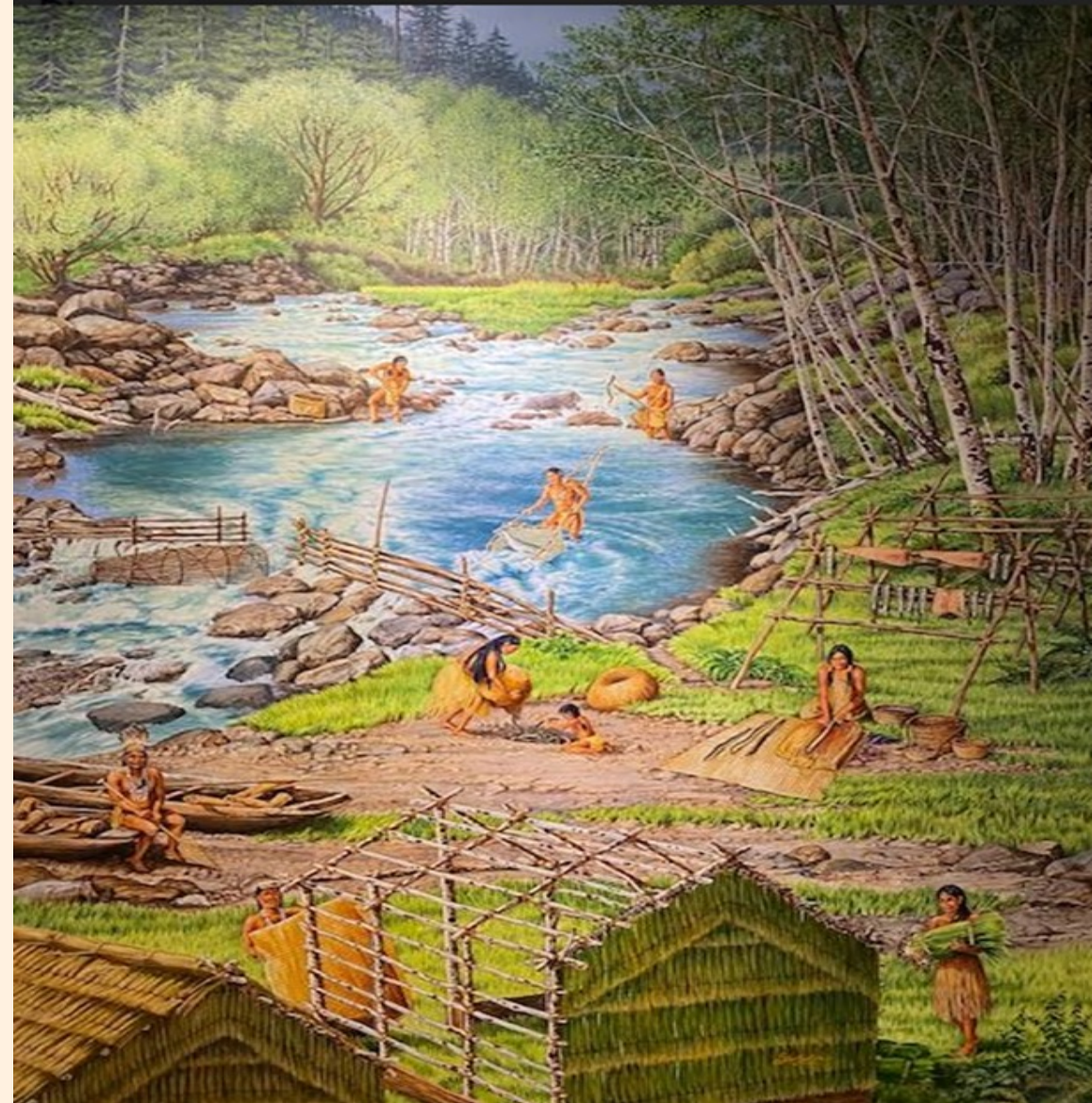


Indian Country Oral Health ECHO: Minimally Invasive Dentistry and Case Presentation

WELCOME!



NORTHWEST PORTLAND AREA
INDIAN HEALTH BOARD
Indian Leadership for Indian Health

Northwest Portland Area Indian Health Board

Established in 1972, the Northwest Portland Area Indian Health Board (NPAIHB or the Board) is a non-profit tribal advisory organization serving the forty-three federally recognized tribes of Oregon, Washington, and Idaho. Each member tribe appoints a Delegate via tribal resolution and meets quarterly to direct and oversee all activities of NPAIHB.

“Our mission is to eliminate health disparities and improve the quality of life of American Indians and Alaska Natives by supporting Northwest Tribes in their delivery of culturally appropriate, high-quality healthcare.”



NORTHWEST PORTLAND AREA
INDIAN HEALTH BOARD
Indian Leadership for Indian Health

Indian Country Oral Health ECHO: Minimally Invasive Dentistry and Case Presentation

DISCLAIMER:

We have no financial disclosures or conflicts of interest with the information in this presentation.



NORTHWEST PORTLAND AREA
INDIAN HEALTH BOARD
Indian Leadership for Indian Health

Indian Country Oral Health ECHO:

Faculty:



Sean Kelly
DDS, MSHS
NTDSC
Clinical Consultant



Martin Lieberman
DDS, MA
VP, Graduate Dental
Education,
NYU-Langone
Arcora Foundation
Consultant



Miranda Davis
DDS, MPH
TCHPP
NDTI Project
Director



Pam Ready (Puyallup)
RDH, MSDH
TCHPP
DHA Education
Manager



Tacey Mason (Siletz)
MA
NTDSC
Project Director



Lynn Van Pelt
DMD
IHS Portland Area
Area Dental Consultant



NORTHWEST PORTLAND AREA
INDIAN HEALTH BOARD
Indian Leadership for Indian Health

Objectives:

Upon completion of this course, participants will be able to:

1. Build minimally invasive dentistry skills.
2. Recognize risk factors and apply preventive measures to reduce the occurrence of oral health disease.
3. Learn techniques on how to treat patients with holistic and culturally appropriate care.



In Review:

1. July: Initial Case Presented
 - a. Defined MID
 - b. Reviewed Caries Management and Risk Assessment (CAMBRA)
 - c. Phased/IHS Levels of Care
2. Sept: Reviewed same Case
 - a. Motivational Interviewing
 - b. AI/AN Traditional Diets



Outline:

1. Case Presentation (Review)
2. Didactic Presentation
 - Treatment Plan & Treatment
3. Group Discussion and Q&A



“The evidence-base for survival of restorations clearly indicates that restoring teeth is a temporary palliative measure that is doomed to fail if the disease that caused the condition is not addressed properly.”

