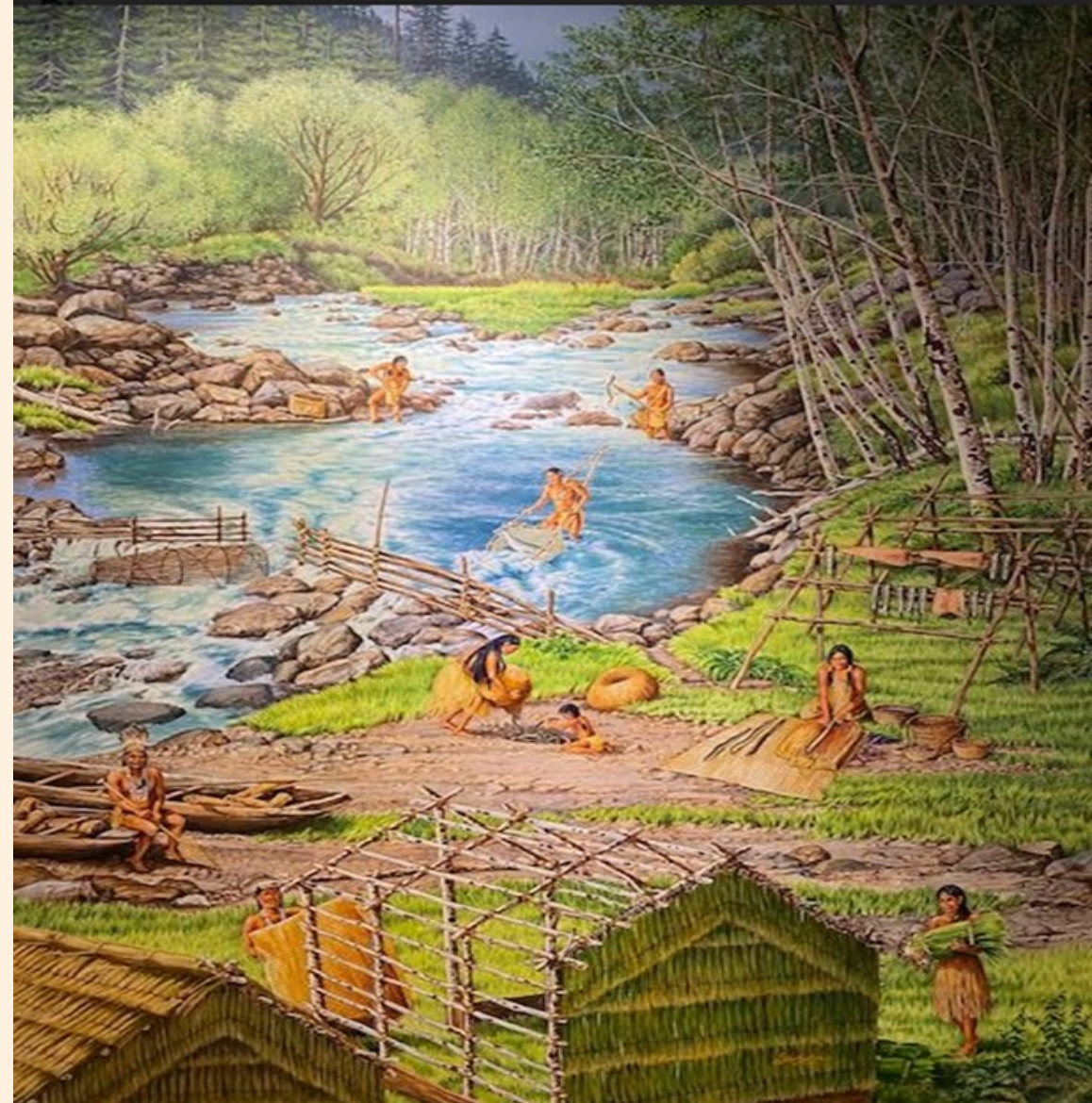


Indian Country Oral Health ECHO: Minimally Invasive Dentistry and Case Presentation

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.”



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DISCLAIMER:

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



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Indian Country Oral Health ECHO:

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NTDSC
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Manager



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NTDSC
Project Director



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Area Dental Consultant



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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.



Outline:

1. Case Presentation (Review)
2. Didactic Presentation
3. Group Discussion, Breakout Groups 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/>



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> 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.

