

Flouride in Prevention of Dental Caries in Children

Odonto-stomatology

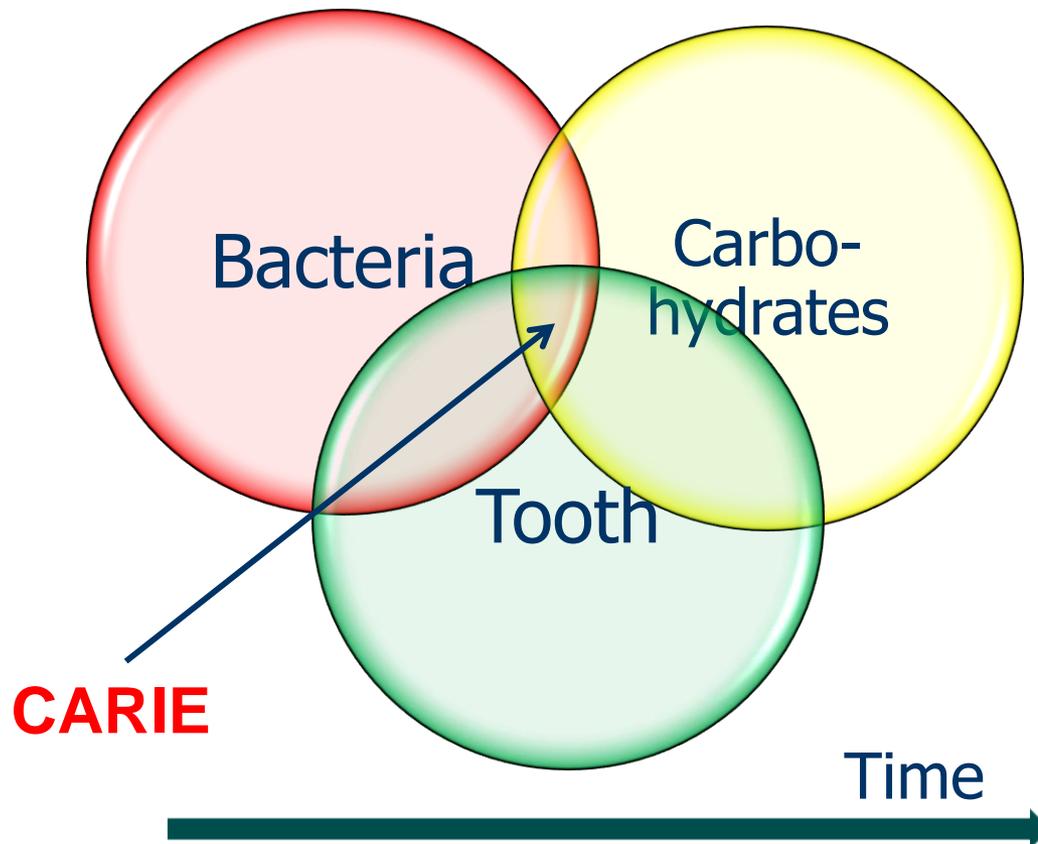


DENTAL CARIES

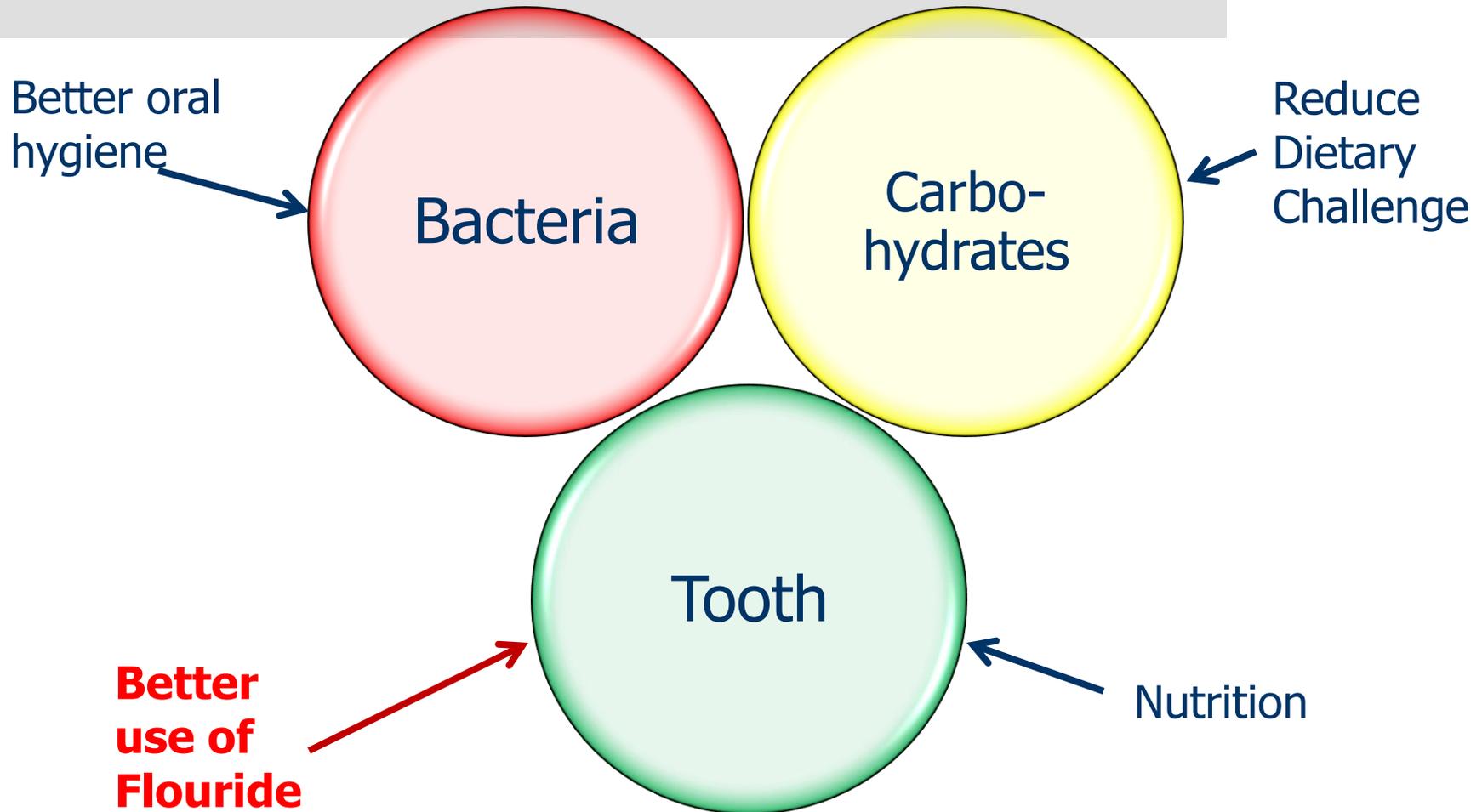
- ✓ Chronic infectious diseases.
- ✓ Transmissible
- ✓ Bacterial by-products (acids) dissolve the enamel of teeth.



DENTAL CARIES



FLOURIDES and DENTAL CARRIES



FLOURIDES

- ✓ Fluoride is the ionic form of the element fluorine.
- ✓ It is negatively charged and will not remain as a free element.
- ✓ Fluoride has a high affinity for calcium.
 - very compatible with teeth and bone.

FLOURIDES

- ✓ Fluoride has been available in the United States since the mid-1940's.
- ✓ In 2008, 64.3% of the population served by public water systems received optimally fluoridated water.
- ✓ There is strong evidence that community water fluoridation is effective in preventing dental caries.

FLOURIDES



- ✓ Prevents demineralization.
- ✓ Enhances remineralization.
- ✓ Alters the action of plaque bacteria.

Systemic Sources of Fluoride

- ✓ Drinking water
- ✓ Foods
- ✓ Toothpaste
- ✓ Fluoride supplements



Topical Sources of Fluoride

- ✓ Toothpaste
- ✓ Fluoride mouthrinses
- ✓ Fluoride gels
- ✓ Fluoride varnish



THE JOURNAL OF THE AMERICAN DENTAL ASSOCIATION



**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**

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JADA 2010;141(12):1480-1489

