

FLUORIDE

Why, When and What to Say!

Joanna M. Douglass BDS, DDS
Head Start Oral Health Consultant



Disclosures

- Relevant Financial Disclosures
 - None
- Non-FDA Approved uses
 - Fluoride varnish - is approved as a desensitizer and cavity liner. It is not currently FDA approved as a caries preventive agent - it is used in an “off-label” use

Note: FDA approval is not required to use an agent for an “off-label” use

Outline

- Why Fluoride
 - Caries - how bad is it?
 - Fluoride - how good is it?
- Systemic and topical effects
- Dietary and topical sources
- Current guidelines and the questions they raise
- Common themes to remember

Why Fluoride?

		Caries Prevalence
By Age	2-5 yrs	28%
	6-11 yrs	51%
By Socio-economic status	<100% of poverty	54%
	>200% of poverty	32%



Fluoride Reduces Caries by 30%

Systemic v Topical

- Systemic – lesser effect
 - Incorporated into developing enamel
 - Decreases enamel solubility
- Topical – main effect
 - Inhibits bacterial action
 - Prevents demineralization
 - Promotes remineralization

Fluoride Sources

Systemic Fluoride

- Dietary Sources
 - Water fluoridation, **OR**
 - Dietary supplements

Topical Fluoride

- Dietary Sources
 - Water fluoridation, **OR**
 - Dietary supplements
- Topical Sources
 - Toothpaste, **AND**
 - Fluoride varnish

Water Fluoridation - Spring 2011

U.S. Department of Health & Human Services

HHS.gov

- Current water fluoridation: 0.7-1.2 ppm
- New suggested recommendation: 0.7 ppm



POTENTIAL QUESTIONS

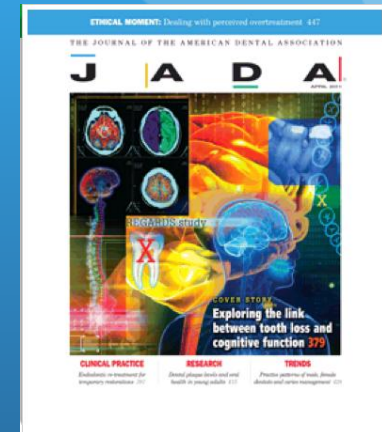
- Is fluoride in the water dangerous if the level is being decreased?
- What if my water company does not decrease the fluoride level, should I stop drinking the water?

Dietary Supplements - Dec 2010

Evidence-Based Clinical Recommendations on the Prescription of Dietary Fluoride Supplements for Caries Prevention

A Report of the American Dental Association Council on Scientific Affairs

R. Gary Rozier, DDS, MPH, Steven Adair, DDS, MS, Frank Graham, DMD, Timothy Iafolia, DMD, MPH, Albert Kingman, PhD, William Kohn, DDS, David Krol, MD, MPH, Steven Levy, DDS, MPH, Howard Pollick, BDS, MPH, Gary Whitford, PhD, DMD, Sheila Strock, DMD, MPH, Julie Frantsve-Hawley, RDH, PhD, Krishna Aravamudhan, BDS, MS and Daniel M. Meyer, DDS



RECOMMENDATION
For children at <u>low risk</u> of developing caries, dietary fluoride supplements are <u>not recommended</u> and other sources of fluoride should be considered as a caries-preventive intervention
For children at <u>high risk</u> of developing caries, dietary fluoride supplements are <u>recommended</u> according to the schedule presented in the table below

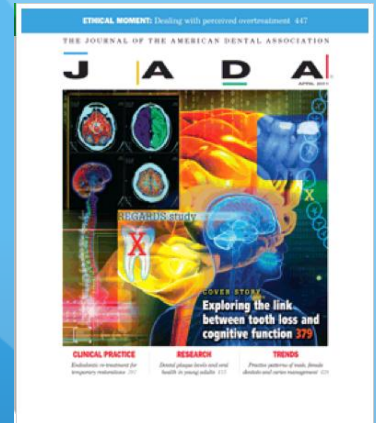
POTENTIAL QUESTIONS

- How do I know if my children are “low” or “high” caries risk
- Why should different kids be treated differently?
- I don’t want my kids to have fluoride supplements, is that going to be a problem?
- I’m using fluoride toothpaste, isn’t that enough? Why do I need supplements too?