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Case Presentation



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A Management Case of an Adult High Caries Risk Patient

Indian Country Oral Health
ECHO

Provided by:
Mikkell Bowens, DDS
Grand Ronde Dental Clinic



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Background information:

- Patient is a 18 year old male, Grand Ronde Tribal Member
- A home-schooled high school student, likes to play basketball, and recently received learner's permit to drive
- Primary concern is generalized sensitivity, pain in the anteriors
- Medical Hx: Augmentin allergy, no current medications
- Family history: Unknown



Background information (continued):

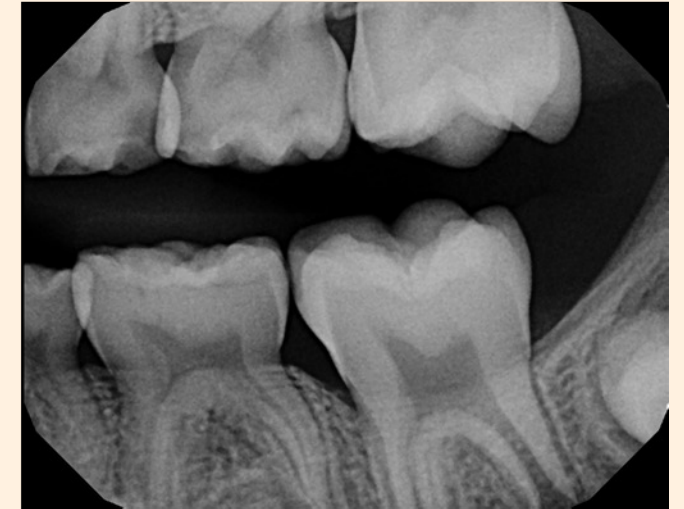
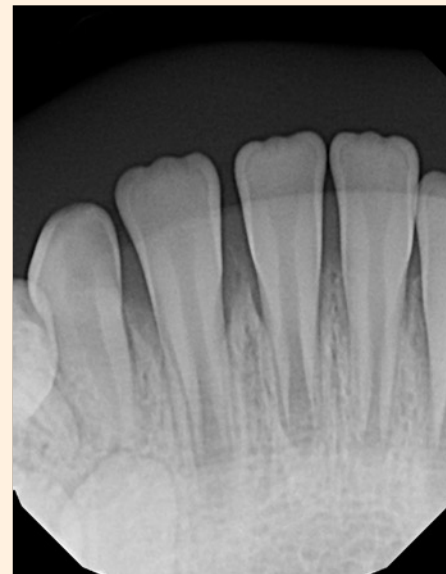
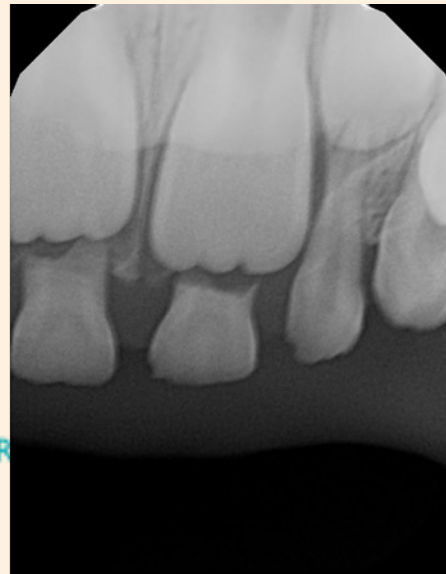
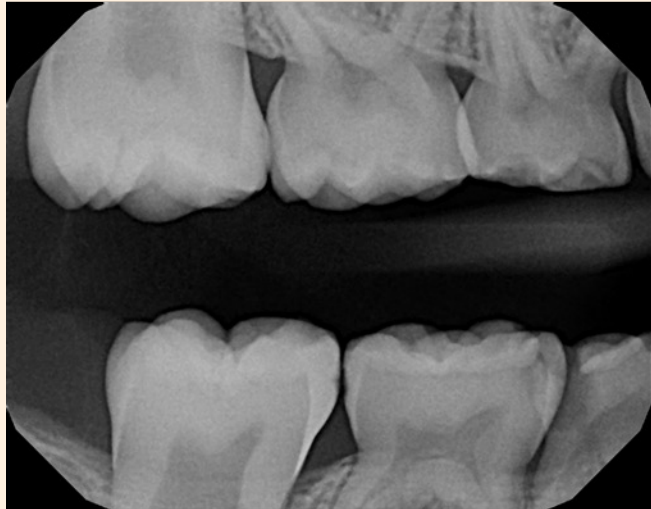
- Patient restorative treatment began in 2016 but never finished
- SDF treatment in 2021
- Patient Goals. Initial: to relieve sensitivity. Current: to reduce black appearance of his teeth
- Additional Information: Poor dietary habits, poor oral hygiene, limited access to care mainly due to mother's severe dental anxiety, thus not following through with dental care