*The following resources related to this article are available online at
jada.ada.org (this information is current as of July 6, 2013):*

Evidence statements for caries prevention, enamel fluorosis and dosage schedule.

TOPIC	EVIDENCE STATEMENTS	LEVEL OF EVIDENCE
Caries Prevention	On the basis of studies conducted mostly in the 1960s and 1970s in the United States, in children younger than 6 years, dietary fluoride supplements reduce the incidence of dental caries in primary teeth*	Ia
	On the basis of studies conducted mostly in the 1970s in the United States, in school-based programs, chewable dietary fluoride supplements reduce the incidence of dental caries in permanent teeth [†]	Ia
	Adherence to a daily prescription regimen enhances the caries-preventive benefit of dietary fluoride supplements [‡]	IV

Evidence statements for caries prevention, enamel fluorosis and dosage schedule.

TOPIC	EVIDENCE STATEMENTS	LEVEL OF EVIDENCE
Enamel Fluorosis of the Permanent Dentition	The use of dietary fluoride supplements during tooth development increases the likelihood of developing enamel fluorosis, predominantly of the very mild to mild form [§]	III
	Inappropriate prescription of dietary fluoride supplements during the first years of life in an area with optimally fluoridated water is associated with mild to moderate enamel fluorosis [¶]	III

Evidence statements for caries prevention, enamel fluorosis and dosage schedule.