<https://pubmed.ncbi.nlm.nih.gov/15646587/>



**NORTHWEST PORTLAND AREA
INDIAN HEALTH BOARD**
Indian Leadership for Indian Health

Save

Email

Send to

Display options

> Oral Health Prev Dent. 2004;2 Suppl 1:287-92.

What is minimally invasive dentistry?

Dan Ericson ¹

Affiliations + expand

PMID: 15646587

Abstract

Minimally Invasive Dentistry is the application of "a systematic respect for the original tissue." This implies that the dental profession recognizes that an artifact is of less biological value than the original healthy tissue. Minimally invasive dentistry is a concept that can embrace all aspects of the profession. The common delineator is tissue preservation, preferably by preventing disease from occurring and intercepting its progress, but also removing and replacing with as little tissue loss as possible. It does not suggest that we make small fillings to restore incipient lesions or surgically remove impacted third molars without symptoms as routine procedures. The introduction of predictable adhesive technologies has led to a giant leap in interest in minimally invasive dentistry. The concept bridges the traditional gap between prevention and surgical procedures, which is just what dentistry needs today. The evidence-base for survival of restorations clearly indicates that restoring teeth is a temporary palliative measure that is doomed to fail if the disease that caused the condition is not addressed properly. Today, the means, motives and opportunities for minimally invasive dentistry are at hand, but incentives are definitely lacking. Patients and third parties seem to be convinced that the only things that count are replacements. Namely, they are prepared to pay for a filling but not for a procedure that can help avoid having one.

ACTIONS

“ Cite

☆ Favorites

SHARE



PAGE NAVIGATION

< Title & authors

Abstract

Similar articles

Cited by

MeSH terms

LinkOut - more resources

Indian Country Oral Health ECHO: Minimally Invasive Dentistry and Case Presentation

Today's Faculty:



Sean Kelly, DDS, MSHS
NTDSC
Clinical Consultant



Martin Lieberman, DDS, MA
VP, Graduate Dental
Education, NYU-Langone
Arcora Foundation
Consultant



Miranda Davis, DDS, MPH
TCHPP
NDTI Project Director



Pam Ready (Puyallup)
RDH, MSDH
TCHPP
DHA Education
Manager



Case Presentation



**NORTHWEST PORTLAND AREA
INDIAN HEALTH BOARD**
Indian Leadership for Indian Health

A Management Case of an Adult High Caries Risk Patient

Indian Country Oral Health
ECHO

Provided by:
Mikkell Bowens, DDS
Grand Ronde Dental Clinic



NORTHWEST PORTLAND AREA
INDIAN HEALTH BOARD
Indian Leadership for Indian Health



Background information:

- Patient is a 18 year old male, Grand Ronde Tribal Member
- Primary concern was generalized sensitivity, pain in the anteriors resulting in SDF treatment in 2021
- Patient Goals. Initial: to relieve sensitivity. Current: to reduce black appearance of his teeth
- Additional Information: Poor dietary habits, poor oral hygiene, limited access to care mainly due to mother's severe dental anxiety, thus not following through with dental care



Dental Findings:

2021 – 17 years old

- Comprehensive Exam
- Oral cancer screening: EO: WNL IO: WNL
- Pt admits to not brushing
- Gingiva: Moderate gingivitis
- Chief Complaint: Generalized sensitivity, Pain in the front teeth

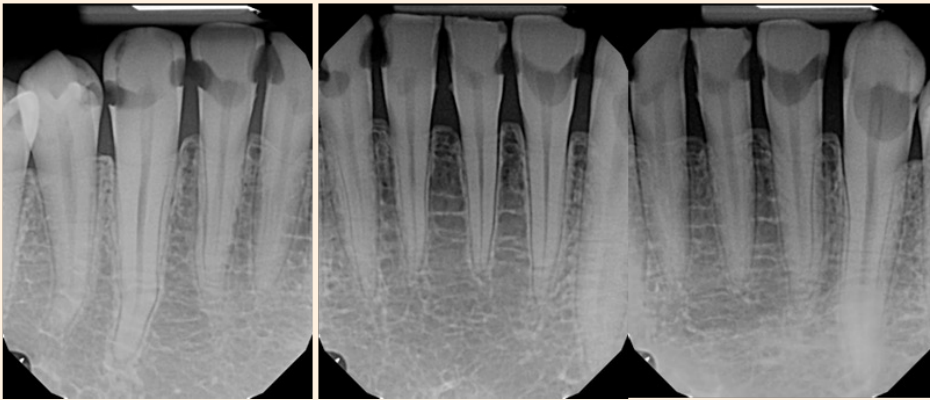
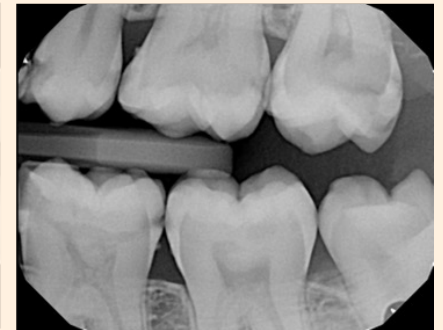
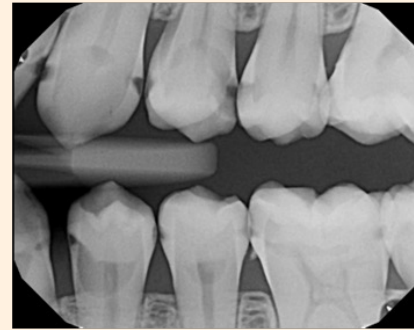
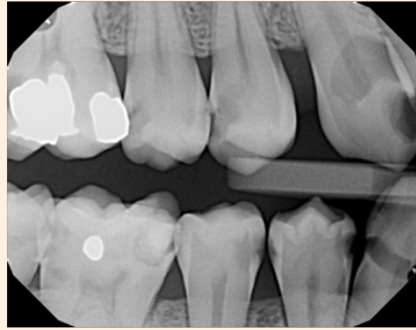
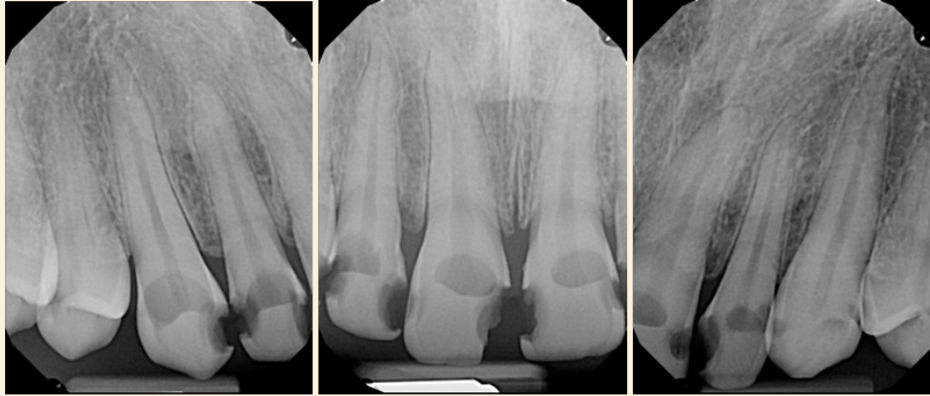
- Side note: Patient's mother has severe dental anxiety (barrier to care for patient?)



