

FLUOROSIS FACTS:

A Guide for Health Professionals

Fluoride is important for cavity prevention, and health providers and families should work together to make sure children are getting enough to protect their teeth. This tool was designed to help health professionals discuss fluorosis with families who may have questions about the condition.

Definition:

Dental fluorosis is a condition affecting tooth enamel and is caused by an increased intake of fluoride, over an extended period of time, while teeth are developing under the gums.



NORMAL



MILD



MODERATE



SEVERE

Most fluorosis is classified as very mild, mild, or moderate. Severe fluorosis occurs in less than 1% of the population. Since there are many possible causes of changes in the appearance of the teeth, concerns about the presence of fluorosis should be referred to a dental professional.

Occurrence:

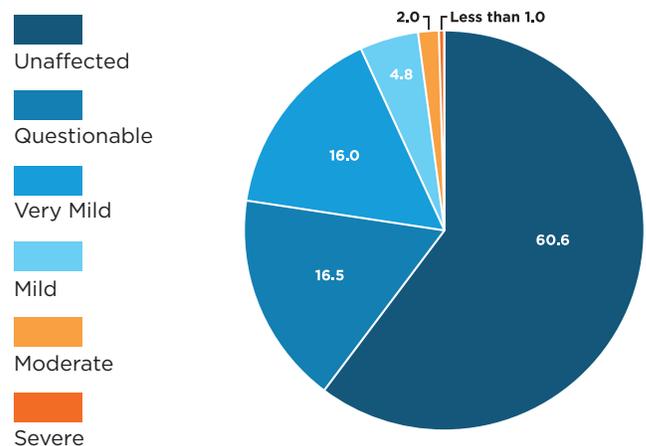
Dental fluorosis occurs while the permanent teeth are developing, before they have erupted. The greatest risk is from birth to 8, particularly between 15 and 30 months. Fluoride intake after the age of 8 cannot cause fluorosis. Dental fluorosis is less prevalent in the primary teeth than in permanent dentition.

Prevalence:

According to the most recent national health survey (1999-2004), fewer than 23% of people aged 6-49 experienced any dental fluorosis.¹ Of those that did, prevalence was higher among children from 12 to 15 years of age. This is due to the increased availability of fluoride and ingestion by young children from multiple sources, including:

- Beverages, including fluoridated tap water
- Foods processed with fluoridated water
- Toothpaste and other oral care products
- Topical fluoride & dietary supplements

Percent distribution of dental fluorosis among persons aged 6 - 49: United States, 1999 - 2004



Notes: Dental fluorosis is defined as having very mild, mild, moderate, or severe forms is based on Dean's Fluorosis Index. Percentages do not sum to 100 due to rounding.

Source: CDC/NCHS, National Health and Nutrition Examination Survey, 1999 - 2004

Although the effects of the most prevalent forms of dental fluorosis are primarily aesthetic, health professionals should identify all possible sources of fluoride before considering the addition of fluoride supplements. The Centers for Disease Control and Prevention (CDC) recommends fluoride supplements be prescribed to children without access to fluoridated water. The American Dental Association (ADA) recommends that these children also be identified as at high risk for caries. ([See the American Academy of Pediatrics \(AAP\) Oral Health Risk Assessment Tool.](#))

Fluorosis and Toothpaste:

Swallowing of toothpaste and other dental products with fluoride increases the risk of enamel fluorosis. Here are guidelines for discussing the use of fluoride toothpaste with care givers.

- Children younger than age 3 should use a "smear" of toothpaste.
- Limit tooth brushing to 2 times a day for this age group.



**UNDER 3 YEARS
= SMEAR**



**OVER 3 YEARS
= PEA-SIZED**

¹Beltrán-Aguilar ED, Barker L, Dye BA. Prevalence and severity of dental fluorosis in the United States, 1999-2004. NCHS data brief, no 53. Hyattsville, MD: National Center for Health Statistics. 2010. <http://www.cdc.gov/nchs/data/databriefs/db53.htm>

- Children aged 3-6 years use a slightly larger, “pea-sized” amount.
- Supervise and help young children with tooth brushing. Since most young children will instinctively swallow water, they should be encouraged to spit out excess toothpaste, but not rinse with water.
- Keep all dental products out of the reach of young children to avoid accidental ingestion.

Fluorosis and Other Dental Products:

Many mouthrinse and mouthwash products contain fluoride. Like toothpaste, these products are easily swallowed. They are not recommended for children under the age of 6.

Fluorosis versus Caries:

Dental caries remains the most preventable chronic disease among children. After assessing a child’s overall exposure to fluoride from multiple sources, health professionals can help families:

1. Understand factors that place children at risk for dental caries and oral disease. ([See the AAP Oral Health Risk Assessment Tool](#))
2. Identify and practice oral health prevention and home care activities. ([See the AAP Oral Health Self-Management Goals](#)).
3. Use fluoride toothpaste properly to maximize caries prevention and minimize fluoride over-exposure.
4. Consider the possible need for topical fluoride varnish application or fluoride supplementation based on a caries risk assessment and fluoride exposure.

Preventing Fluorosis:

1. Counsel caregivers to follow the guidelines above on the proper use of dental products such as toothpaste and to avoid mouthwash/rinse by children under the age of 6.
2. Be aware of the fluoridation status in your community. This information contributes to the oral health risk assessment and your guidance to caregivers.
3. Perform an oral health risk assessment and apply fluoride varnish if needed. If the family has one established, defer to the dental home. If not, suggest beginning regular dental visits.
4. Following your determination of all sources of fluoride and an oral health risk assessment, supplements may be indicated.
5. Connect with a dental home.

The Balance between Decay & Fluorosis

You may hear people express concern that 40% of American adolescents have dental fluorosis.¹ Here are three points to put this figure in perspective.

1. Dental fluorosis is a cosmetic condition that does not pose a threat to health. Children with fluorosis have strong teeth.
2. Preventable dental caries is still one of the most common chronic childhood diseases and frequently results in pain, suffering, and loss of time at school and work.
3. Only 8.6% of 12-15 year olds had mild fluorosis. Fewer than 3% had moderate to severe fluorosis.

The prevalence of fluorosis results from the wide availability of fluoride in the U.S. today. This tool includes simple ways to help families protect their teeth and prevent fluorosis.

¹Beltrán-Aguilar ED, Barker L, Dye BA. Prevalence and severity of dental fluorosis in the United States, 1999-2004. NCHS data brief, no 53. Hyattsville, MD: National Center for Health Statistics. 2010. <http://www.cdc.gov/nchs/data/databriefs/db53.htm>

For more information see the following sources:

American Academy of Pediatrics
[Fluoride Use in Caries Prevention in the Primary Care Setting & Children’s Oral Health Resources](#)

American Academy of Pediatrics Parent Education Resources on [HealthyChildren.org](#)

Pediatrics in Review (subscription required)
[Fluoride and Dental Caries Prevention in Children](#)

American Academy of Pediatric Dentistry
[Guideline on Fluoride Therapy](#)

Centers for Disease Control and Prevention
[Frequently Asked Questions on Fluorosis](#)

Maternal and Child Health Bureau [Topical Fluoride Recommendations for High-Risk Children](#)

The information contained in this publication should not be used as a substitute for the medical care and advice of your pediatrician. There may be variations in treatment that your pediatrician may recommend based on individual facts and circumstances.

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