Dental History:

2011:

- Exam completed at 6 years old
- Multiple caries and lots of plaque
- OHI was provided to patient mother and the notes state the “mother did not seem terribly concerned about many caries”
- Prescription provided for fluoride tablets



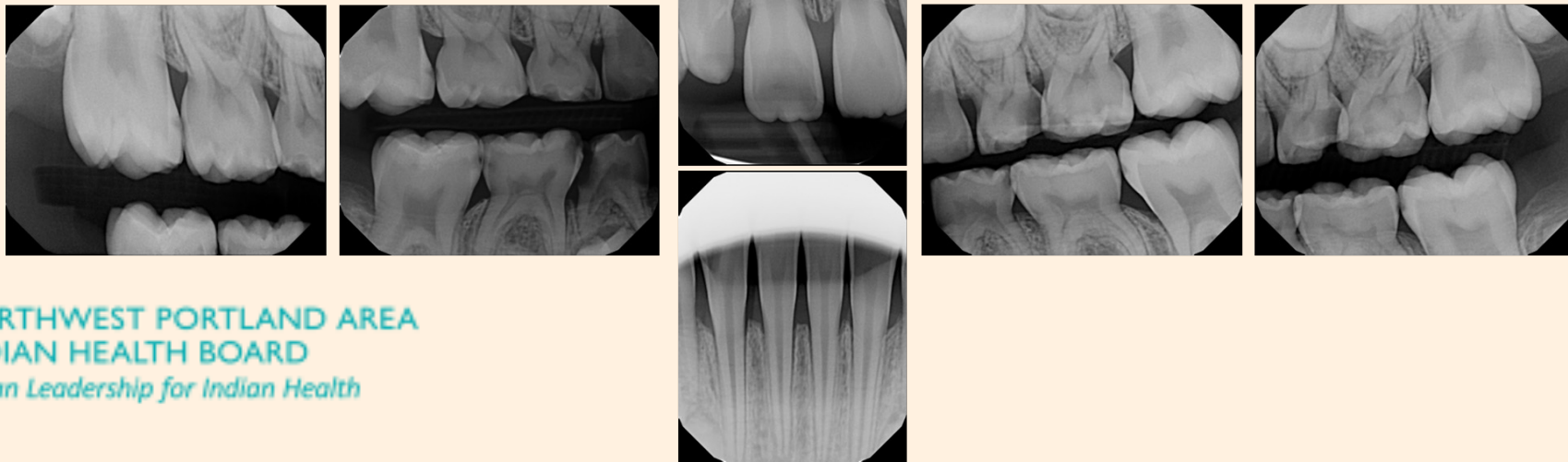
Dental History:

2012 – 6 months later:

- New exam completed where Nutrition counsel and OHI were provided as patient stated he drinks a lot of pop
- Multiple broken appointments following this exam

2012 – 4 months later:

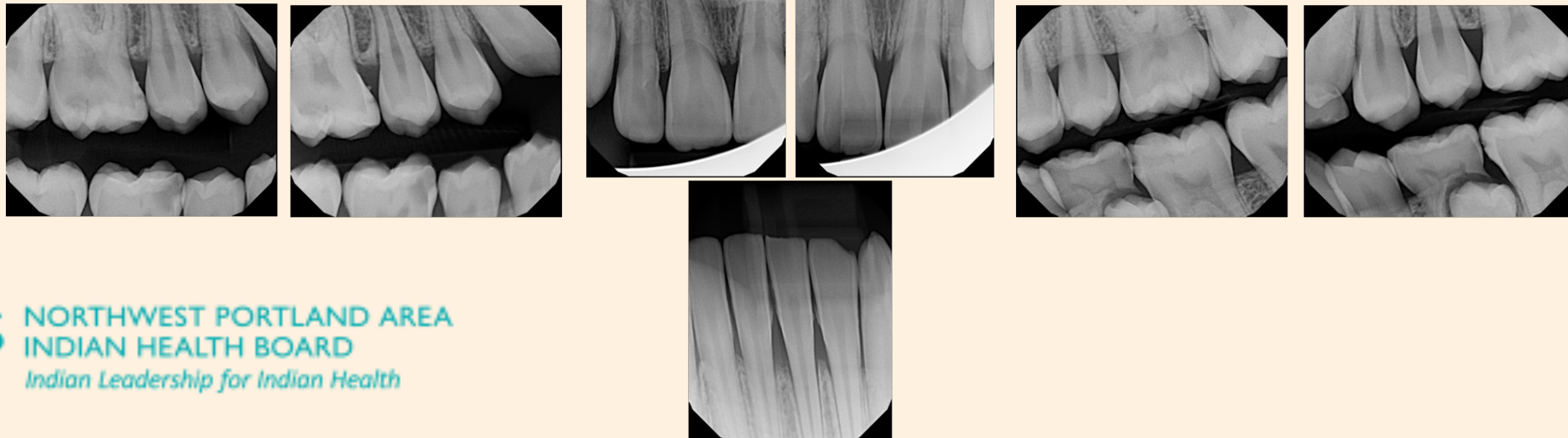
- Another broken appointment and patient's dad stated they were trying to find a dentist closer to their home and that the patient is in pain