Dental Findings: 10 Photos



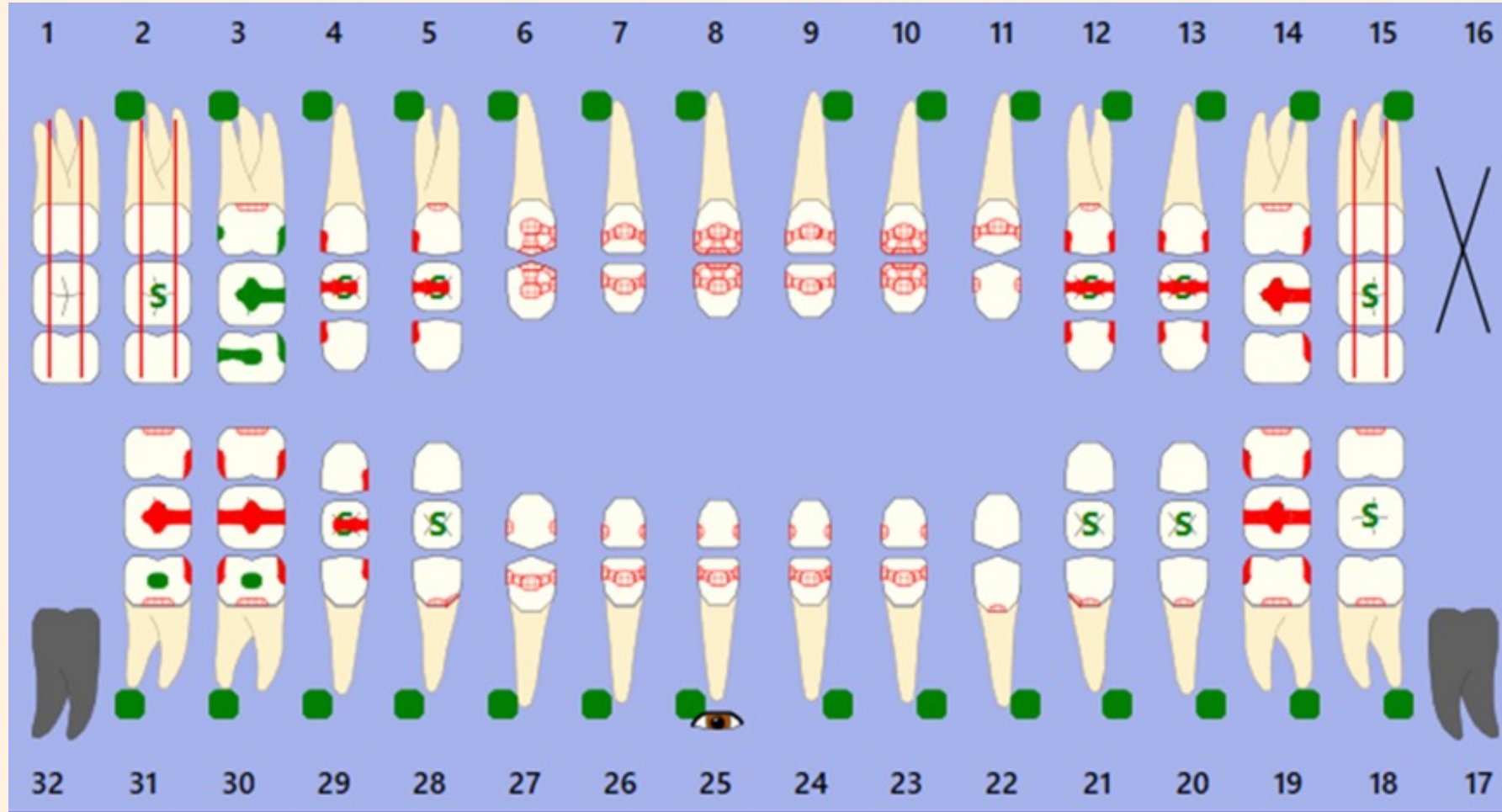
Dental Findings: IO radiographs



Dental Findings: Panoramic



Dental Findings: Odontogram



4/28/2022 – 7 months later:

Presents to the clinic for a limited exam after missing appointment and never rescheduling

- Chief Complaint: “I do not like the look of the black teeth.”
- Re-evaluation of dentition completed:
- Caries appears to be arrested
- Teeth are blackened and feel hardened
- Reapplied SDF, applied Iodine, & fluoride varnish
- Provided Prevident 5000 toothpaste again (siblings squirted out the toothpaste and wasted it)



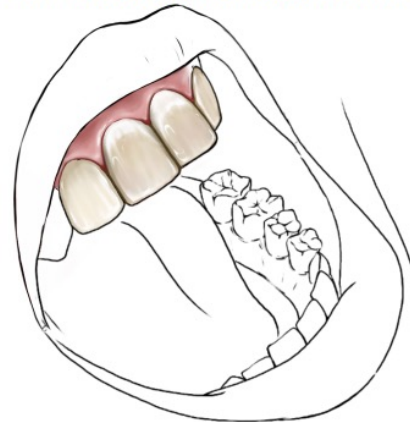
Differentiate Active vs. Arrested

Caries:

HOW TO

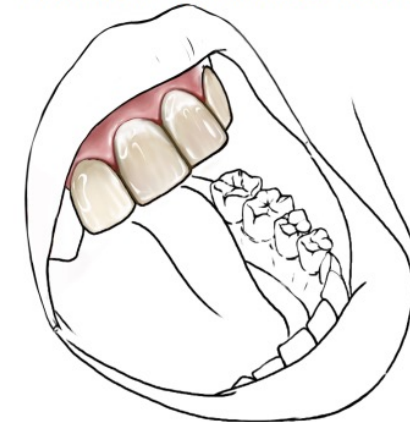
differentiate **Active vs. Arrested** caries lesions by visual-tactile assessment of surface texture and topography.