Infant Formula - Jan 2011

Evidence-based clinical recommendations regarding fluoride intake from reconstituted infant formula and enamel fluorosis

A report of the American Dental Association Council on Scientific Affairs



Suggest the continued use of powdered or liquid concentrate infant formulas reconstituted with optimally fluoridated drinking water while being cognizant of the potential risk of enamel fluorosis development (strength of evidence: D).

When the potential risk of enamel fluorosis development is a concern, suggest ready-to-feed formula or powdered or liquid concentrate formula reconstituted with water that either is fluoride free or has low concentrations of fluoride (strength of evidence: C).

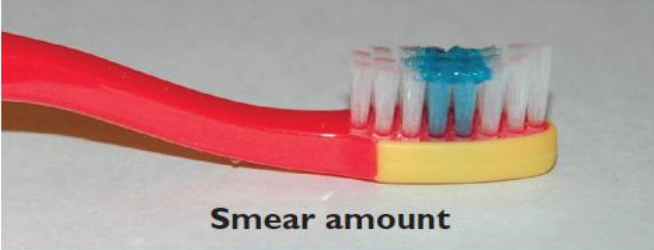
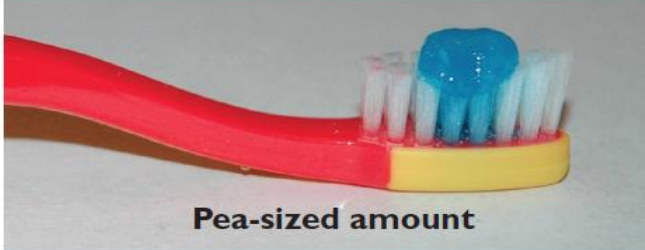
POTENTIAL QUESTIONS

- How do I know if I should mix formula with fluoridated water or not?



Topical Fluoride Recommendations for High-Risk Children *Development of Decision Support Matrix*

Recommendations from MCHB Expert Panel 2007

Age	Children Under 2 Years	Children 2-6 Years
Toothpaste	<ul style="list-style-type: none"> • Use a smear of fluoride toothpaste  <p style="text-align: center;">Smear amount</p>	<ul style="list-style-type: none"> • Use no more than a pea-sized amount of fluoride toothpaste  <p style="text-align: center;">Pea-sized amount</p>
Varnish	<ul style="list-style-type: none"> • Apply every 3-6 months 	<ul style="list-style-type: none"> • Children should spit out excess toothpaste • Do not rinse after brushing <ul style="list-style-type: none"> • Apply every 3-6 months