Dental History:

2016 (4 years later) – 10 years old:

- Exam completed
- Full mouth debridement completed
- Nutrition counsel provided to patient's grandma discussing the need to decrease apple juice consumption
- Restorative treatment began on large lesions and included a direct pulp cap on #3 and selective caries removal on #30 to avoid a pulp exposure



Dental Findings:

2021 (5 years later) – 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

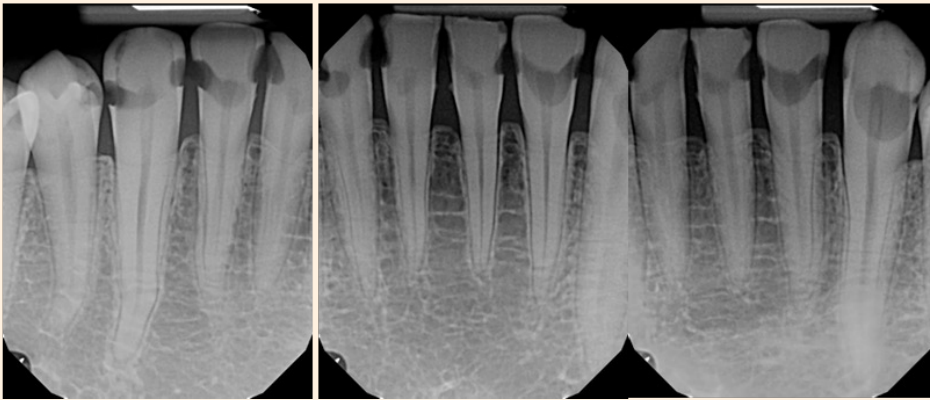
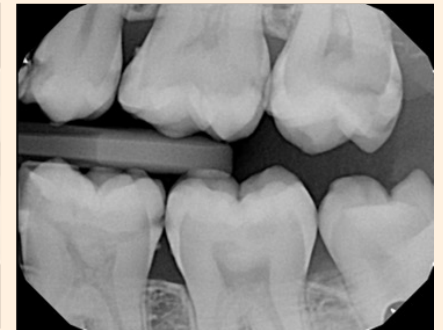
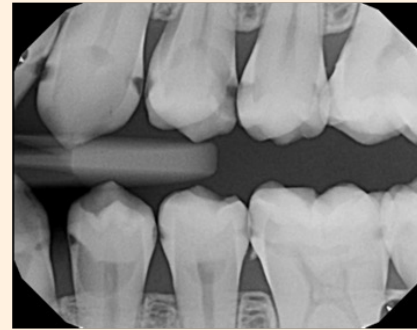
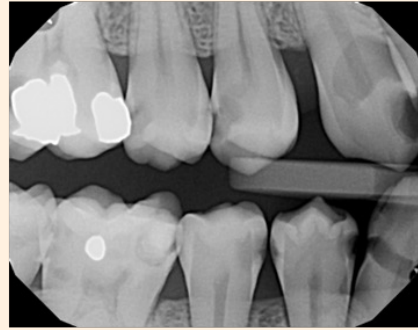
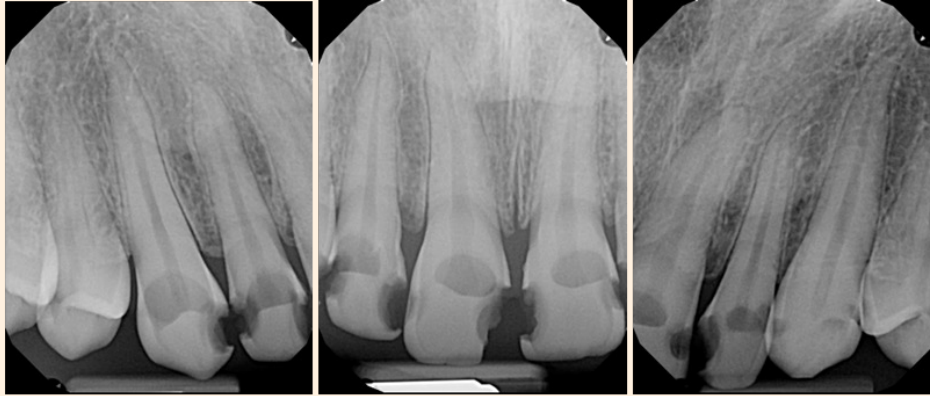
- Side note: Patient's mother has severe dental anxiety (barrier to care for patient?)