ACTIVE non-cavitated lesions (*initial*)



- No surface breakdown, yet. Demineralization can go into the outer 1/3 of dentin.
- Usually plaque-covered (assess *before* cleaning).
- Can be white or yellow.
- Active facial / buccal lesions typically reach the gumline.
- On posterior teeth, chalky white or yellow areas extend out of the fissures.
- Chalky, no shine upon drying.
- Feels bumpy and soft when gently dragging the end of a blunt instrument across the lesion.
- Radiographs may show demineralization in the outer third of dentin, but without cavitation dentin is not infected.

ARRESTED non-cavitated lesions (*initial*)



- No surface breakdown.
- Usually plaque-free. (assess *before* cleaning).
- Can be white, brown, or black.
- Arrested facial / buccal lesions typically do not reach the gumline.
- On posterior teeth, no chalky white or yellow areas extending out of fissures. May have dark staining.
- Shiny upon drying.
- Feels smooth and hard when gently dragging the end of a blunt instrument across the lesion.

ACTIVE cavitated lesion (*moderate, advanced*)



- Easily visible cavitation. The hole breaches the dentin. Usually the demineralization reaches the middle or inner 1/3 of dentin.
- Usually plaque-covered (assess *before* cleaning).
- White, yellow, or light brown and often dull = bacterial growth.
- Feels soft or leathery when gently dragging the end of a blunt instrument across the lesion.

ARRESTED cavitated lesion (*moderate, advanced*)



- Cleansable lesions are much more likely to arrest than lesions with plaque traps.
- Easily visible cavitation. The hole breaches the dentin.
- Usually plaque-free. (assess *before* cleaning).
- Amber to dark brown or black and often shiny = no bacteria.
- Feels smooth and hard when gently dragging the end of a blunt instrument across the lesion.



4/28/2022 – 7 months later:



**White is fluoride varnish (not plaque)

Didactic Presentation



**NORTHWEST PORTLAND AREA
INDIAN HEALTH BOARD**
Indian Leadership for Indian Health

Treatment Plan:

1. Patient Acceptance
2. Patient Compliance
3. Phase care
4. Sequence of care
5. Materials



Treatment Plan:

- 1. Patient Acceptance** -Before a treatment plan can be initiated the patient needs to accept the proposed plan. A proposed plan and its acceptance is based on such factors as:
 - a. understanding of the dental findings and the disease process
 - b. importance of home care and nutrition – personal autonomy and responsibility
 - c. Be aware and accept the available dental resources for care



Treatment Plan:

J Pharm Bioallied Sci

J Pharm Bioallied Sci. 2012 Aug; 4(Suppl 2): S406–S409.

doi: [10.4103/0975-7406.100305](https://doi.org/10.4103/0975-7406.100305)

PMCID: PMC3467905

PMID: [23066299](https://pubmed.ncbi.nlm.nih.gov/23066299/)

Treatment planning in conservative dentistry

[Andamuthu Sivakumar](#), [Vinod Thangaswamy](#),¹ and [Vaiyapuri Ravi](#)

▶ [Author information](#) ▶ [Article notes](#) ▶ [Copyright and License information](#) ▶ [Disclaimer](#)

1. Patient Acceptance -Before a treatment plan can be initiated the patient needs to accept the proposed plan. Factors affecting a treatment plan:

Table 1

Factors affecting treatment plan

Patient factors	Dentist factors
Patient preferences	Dentists knowledge
Motivation	Experience and training
Systemic health	Laboratory support
Emotional status	Dentist–patient compatibility
Financial capabilities	Availability of specialists
	Functional, esthetic, and technical demands



NORTHWEST PORTLAND AREA
INDIAN HEALTH BOARD
Indian Leadership for Indian Health

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3467905/>

Treatment Plan:

1. Patient Acceptance
- 2. Patient Compliance**
3. Phase care
4. Sequence of care
5. Materials



Treatment Plan:

2. Patient Compliance

- a. Homecare (M.I., available resources/materials, time/location)
- b. Nutrition/Diet (access to healthy foods)
- c. Keeping Appointments (transportation, anxiety, work, childcare, life...)



Treatment Plan:

3. Phase care

- a. IHS Levels of Care (clinical efficiency, community health and resource driven)
- b. Phase (multiple variations of what this looks like)



Treatment Plan:

3. Phase care

- a. IHS Levels of Care (clinical efficiency, community health and resource driven)

Dental Treatment Planning: The priority of dental treatment is an important element of the overall treatment plan. Emergency or acute disease obviously takes precedence over chronic conditions. However, **once the acute problems have been addressed, it is often difficult to establish a rank order of treatment priorities. Balancing chief complaints, chronic conditions, prosthetic needs, and clinic resources can challenge the dental provider's treatment planning skills.**

Indian Health Service Oral Health Program Guide - 2007

Oral Health Promotion
And Disease Prevention
Chapter 4-E-170



NORTHWEST PORTLAND AREA
INDIAN HEALTH BOARD
Indian Leadership for Indian Health

Treatment Plan:

3. Phase care

- a. IHS Levels of Care (clinical efficiency, community health and resource driven)

An important component of public health dentistry is access to care for all members of the eligible population who need and desire care. **Access to care issues in turn lead to the concept of levels of care to ensure that the greatest number of services can be provided for the greatest number of people with the resources that are available.** This is accomplished by directing resources first toward treating emergency conditions, then for preventing dental disease, then for providing routine dental care such as restorative treatment, and finally, if resources remain, for complex rehabilitative procedures.



Treatment Plan:

3. Phase care

- a. IHS Levels of Care (clinical efficiency, community health and resource driven)

Treatment planning and management of active carious lesions involves three steps:

1. Arresting the infectious disease process and preventing disease using a medical model (Preventive Regimen)
2. Completing restorations and/or extractions (Surgical Treatment)
3. Evaluating the outcome of the chosen preventive regimen and surgical treatment (Recall)

It is imperative that the prevention strategies based on risk assessment are initiated prior to completing restorations or extractions.All preventive services should be specifically described as part of the overall treatment plan.



