Talking with your Patients about Safe Drinking Water, Community Water Fluoridation and Oral Health in the Pediatric Patient

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Housekeeping Items

- All attendees are muted and attendees cannot share video during this session.
- Remember to ask questions using the chat box.
- Slides and resources for today’s session can be accessed on our program website.
- Continuing education credits are available for today’s session. To receive a certificate for continuing education, you must complete the evaluation.
- We have made every attempt to make today’s presentation secure. If we need to end today’s presentation unexpectedly we will follow-up with you using your registration information.
Land Acknowledgement Statement

**UND Land Acknowledgement Statement**: Today, the University of North Dakota rests on the ancestral lands of the Pembina and Red Lake Bands of Ojibwe and the Dakota Oyate - presently existing as composite parts of the Red Lake, Turtle Mountain, White Earth Bands, and the Dakota Tribes of Minnesota and North Dakota. We acknowledge the people who resided here for generations and recognize that the spirit of the Ojibwe and Oyate people permeates this land. As a university community, we will continue to build upon our relations with the First Nations of the State of North Dakota - the Mandan, Hidatsa, and Arikara Nation, Sisseton-Wahpeton Oyate Nation, Spirit Lake Nation, Standing Rock Sioux Tribe, and Turtle Mountain Band of Chippewa Indians.

Objectives for Today

- Attendees will be able to describe the benefits of CWF and Safe Drinking Water
- Attendees will learn, understand, and be able to share with their patients the importance of oral health and fluoride in pediatric patients
- Attendees will be able to address the status of CWF in ND
The Benefits of Safe Drinking Water

**Bottled Water: Concerns**

- Regulated by FDA - Food
- Doesn’t have strict controls which are applied to tap water
- Precautions by EPA¹: 
  
  Some people may wish to take special precautions with the water they drink. In particular, people with immune systems that are weakened by AIDS, chemotherapy or transplant medications are more vulnerable to microbial contaminants in drinking water such as *Cryptosporidium*² *

¹. Source: Accessed May 1, 2021 [Water Health Series Bottled Water Basics (epa.gov)]
². Pregnant mothers

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The Benefits of Safe Drinking Water

**Bottled Water: Concerns**

- Distrust of tap water
- Perceived as more pure than tap
- Estimated by 2055 there will be more plastic bottles in oceans than fish
- Landfill nightmare
- No requirement to list background fluoride content – range from ND – double that in CWF¹
- **Mold – Kroger recall²**

¹. Source: Accessed May 1, 2021 Information available by calling manufacturer or searching on website International Bottled Water Association [Bottled Water](https://www.bottledwater.org)
The Benefits of Safe Drinking Water

**Tap Water**

- Purest water available on planet – U.S.
- Undergoes strict testing requirement of the EPA
- Constantly monitored for impurities (contaminants)
- Hesitancy to use, especially among immigrants whose tap water was not clean – were encouraged to drink bottled water

Fluoride: A Naturally Occurring Mineral

- 13th most abundant mineral in the earth’s crust
- **Surface water** (rivers) — typically low concentrations, 0.2 mg/L (ppm) or less
- **Groundwater** (wells) — higher concentrations, 0.1 mg/L to over 5.0 mg/L
- **Ocean** is typically 0.8 to 1.4 mg/L
The Benefits of Community Water Fluoridation

Dr. Frederick S. McKay

• **1901**: He established his dental practice in Colorado Springs, CO
• “Colorado Brown Stain” — Only life-long residents (or those who had moved there as infants) had it
• **1908** – He began to investigate the extent of fluorosis in surrounding areas

*Key Observation*: Very few cavities in this population


The Benefits of Community Water Fluoridation

Objective: Explore the link between fluoride & cavity reduction

1.0 mg/L fluoride led to optimal cavity reductions without brown staining

*H. Trendley Dean*

- **1931**: begins to study epid. of F-
- Improves technology of assay
- Creates and index
- **1933**: Compares “High” and “Low” F-communities.
- **1939**: Compares “high” and “low” F-communities.
- **1941**: Launches field investigation — 21 Cities’ study.
Mother Nature was Replicated

- 4 pairs of cities in the U.S. and Canada were identified to study the effect of water fluoridation
  - 4 cities adjusted to 1.0 mg/L of F, and 4 remained non-fluoridated
- Grand Rapids, Mich. was the first city to adjust fluoride levels in public drinking water (1945)
  - Muskegon, MI was the control city
- Cavity rates dropped dramatically: 60-70%