Dental Findings: Panoramic



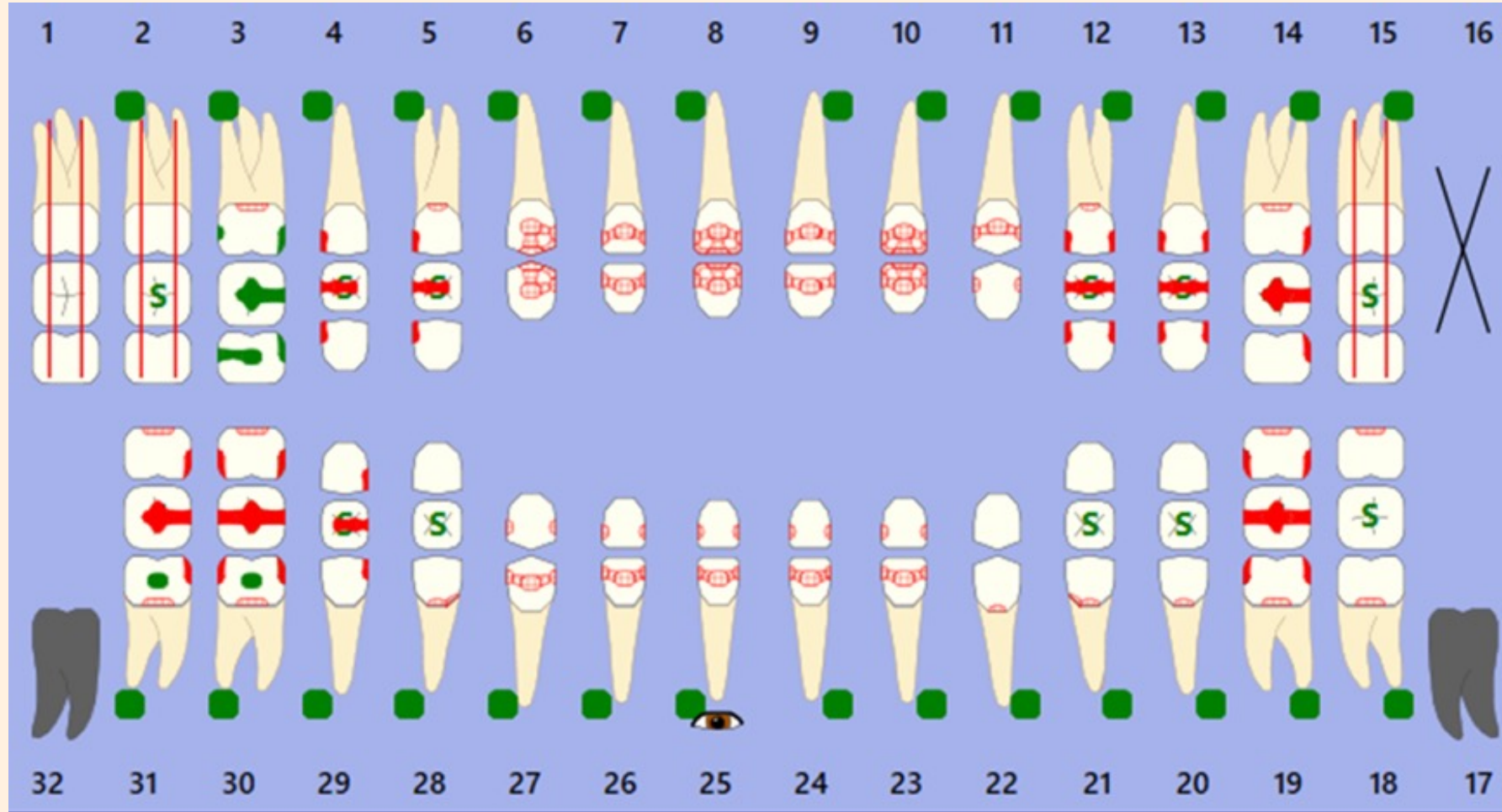
Dental Findings: IO radiographs



Dental Findings: 10 Photos



Dental Findings: Odontogram



Fluoride Treatment:

SDF and fluoride varnish applied:

- 8/26/2021 – Comprehensive exam
- 9/1/2021 – Patient states sensitivity is getting better and he has been brushing better.
- SDF is arresting caries and teeth are noticeably darker in the carious lesion areas
- 9/7/2021 – “My teeth aren’t so sensitive anymore.” Less plaque today than prior visits
- 9/29/2021 – Dentition re-evaluated for Glass Ionomer and/or Amalgam restorations



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)



4/28/2022 – 7 months later:



**White is fluoride varnish (not plaque)

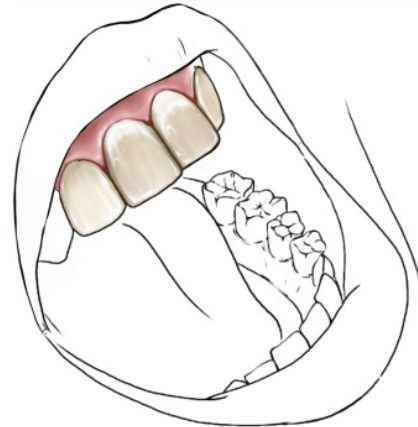
Differentiate Active vs. Arrested

Caries:

HOW TO

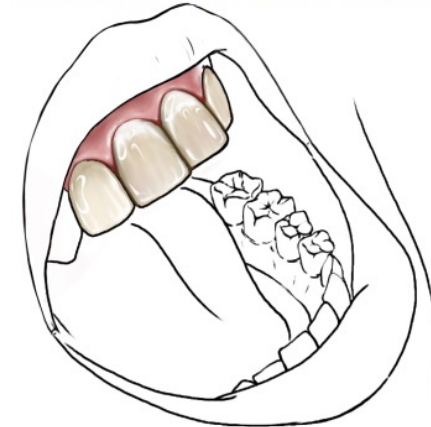
differentiate **Active vs. Arrested** caries lesions by visual-tactile assessment of surface texture and topography.

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.



Didactic Presentation



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Connection

How do we relate with our patients?



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Young Patients

- High caries rates
- Poor oral hygiene
- Missed appointments
- Patient doesn't talk
- How do we get through?



Creating an environment of trust

Relatability!

- **Ask patient their dental history**
 - Previous dental encounter experiences -
- **Include the patient**
 - Ask them what they want to gain from this appointment
- **Understand their barriers**
 - Before berating for poor oral hygiene or missed appointments
- **Authenticity**
 - Be human, be genuine, be caring
- **Wit & Humor**



Empowerment

- Motivate with history
- Show them their potential
- Provide hope



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Oral health of the early American Indians and Alaska Natives



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The Teeth of Early Native Americans

Between 1830-1836—an American artist -George Catlin- traveled west of the Mississippi to paint portraits of American Indians

What do you think he found?



“Stu-mick-o-suchs (Buffalo Bull’s Back Fat)”
Chief of the Blackfoot Tribe



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The Teeth of Early Native Americans

Catlin was struck by the beauty of their teeth:

“These people, who talk little and sleep naturally, have no dentists- their teeth rise from the gums and arrange themselves as regular as the keys of a piano- No decay or aches, strong enamel and jaws”



“Shon-ta-yi-ga, Little Wolf,
a Famous Warrior.”
Painting by George Catlin, 1844



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The Teeth of Early Native Americans