Treatment Plan:

3. Phase care

a. IHS Levels of Care (clinical efficiency, community health and resource driven)

For individuals who qualify for the **periodontal disease treatment protocol**, i.e. diabetics with two or more sextants of CPITN score of 4 and evidence of inflammation/infection, the following treatment planning order of priority should be followed: Chapter 4-P-250 Oral Health Promotion 2007 And Disease Prevention Indian Health Service Oral Health Program Guide **1. Emergency Care (trauma, acute pain and infections, etc.) 2. Control of rampant caries and Imminent Pulpal Involvement 3. Initial Periodontal Therapy (full mouth treatment) 4. Restorative Treatment 5. Elective Surgical Treatment (3rd molars, perio, etc.) 6. Prosthetics 7. Other Higher Levels of Care**

Indian Health Service Oral Health Program Guide -2007
Oral Health Promotion And Disease Prevention
Chapter 4-E-170



Treatment Plan:

3. Phase care

- a. IHS Levels of Care (clinical efficiency, community health and resource driven)

Although it is easy for most dentist for focus solely on restorative needs of high and very high risk patients, necessary preventive regimens should not be ignored. **The need for restorative treatment should not overshadow the provision of preventive services, and in these patients they should be provided concurrently. Remember, the decision to do one thing is often a decision to not do something else, even if this decision is not consciously made. In our programs, decisions to provide extensive treatment frequently translate to the provision of services to one patient at the expense of access to care for another.**

Indian Health Service Oral Health Program Guide -2007
Oral Health Promotion And Disease Prevention
Chapter 4-E-171



Treatment Plan:

3. Phase care

a. IHS Levels of Care

Level I Emergency Oral Health Services

Level II Preventive Oral Health Services

Level III Basic Oral Health Services

Level IV Basic Rehabilitation Oral Health Services

Level V Complex Rehabilitation Oral Health Services

Level IX Exclusions

The majority of treatment needs in AI/AN communities falls within the first three levels, sometimes called “basic care,” which comprise the most cost-effective services to provide on a community-wide basis. As additional funds become available for dental care, the schedule can be used to expand access to care beyond basic services in an orderly, equitable, and cost-effective manner.



Treatment Plan:

3. Phase care

- a. IHS Levels of Care (community health, clinical efficiency and resource driven)
- b. Phase (multiple variations of what this looks like)



Treatment Plan:

3. Phase care

b. Phase (multiple variations of what this looks like)

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3467905/>

Urgent Phase
Control Phase
Re-Evaluation Phase
Definitive Phase
Maintenance Phase

<https://www.augusta.edu/dentaltable/>

Urgent/Diagnostic Phase
Disease Control Phase
Reassessment
Rehabilitation Phase
Maintenance

<https://www.twodentists.com/dental-treatment-plan-made-easy/>

Acute Phase
Prevention
Stabilisation Phase
Definitive Phase
Maintenance Phase



Treatment Plan:

Phase Care (multiple Resources)

<https://www.augusta.edu/dentaltable/>

- Urgent/Diagnostic Phase
- Disease Control Phase
- Reassessment
- Rehabilitation Phase
- Maintenance



**NORTHWEST PORTLAND AREA
INDIAN HEALTH BOARD**
Indian Leadership for Indian Health

	Treatment Planning	Phase 1 Urgent/Diagnostic	Phase 2 Disease Control Phase			Reassessment D0003	Phase 3 Rehabilitation Phase	Maintenance		
GOALS	Collect data. Develop Tx plan.	Answer key questions in Tx Plan. Address urgent problems.	Provide treatment to control disease, prepare patient for Phase 3. It should not leave the patient in a worse situation if treatment does not progress to Phase 3. <i>Treatment below generally can be done concurrently</i>			Determine if disease processes are controlled.	Provide restoration of form, function and esthetics. <i>Must be sequenced, generally from top to bottom below.</i>	Create plan that will maintain dental health.		
TREATMENT	1. Patient Exam	Medical consult Relieve pain	ORTHO	When used to prepare patient for restorative treatment			Tx goals met	ORTHO When Ortho is definitive care	Specify fixed or removable retention appliance; duration	
	Problem/Dx Tx Plan	Biopsy	ENDO	As required for pulpal or periapical pathosis			Symptoms resolved?	ENDO Prophylactic Tx for restorative reasons	Evaluation every 12 months	
	2. Diagnostic Review	Interim esthetic needs	PERIO (Mod to Severe Dx)	OHI: Scale and Root Plane quads as needed. <i>(4-6 wks healing)</i>	Perio Reeval: Re-chart PD, CAL; Eval OH: GI, PI; Eval for surgical Tx	Perio Corrective Phase: Any surgery necessary for disease control.	Rechart. Evaluate OH and pt compliance over time.	PERIO Perio Plastic Surg for esthetics; Adjunctive surg for Pros; ie. crown length, ridge augmentation for FPros	Specify care needed and recall interval: 3, 4, or 6 months	
	PHASE 1	ANSWER QUESTIONS ON WHICH TX PLAN HINGES:	SURGERY	Any oral surgery required for disease control or to prepare patient for restorative care in Phase 2, 3, including preprosthetic surgery. Place implants.			Tx goals met. Healing complete	FIXED PROS	Generally: 1. Max, Mand anteriors 2. Mandibular posterior 3. Maxillary posterior	For caries maintenance, Specify interval for: Radiographs and Fluoride
	3. Phase 3 Plan (tentative)	Determine restorability Perio evaluation D0180	CARIES (Mod to High Risk)	Pt Education -Diet counsel -Home FI -Xylitol -Office FI #1	Optional: Caries Control -Remove seeding lesions -Seal grooves, rough or open margins	-Complete definitive operative procedure -FI varnish every 3-6 mo	Re-do Caries Risk Assessment Tx PI Bd pts: Sequence with Pros Fac	REM PROS	Work with mentor on sequencing	Specify eval interval: 6-12 months for fit and stability. Reline as necessary.
ENDPOINT	TxPI Board	Determine implant feasibility Esthetic evaluation	Disease processes addressed by appropriate treatment and patient education. Treatment required prior to Phase 3 treatment is now completed. If patient compliance with disease control not adequate, this phase may be the final one for this patient.			D0003 -Disease controlled -Healing complete -Pt compliance adequate to expect control of disease	D0005 All treatment goals have been met.	No endpoint. Other follow-up: Risk assessment OS follow-up Path follow-up		