Oral Health, Community Water Fluoridation and the Pediatric Patient

Dental cavities are the most common chronic disease for children and teens. It’s significantly more common than asthma, obesity, and diabetes. Infectious and Transmissible

- Severe pain (toothaches)
- Difficulty in chewing
- Poor weight gain
- Difficulty concentrating
- Predictor of cavities later in life
- Costly to treat
- Deaths

[Image of children with healthy and unhealthy teeth]
Oral Health, Community Water Fluoridation and the Pediatric Patient

Oral Health – Systemic Health Implications

- Facial Cellulitis
- Systemic infection – Septicemia, brain abscess
- Diabetes – Strong evidence exists for a causal link between periodontal disease
- Obesity
- Coronary artery disease
- Metabolic syndrome
- Pregnancy outcomes/Preterm labor
- Oral health after menopause
- Rheumatoid Arthritis

(Source: Smiles for Life curriculum; "The Relationship of Oral and Systemic Health")

Is Water Fluoridation Still Necessary?

ABSOLUTELY!!

✓ Effect of Starting Community Water Fluoridation: 25% cavity reductions in adults and children

(Source: https://www.cdc.gov/fluoridation/basics/index.htm)
Oral Health, **Community Water Fluoridation and the Pediatric Patient**

**Recent research confirms CWF's benefits**

• Imagine a third-grade classroom of 30 children in a fluoridated community.

• These children would have **39 fewer** decayed tooth surfaces in their primary teeth than would the same number of third-graders in a community *without* fluoridation.


**Oral Health, Community Water Fluoridation and the Pediatric Patient**

Major cavity increases after cessation:

• **Juneau, Alaska** – Dental disease among preschool-age kids increased, requiring an average of 1 additional dental procedure *per child, per year*

• **Calgary (Canada)** – Cavity rates among children skyrocketed 146% in 3 years

• **Windsor (Canada)** – Cavity rates increased 51% in a 5-year period

*Sources: J. Meyer et al., BMC Oral Health, 2018, 18:215; L. McLaren et al., Community Dentistry and Oral Epidemiology, 2016; Windsor’s oral health data was referenced in a story by Brian Eppe in the Windsor Star, December 18, 2018*
Oral Health, Community Water Fluoridation and the Pediatric Patient

After fluoridation ended in Alaska’s capital city, the average low-income child needed **1 additional procedure each year** to treat tooth decay.

1 more cavity

By Age 3

2 more cavities

By Age 4

3 more cavities

By Age 5


Oral Health, Community Water Fluoridation and the Pediatric Patient

- U.S. and International studies confirm benefits for children – 66-75% drop in OR with GA for ECC

- Water Operators **prevent more cavities** by fluoridating the water than all of us can do in our lifetimes

Oral Health, Community Water Fluoridation and the Pediatric Patient

North Dakota and Community Water Fluoridation – Where to get information
North Dakota and Community Water Fluoridation – Where to get information

- North Dakota ranks #5 in the U.S., of people on community water systems having optimally fluoridated water
- 96.5% = 688,710 out of 713,531 people in state
- This information is updated every two years and can be found on the CDC’s Fluoridation webpage


North Dakota and Community Water Fluoridation – Where to get information

“My Waters Fluoride” – CDC public website for County level fluoride data

North Dakota and Community Water Fluoridation

Abercrombie & Alexander have natural levels of fluoride, not adjusted

North Dakota and Community Water Fluoridation

Annual Water Quality Report\(^3\) – also called CCR. Sent out annually to residents
Gives actual fluoride levels measured in the water

Clinical Case Presentation

Vaccine Hesitancy = Fluoridation Hesitancy

It is critical to understand that “Hesitancy” falls into three basic groups and approaches differ:
1. Those who are hesitant as they truly believe that they have a condition that was caused by the public health preventive measure
2. Those who have heard that the public health preventive measure causes health conditions and are concerned about them
3. Those who vehemently oppose the public health preventive measure no matter what anyone has to say about it
A long list of false claims by fluoridation opponents