TOPIC	EVIDENCE STATEMENTS	LEVEL OF EVIDENCE
Schedule	In children aged 6 months to 3 years who are exposed to suboptimal levels of fluoride in water, receiving dietary fluoride supplements at 0.25 to 1.00 milligrams per day reduces the incidence of dental caries [#]	Ib
	In children aged 3 to 6 years who are exposed to suboptimal levels of fluoride in water, receiving dietary fluoride supplements at 0.5 to 1.0 mg per day reduces the incidence of dental caries ^{**}	Ib
	In children aged 6 to 16 years who are exposed to suboptimal levels of fluoride in water, receiving dietary fluoride supplements at 0.5 to 1.0 mg per day reduces the incidence of dental caries ^{††}	Ib

RECOMMENDED AMERICAN DENTAL ASSOCIATION DIETARY FLUORIDE SUPPLEMENT DOSING SCHEDULE FOR CHILDREN AT HIGH RISK OF DEVELOPING CARIES

Age (Years)	Amount of Fluoride Supplementation and Strength of Recommendations, According to Fluoride Concentration in Drinking Water (Parts per Million*)					
	< 0.3		0.3-0.6		> 0.6	
	Fluoride supplementation	Strength of recommendations	Fluoride supplementation	Strength of recommendations	Fluoride supplementation	Strength of recommendations
Birth to 6 months	None	D	None	D	None	D
6 months to 3 years	0.25 milligrams per day	B	None	D	None	D
3 to 6 years	0.50 mg/day	B	0.25 mg/day	B	None	D
6 to 16 years	1.00 mg/day	B	0.50 mg/day	B	None	D

* 1.0 part per million = 1 milligram per liter.

Professionally Applied Topical Fluoride Executive Summary of Evidence-Based Clinical Recommendations

The ADA Council on Scientific Affairs

May 2006

These evidence-based clinical recommendations were developed by an expert panel established by the American Dental Association Council on Scientific Affairs (CSA) that evaluated the collective body of scientific evidence on the effectiveness of professionally applied topical fluoride for caries prevention. The recommendations are intended to assist dentists in clinical decision-making. The dentist, knowing the patient's health history and vulnerability to oral disease, is in the best position to make treatment decisions in the interest of each patient. For this reason, evidence-based clinical recommendations are intended to provide guidance and are not a standard of care, requirements or regulations. These clinical recommendations must be balanced with the practitioner's professional expertise and the individual patient's preferences.

MedLine and the Cochrane Database of Systematic Reviews were searched for systematic reviews and clinical studies of professionally applied topical fluoride—including

gel, foam and varnish forms—through October 2005. The American Dental Association Council on Scientific Affairs formed a panel of experts to evaluate the collective evidence and develop these clinical recommendations. Panelists were selected on the basis of their expertise in the relevant subject matter. They were required to sign a disclosure stating that neither they nor their spouse or dependent children had a significant financial interest that would reasonably appear to affect the development of these recommendations. The panel's recommendations are detailed in a document titled "Professionally Applied Topical Fluoride: Evidence-Based Clinical Recommendations," for which this is the executive summary. The document was submitted for review to scientists with expertise in fluoride and caries, ADA agencies and 46 organizations representing academia, professional organizations, industry and third-party payers. The clinical recommendations are approved by the ADA Council on Scientific Affairs.

RISK CATEGORY	AGE CATEGORY FOR RECALL PATIENTS					
	< 6 Years			6 To 18 Years		
	Recommendation	Grade of Evidence	Strength of Recommendation	Recommendation	Grade of Evidence	Strength of Recommendation
Low	May not receive additional benefit from professional topical fluoride application*	Ia	B	May not receive additional benefit from professional topical fluoride application*	Ia	B
Moderate	Varnish application at 6-month intervals	Ia	A	Varnish application at 6-month intervals	Ia	A
				OR	Fluoride gel application at 6-month intervals	Ia
High	Varnish application at 6-month intervals	Ia	A	Varnish application at 6-month intervals	Ia	A
	OR			OR		
	Varnish application at 3-month intervals	Ia	D†	Varnish application at 3-month intervals	Ia	A†
				OR		
			Fluoride gel application at 6-month intervals	Ia	A	
			OR			
			Fluoride gel application at 3-month intervals	IV	D‡	

CONCLUSION

- ✓ All sources of fluoride must be considered.
- ✓ **Supplementation:**
 - children at high risk of developing caries
 - when fluoride access is limited.
- ✓ **Not supplementation:**
 - children younger than 6 months and older than 16 years.
 - adequate fluoridated community water.

References

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THANK FOR YOUR ATTENTION!