Treatment Plan:

1. Patient Acceptance
2. Patient Compliance
3. Phase care
4. Sequence
5. Materials



Treatment Plan:

4. Sequence

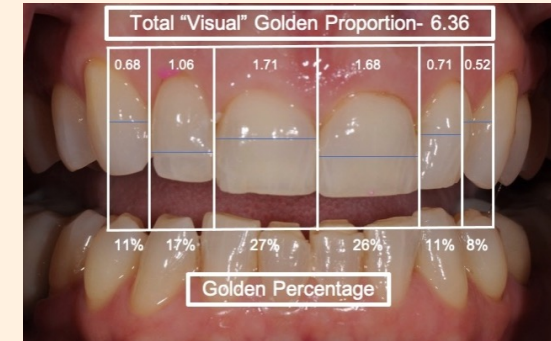


Treatment Plan:



4. Sequence

- Quadrant vs. Sextants
- Unilateral vs. Bilateral
- Upper vs. Lower Arch
- Anterior vs. Posterior



In your diagnostic phase, important to have working models and wax-ups to establish your plan. And to communicate the plan with the patient. Will assist in planning for maintaining occlusal schemes (VDO, group function/canine guidance, smile line, symmetry/golden proportion....)



Treatment Plan:

1. Patient Acceptance
2. Patient Compliance
3. Phase care
4. Sequence
5. **Materials**



4/28/2022 – 7 months later:



**White is fluoride varnish (not plaque)

Treatment Plan:

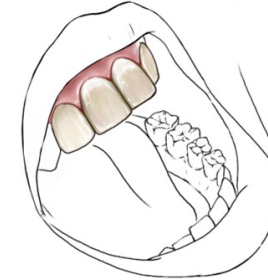
5. Materials

- Direct vs. Indirect
- Esthetics (masking the silver)
- Function
- Strength (bond, tensile, compressive, shear)
- My skillset
- ????

HOW TO

differentiate **Active vs. Arrested** caries lesions
by visual-tactile assessment of surface texture and topography.

ACTIVE non-cavitated lesions (*initial*)



- No surface breakdown, yet. Demineralization can go into the outer 1/3 of dentin.
- Usually plaque-covered (assess *before* cleaning).
- Can be white or yellow.
- Active facial / buccal lesions typically reach the gumline.
- On posterior teeth, chalky white or yellow areas extend out of the fissures.
- Chalky, no shine upon drying.
- Feels bumpy and soft when gently dragging the end of a blunt instrument across the lesion.
- Radiographs may show demineralization in the outer third of dentin, but without cavitation dentin is not infected.

ARRESTED non-cavitated lesions (*initial*)



- No surface breakdown.
- Usually plaque-free. (assess *before* cleaning).
- Can be white, brown, or black.
- Arrested facial / buccal lesions typically do not reach the gumline.
- On posterior teeth, no chalky white or yellow areas extending out of fissures. May have dark staining.
- Shiny upon drying.
- Feels smooth and hard when gently dragging the end of a blunt instrument across the lesion.

ACTIVE cavitated lesion (*moderate, advanced*)



- Easily visible cavitation. The hole breaches the dentin. Usually the demineralization reaches the middle or inner 1/3 of dentin.
- Usually plaque-covered (assess *before* cleaning).
- White, yellow, or light brown and often dull = bacterial growth.
- Feels soft or leathery when gently dragging the end of a blunt instrument across the lesion.

ARRESTED cavitated lesion (*moderate, advanced*)



- Cleansable lesions are much more likely to arrest than lesions with plaque traps.
- Easily visible cavitation. The hole breaches the dentin.
- Usually plaque-free. (assess *before* cleaning).
- Amber to dark brown or black and often shiny = no bacteria.
- Feels smooth and hard when gently dragging the end of a blunt instrument across the lesion.



Glass-ionomer cement restorative materials: a sticky subject?

S. Sidhu • Published 13 May 2011 • Medicine, Materials Science • Australian dental journal

Treatment Plan:

5. Materials

Class V Glass Ionomer Restorations



Treatment Plan:

The Evolution of Glass Ionomer Restorative Materials

12/02/2016 by Daniel H. Ward, DDS

5. Materials

- Advantages Of Glass Ionomers

Glass ionomer direct restorative materials are simpler to place in bulk and have reduced operator caused post-operative sensitivity than composite restorations. **1,2** The set material has a coefficient of thermal expansion which is similar to tooth structure. **3** Glass ionomers are antibacterial. **4** They are not as sensitive to variations in the moisture in the restorative area during placement as composite resins, and have a long-term stable bond to dentin which generally does not diminish over time. **5** Resin bonding to dentin has been shown to gradually diminish in time due to MMPs, hydrolyzation, polymerization shrinkage and other factors. **6,7,8** The biggest advantage of glass ionomers is their ability to release fluoride during an acidic attack and to uptake fluoride ions when present in the oral environment. **9**



Treatment Plan:

The Evolution of Glass Ionomer Restorative Materials

12/02/2016 by Daniel H. Ward, DDS

5. Materials

Class V Glass Ionomer Restorations



Treatment Plan:

The Evolution of Glass Ionomer Restorative Materials

12/02/2016 by Daniel H. Ward, DDS

5. Materials

Class II Glass Ionomer Restorations??



Treatment Plan:

5. Materials

The Evolution of Glass Ionomer Restorative Materials

12/02/2016 by Daniel H. Ward, DDS

Class II Restorations??



Treatment Plan:

5. Materials

[J Funct Biomater](#). 2016 Sep; 7(3): 16.

PMCID: PMC5040989

Published online 2016 Jun 28. doi: [10.3390/jfb7030016](#)

PMID: [27367737](#)

A Review of Glass-Ionomer Cements for Clinical Dentistry

[Sharanbir K. Sidhu](#)¹ and [John W. Nicholson](#)^{2,3,*}

James Kit-hon Tsoi, Academic Editor

[▶ Author information](#) ▶ [Article notes](#) ▶ [Copyright and License information](#) [Disclaimer](#)



[Figure 1](#)

Interfacial ion-exchange layer formed between tooth surface (above) and glass-ionomer cement (below). The circle indicates part of the ion-exchange layer.