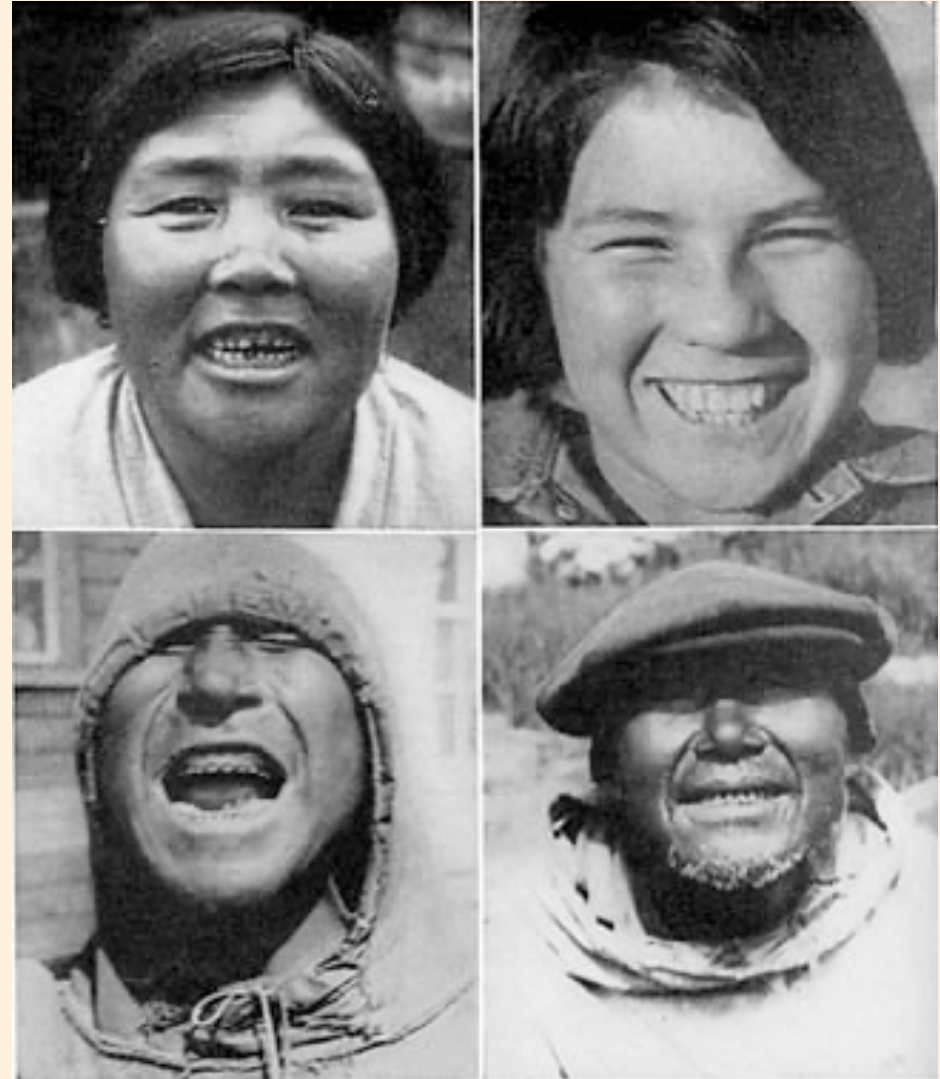
- In 1933, Weston Price, a Canadian dentist, set out to locate primitive native people in America who might shed light on the health and nutrition of their ancestors.
- What he found was an almost complete absence of tooth decay and dental deformities among Native Americans who lived as their ancestors did.



A Navajo. Many early explorers and settlers commented on the superb bone structure of the native Americans.

The Teeth of Early Native Americans

- In 1933 Price also studied the Alaska Natives who lived only on native foods
- What do you think he found?



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Price, W. (1939). Nutrition and Physical Degeneration. Project Gutenberg Australia (2002).
<https://gutenberg.net.au/ebooks02/0200251h.html>

The Teeth of Early Native Americans



Strong, rugged mothers and their babies with no dental decay

(Price, 1933)

What do you think the Alaska Natives ate?



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Traditional Native American Diets

Alaska Natives :

- Caribou
- Ground nuts (gathered by mice)
- Kelp (gathered in season and stored for winter use)
- Berries
- Blossoms of flowers preserved in seal oil
- Sorrel grass preserved in seal oil
- Fish
- Organs of the large animals of the sea
- Whale skin



- What did your ancestors eat?



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What did the Northwest Natives eat?



- Berries, fish, and mammals with some herbs, birds, and shellfish
- Native plants like quamash (also known as camas) used for flavor, nutrition and additional health benefits like healing



<https://www.blendspace.com/lessons/T-xa0AkrT4wDHg/native-americans-of-the-pacific-northwest>



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PLANTS

acorn • mountain ash • bearberry • bedstraw • biscuit root • wild blackberry • bladderwrack • blueberry • bulrush
camas • candy flower • wild carrot • cattail • bitter cherry • chokecherry • wild cherry • chickweed • clover • pacific crabapple • cranberry
currant • golden currant • dandelion • dogwood • elderberry • bracken fern • lady fern • licorice fern • ostrich fern • spiny wood fern • douglas fir
gooseberry • goosefoot • grape • hackberry • hazelnut • western hemlock • horsetail • huckleberry • bullwhip kelp • kinnikinnick • knotweed • lamb's quarters
legume • miner's lettuce • lily root • mustard • nettle • nightshade • hooker's onion • nodding onion • wild onion • nori • nutmeat • indian plum • purslane
blackcap raspberry • raspberry • wild rose • salal • salmonberry • seablite • seaweed • serviceberry • soapberry • spruce • coastal strawberry
wild strawberry • woodland strawberry • thimbleberry • vetch • violet • wapato • watercress