- No toxicological testing has been conducted on fluoride
- The ADA says it shouldn’t be used in infant formula
- Fluorosis is a sign of toxic effects
- It causes ADHD
- It causes Alzheimer’s
- It harms the kidney, the immune system and other systems
- It’s a conspiracy — the phosphate fertilizer industry is disposing of its “hazardous waste”
- Cavities have fallen in all nations, so fluoridation must not matter
- Some people are allergic to fluoridated water
- It causes thyroid problems
- The only way fluoride works is by topical application
- This is “forced medication”
- The Cochrane Group says there’s no evidence behind fluoridation
- Water systems should use a pharmaceutical grade of fluoride

Case #1 – Compassion and Empathy

Those who are hesitant as they truly believe that they have a condition that was caused by the therapy:

- Attended a political meeting as I was running for office
- Elderly woman in wheelchair approached me shaking her finger
- “You’re the reason I’m in this wheelchair. CWF made me sick. My doctor told me so!”
- Empathetically and compassionately discussed her condition. Expressed my concern for her health. Briefly discussed that the scientific studies on CWF do not bear out any adverse health effects
- I stated that “while nothing is ever 100%, scientific studies didn’t show any illness like she had”. She wasn’t buying it. “Just stop it now!”
Case #2 – Has heard about potential problems

- Donna, the mother of two children in my office for over 8 years, came to me with a question.
- Moms on the baseball field had been talking about a mommy blog they’d read which stated that fluoride causes cancer.
- Donna and I spoke about what she’d heard and the source of it. There were internet articles that were being circulated.
- I offered to review those for her if she’d send them to me. I let her know that the research doesn’t support this claim, but I’m always interested in reading new information.

Case #2 continued

- I let her know that my two young children used fluoride supplements and that I wouldn’t do anything to risk their health.
- Donna called me back later that day.
- She stated that the articles were from an obscure website and as a pharmaceutical representative, she should have known better than to have accepted what was being said at face value.
- Donna’s confidence in our relationship gave her the comfort & trust that she needed.
Case #3 – Opposes Fluoride and Fluoridation

Julie has two boys ages 3 and 5 years old when they first entered the practice. For personal and religious beliefs, she does not want fluoride used on her boys in the office. Oral hygiene is typical boys. No fluoride toothpaste at home. Discussed diet, home care, risk of cavities especially without using fluoride toothpaste. Mom continued to refuse at each checkup. We continued to discuss at each checkup.....it's our job to discuss prevention.

Case #3 continued

Fast forward four years:
- The boys are now 7 and 9 years old.
- Early cavities began to appear and were pointed out.
- Mom agreed to move them to 3 month checkups.
- After much discussion about how long the teeth were going to be before falling out, what else could be done, and what if they came in even more frequently......
- Mom agreed to application of fluoride varnish twice per year.
- The boys were also shown these areas and now were motivated.
North Dakota and Community Water Fluoridation

Summary:
• Discuss fluoride and water fluoridation at every checkup
• If your community is not fluoridated, discuss with the patient/parent that they’re experiencing more cavities and more severe cavities than they would if their water was fluoridated
• If your community is fluoridated, discuss the healthiness of the teeth with the patient/parent and how fortunate we are to have fluoridated water
• If you are on well water, we will need to check it for fluoride level to see if it is adequate or not

Inoculate your community against challenges to CWF by this short conversation

Resources

CDC: Water Operators and Engineers

CDC: Water Fluoridation Information: General and specific information on CWF

American Fluoridation Society:
• For the latest information on studies, explaining them, refutations, and scientific hyperlinks

American Dental Association:
• Fluoridation Facts: Detailed information on common claims and charges made against CWF with answers and fully referenced
• Frequently asked questions
• Mouth Healthy: More information on Fluoridation from ADA

American Academy of Pediatrics:
• Campaign for Dental Health: Fluoridation Information and resources
• Water Operators Section: Information for Water Operators
Thank you!

Time for Questions & Answers

EVALUATION

At the end of today’s session, please take a moment to complete a brief survey about today’s training. If you would like continuing education credit, you must complete the evaluation.

Make new QR code and add the URL to the evaluation here in this text box.
Upcoming Clinics

Title of Next Clinic Here
Month Day, 2021
Time – Time am, Central
REGISTER HERE: Add URL HERE

Title of Next Clinic Here
Month Day, 2021
Time – Time am, Central
REGISTER HERE: Add URL HERE

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