NORTHWEST PORTLAND AREA
INDIAN HEALTH BOARD
Indian Leadership for Indian Health

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5040989/#B1-jfb-07-00016>

Management of High Caries Risk and High Caries Activity Patients: Rampant Caries Control Program (RCCP)

July 2007 · *Journal of Dental Education* 71(6):767-75

DOI: [10.1002/j.0022-0337.2007.71.6.tb04333.x](https://doi.org/10.1002/j.0022-0337.2007.71.6.tb04333.x)

Source · [PubMed](#)

Treatment Plan:

5. Materials

What about Class III and IV Restorations??



#9 MIFL?



NORTHWEST PORTLAND AREA
INDIAN HEALTH BOARD
Indian Leadership for Indian Health

https://www.researchgate.net/publication/6282909_Management_of_High_Caries_Risk_and_High_Caries_Activity_Patients_Rampant_Caries_Control_Program_RCCP

Treatment Plan:

5. Materials

The main limitation of the glass ionomer cements is their relative lack of strength and low resistance to abrasion and wear. Conventional glass ionomer cements have low flexural strength but high modulus of elasticity, therefore very brittle and prone to bulk fracture. Their strength properties are inferior to those of composite-resins, and so should not be subject to undue occlusal load unless they are well supported by surrounding tooth structure.

A Review of Glass Ionomer Restorations in the Primary Dentition

- Shiu-yin Cho, BDS, MDS •
- Ansgar C. Cheng, BDS, MS •

Abstract

Glass ionomer cements are tooth-coloured materials that bond chemically to dental hard tissues and release fluoride for a relatively long period. They have therefore been suggested as the materials of choice for the restoration of carious primary teeth. However, the clinical performance of conventional and metal-reinforced glass ionomer restorations in primary molars is disappointing. And although the handling and physical properties of the resin-modified materials are better than their predecessors, more clinical studies are required to confirm their efficacy in the restoration of primary molars.

MeSH Key Words: dental restoration, permanent/methods; dentition, primary; glass ionomer cements.

© J Can Dent Assoc 1999; 65:491-5
This article has been peer reviewed.



Treatment Plan:

5. Materials

Special Issues
March 2021
Volume 42, Issue 3



Compendium
of Continuing Education in Dentistry

Long-Term Performance of Glass-Hybrid Restorations in Permanent Posterior Teeth

Mark L. Pitel, DMD

A third generation of EQUIA, which possesses higher levels of translucency and even higher physical properties, was released in 2019. EQUIA Forte® HT is expected to perform even better clinically than earlier generations while yielding superior esthetics.

<https://www.aegisdentalnetwork.com/cced/special-issues/2021/03/long-term-performance-of-glass-hybrid-restorations-in-permanent-posterior-teeth>



**NORTHWEST PORTLAND AREA
INDIAN HEALTH BOARD**
Indian Leadership for Indian Health

Survival estimates of atraumatic restorative treatment versus traditional restorative treatment: a systematic review with meta-analyses

Jo E Frencken ¹, Shanshan Liang ², Qian Zhang ³

Affiliations + expand

PMID: 33883705 DOI: 10.1038/s41415-021-2701-0

Conclusion The ART method using HVGICs can be considered as a replacement for traditional restorations in single- and multiple-surface cavities in primary molars, and in single-surface cavities in posterior permanent teeth, particularly for amalgam.

<https://pubmed.ncbi.nlm.nih.gov/33883705/>

Treatment Plan:

5. Materials



DENTISTRY > PRODUCTS

The glass ionomer crown: A case report

When this patient's direct glass ionomer restoration failed, he refused all traditional restorative therapies and any preparation of his remaining tooth structure. In this article, Pamela Maragliano-Muniz, DMD, and Brian Nový, DDS, share the details of his treatment.

Feb. 20, 2017



NORTHWEST PORTLAND AREA
INDIAN HEALTH BOARD
Indian Leadership for Indian Health

<https://www.dentistryiq.com/dentistry/products/article/16366453/the-glass-ionomer-crown-a-case-report>

Treatment Plan:

5. Materials

OPERATIVE DENTISTRY

ABOUT ISSUES ONLINE EARLY SUBSCRIBE FOR AUTHORS HELP

Volume 45, Issue 1
January/February 2020



LITERATURE REVIEW | JANUARY 01 2020

Properties of New Glass-Ionomer Restorative Systems Marketed for Stress-Bearing Areas

D Fuhrmann; D Murchison; S Whipple; K Vandewalle

Oper Dent (2020) 45 (1): 104–110.

<https://doi.org/10.2341/18-176-L> Article history

Results:

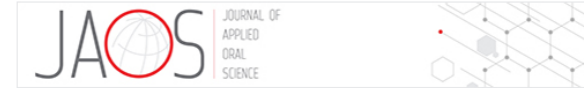
The composite-resin restorative materials had significantly greater fracture toughness than the glass-ionomer materials.

There was no significant difference in fracture toughness between the glass-ionomer materials. The use of a resin coating significantly increased the surface hardness of the newer glass ionomer marketed for stress-bearing areas.

<https://meridian.allenpress.com/operative-dentistry/article/45/1/104/432835/Properties-of-New-Glass-Ionomer-Restorative>



NORTHWEST PORTLAND AREA
INDIAN HEALTH BOARD
Indian Leadership for Indian Health



J Appl Oral Sci. 2019; 27: e20180678.

Published online 2019 Oct 7. doi: [10.1590/1678-7757-2018-0678](https://doi.org/10.1590/1678-7757-2018-0678)

PMCID: PMC6768121

PMID: [31596369](https://pubmed.ncbi.nlm.nih.gov/31596369/)

A randomized, prospective clinical study evaluating effectiveness of a bulk-fill composite resin, a conventional composite resin and a reinforced glass ionomer in Class II cavities: one-year results

Hacer Balkaya,¹ Soley Arslan,¹ and Kanşad Pala¹

Results:

At the end of one year, 103 restorations were followed up. No changes were observed during the first 6 months. At the end of one year, there were small changes in composite restorations (FBF and CSC) but no statistically significant difference was observed between the clinical performances of these materials for all criteria ($p > 0.05$). However, there was a statistically significant difference between EF, FBF and CSC groups in all parameters except marginal discoloration, secondary caries and postoperative sensitivity in one-year evaluation ($p < 0.05$).

Conclusion:

Bulk-fill composite resins and conventional composite resins showed more successful clinical performance than highly viscous reinforced glass ionomers in Class II cavities.