Fluoridated Toothpaste - May 2008



American Academy of Pediatric Dentistry

Guideline on Fluoride Therapy

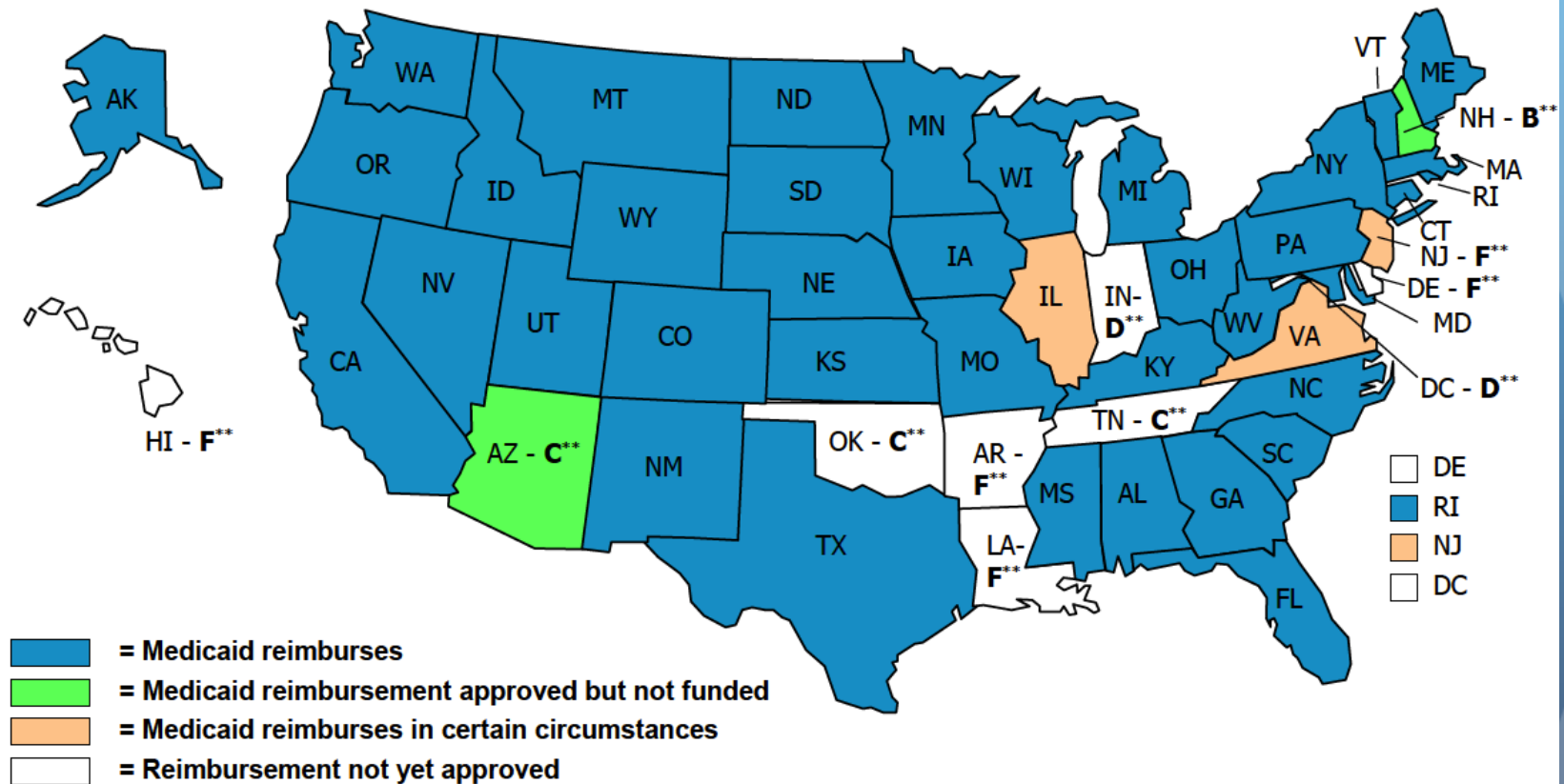
A 'smear' of fluoridated toothpaste (see Figure 1) for children less than 2 years of age may decrease risk of fluorosis.⁷² A 'pea-size' amount (see Figure 1) of toothpaste is appropriate for children aged 2 through 5 years.⁷²⁻⁷⁴ To maximize the beneficial effect of fluoride in the toothpaste, rinsing after brushing should be kept to a minimum or eliminated altogether.^{72,75}

POTENTIAL QUESTIONS

- But my child swallows all the toothpaste - won't they get too much fluoride?
- I really worry about fluorosis, will it matter if I do not use toothpaste until my son is two years old?

Fluoride Varnish in Medical Offices - ~2000 onwards

States With and Without MEDICAID Reimbursement for Primary Care Medical Providers to Perform Caries Prevention Services



POTENTIAL QUESTIONS

- I have fluoridated water, I am using fluoridated toothpaste, do I need fluoride varnish too?
- It's a lot of fluoride, will this contribute to fluorosis?
- My doctor/dentist just gave my son fluoride varnish last month, is it ok for him to have it again?
- Why is my doctor not talking about fluoride or using fluoride varnish?

Guiding Principals

- Caries is a prevalent disease that is complicated and costly to treat!
- High caries risk - advocate strongly for fluoride use
- Low caries risk-fluoride use is less important - settle for fluoridated toothpaste!
- Most fluorosis is “mild” and mild fluorosis can be considered aesthetically pleasing!
- What is most important:
 1. Fluoride toothpaste
 2. Fluoride varnish
 3. Dietary fluoride supplements