BIRDS

albatross • alcid • bufflehead • canvasback • american coot • cormorant • american crow • dove • ruddy duck • bald eagle
barrow's goldeneye • common goldeneye • canada goose • eared grebe • horned grebe • pied-billed grebe • western grebe • blue grouse
ruffed grouse • gull • harrier • hawk • great blue heron • belted kingfisher • common loon • pacific loon • red-throated loon • yellow-billed loon
mallard • common merganser • red-breasted merganser • common murre • marbled murrelet • owl • pelican • pigeon • northern pintail
tufted puffin • california quail • rail • sandpiper • lesser scaup • black scoter • surf scoter • white-winged scoter • shearwater
trumpeter swan • tundra swan • wild turkey • turkey vulture • american wigeon • pileated woodpecker

MAMMALS

black bear • american beaver • bobcat • townsend's chipmunk • cougar • coyote • deer • pocket gopher • snowshoe hare • eastern cottontail
canada lynx • mink • coast mole • moose • deer mouse • mountain beaver • muskrat • north american river otter • dall's porpoise • raccoon • rat • eared seal
hair seal • harbor seal • striped skunk • squirrel • meadow vole • steller sea lion • southern red-backed vole • wapiti • weasel • whale • grey wolf

FISH & REPTILES

northern anchovy • candlenfish • codfish • pacific cod • spiny dogfish • wolf eel • flatfish • lefteye flounder • righteye flounder
starry flounder • greenling • pacific hake • pacific halibut • pacific herring • alaska jingle • lingcod • red irish lord • plainfin midshipman
northern pike minnow • peamouth • pile perch • shiner perch • poacher • walleye pollock • spotted ratfish • ray • rockfish • sablefish • chinook salmon
chum salmon • coho salmon • pink salmon • sockeye salmon • pacific sanddab • scorpionfish • buffalo sculpin • great sculpin • pacific sculpin
staghorn sculpin • roughback sculpin • blue seaperch • striped seaperch • surfperch • shark • skate • smelt • c-o sole • curlfin sole • dover sole
english sole • rock sole • sturgeon • largescale sucker • pacific tomcod • trout • western pond turtle • mountain whitefish

SHELLFISH & OTHER MARINE LIFE

acorn barnacle • gooseneck barnacle • thatched barnacle • gumboot chiton • bent-nose clam • butter clam • california butter clam
gaper clam • inconspicuous macoma clam • littleneck clam • pacific coast clam • sand clam • softshell clam • venus clam • basket cockle
alaskan king crab • dungeness crab • dogwhelk • channeled dogwinkle • emarginate dogwinkle • frilled dogwinkle • oyster drill • geoduck • limpet
blue mussel • california mussel • olympia oyster • pacific octopus • checkered periwinkle • sitka periwinkle • sand dollar • giant pacific scallop
hind's scallop • pink scallop • rock scallop • moon snail • rock snail • sea snails • serpulid worm • pink shrimp • sidestripe shrimp • spot shrimp
hooked slipper shell • wrinkled slipper shell • sea urchin • vitrinella • dire whelk • purple whelk • short-spined whelk • wrinkled purple whelk

Traditional Coast Salish Foods

Over 300 food sources. How many different kinds of food do you think you eat on a regular basis?

Presently -Americans eat less than 12 different foods on a regular basis (Krohn, E. n.d.)

What does food have to do with dentistry?

- When the AI/AN were removed from their homelands and forced onto reservations
 - Traditional foods were removed
 - Few natural resources
 - Limited food growing option
 - Traditional food sources were replaced with foods containing refined carbohydrates



<https://1krecipes.com/indian-frybread/2/>



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Effects of Colonization on Health

When traditional foods were replaced with processed store-bought foods health deteriorated rapidly:

- Rampant tooth decay
- Tuberculosis
- Crippling arthritis



Breakout Groups & Discussion



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Breakout Groups & Discussion

Breakout groups

- Participants into 4 different zoom break-out rooms
- Appoint a group member to report out on the discussion

Questions:

1. What's the most important thing you learned today?
2. How will you use what you learned today to enhance your ability to care for patients?



Questions?



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Next Indian Country Oral Health ECHO:

-November 9th

-Materials and Interim /
Definitive Treatment



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Thank You!



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