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6768121/>

Treatment Plan:

5. Materials

And our case??



Treatment Plan:

5. Materials And our case??

Case Report

Secondary Sjögren syndrome

A case report using silver diamine fluoride and glass ionomer cement

Douglas A. Young, DDS, EdD, MBA, MS; Annikka Frostad-Thomas, DDS;
Jaana Gold, DDS, MPH, PhD, CPH; Allen Wong, DDS, EdD, DABSCD

December 2017: 12 Months After Restoration Placement: None of the GIC restorations failed. However, tooth no. 30 became nonvital and required endodontic treatment.

Read this article for the step-by-step approach on how to provide these restorations.

[https://jada.ada.org/article/S0002-8177\(18\)30201-0/pdf](https://jada.ada.org/article/S0002-8177(18)30201-0/pdf)

<https://pubmed.ncbi.nlm.nih.gov/29805040/>



Treatment Plan:

5. Materials And our case??

In summary, we thought the chosen treatment plan presented the best solution for this case. Without the use of chemotherapeutic interventions indicated for patients with xerostomia and extreme caries risk and the use of SDF to arrest the carious lesion progression, most of the lesions likely would have progressed before they all could be restored surgically. Alternatively, the patient's treatment plan could have included costly treatment under sedation or general anesthesia in a hospital setting.

Complete caries removal without caries arrest would have led to multiple pulp exposures and extractions. Resin-based dental materials that require freshly cut, caries-free dentin for maximum micromechanical retention or more aggressive full crown coverage also would have resulted in multiple endodontic procedures and extractions. Endodontic treatment on teeth surgically prepared to the gingival border is unwise and would require more costly implants or removable appliances.

Case Report

Secondary Sjögren syndrome

A case report using silver diamine fluoride and glass ionomer cement

Douglas A. Young, DDS, EdD, MBA, MS; Annikka Frostad-Thomas, DDS; Jaana Gold, DDS, MPH, PhD, CPH; Allen Wong, DDS, EdD, DABSCD



Treatment Plan:

5. Materials



Anterior Restorations:

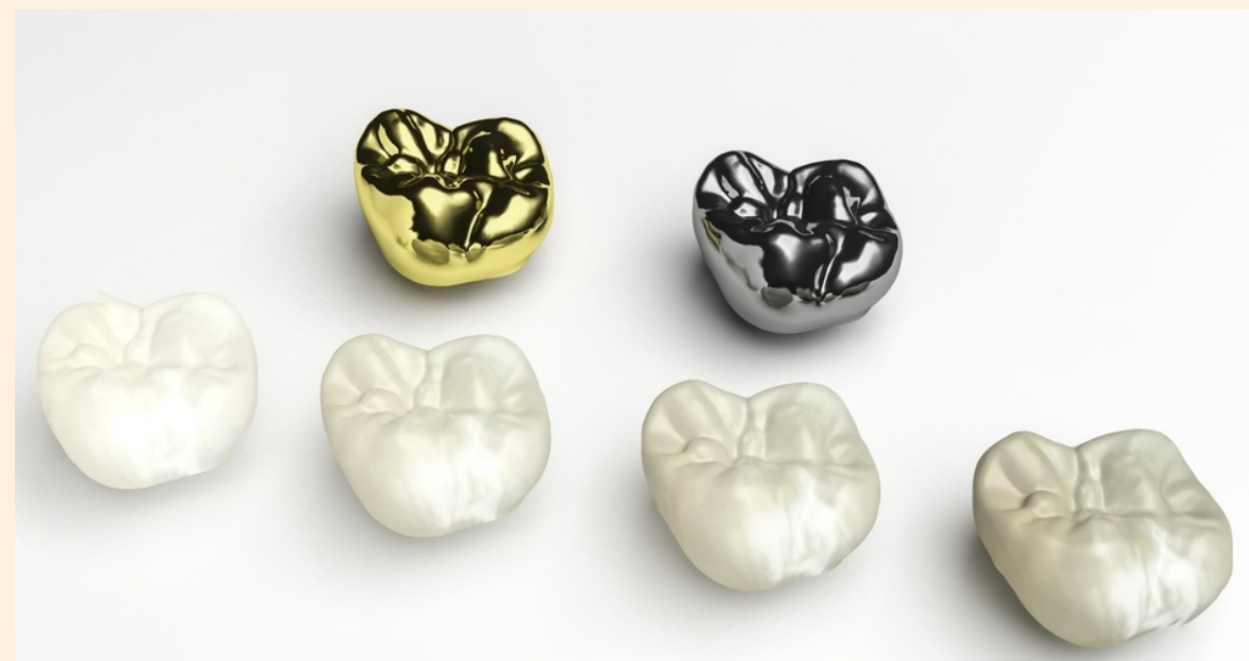
To mask the silver stain will need to use opaquer, whether using for a direct composite restorations or all-ceramic crowns. Not a factor if decide on PFM crowns. Might be able to get away with using the opacity of a GI to mask the discoloration.



Treatment Plan:

5. Materials

If placing crowns, which type?



NORTHWEST PORTLAND AREA
INDIAN HEALTH BOARD
Indian Leadership for Indian Health

Treatment Plan:

5. Materials

Which is the crown?

Published: 13 September 2008

The anterior all-ceramic crown: a rationale for the choice of ceramic and cement

B. Mizrahi 

British Dental Journal **205**, 251–255 (2008) | [Cite this article](#)



NORTHWEST PORTLAND AREA
INDIAN HEALTH BOARD
Indian Leadership for Indian Health

<https://www.nature.com/articles/sj.bdj.2008.735>

Treatment Plan:

5. Materials

If placing all-ceramic crowns, consider using a resin modified/reinforced GI cement like 3M™ RelyX™ Luting Cement or GC FujiCEM Evolve Cement. Unless you need a resin bonding system for low strength, etchable, class-based ceramics like IPS Empress and IPS Emax.



Group Discussion and Q & A



**NORTHWEST PORTLAND AREA
INDIAN HEALTH BOARD**
Indian Leadership for Indian Health

Questions?



**NORTHWEST PORTLAND AREA
INDIAN HEALTH BOARD**
Indian Leadership for Indian Health

Dr. Sean Kelly: drkelly55@gmail.com

Dr. Miranda Davis: mdavis@npaihb.org

Thank You!



**NORTHWEST PORTLAND AREA
INDIAN HEALTH BOARD**
Indian Leadership for Indian Health