



Dental Caries (Early Childhood Caries, Tooth Decay, or Cavities)

What is early childhood caries?

Early childhood caries (tooth decay, which leads to cavities) is the most common chronic infectious disease of childhood. Tooth decay is an infectious disease process that damages tooth structure and eventually makes holes (cavities) in the teeth. The consequence of early childhood tooth decay is more than unattractive teeth. Early childhood caries can cause severe pain, speech difficulty, and poor nutrition and interfere with sleep. It can start serious infections elsewhere in the body, such as the brain, lungs or heart. Treatment for tooth decay can require expensive dental services. These services in young children often require general anesthesia and treatment in an operating room. Dental caries is nearly entirely preventable.

The caries process begins when plaque builds up on teeth, usually because of poor toothbrushing habits and inappropriate nutrition. Plaque is a sticky substance produced by bacteria that live near the gumline of the teeth. Children become infected sometime early in life with the bacteria that can cause caries. Adults and other children can transfer bacteria to an infant or child's mouth. The bacteria in plaque break down sugars in the food and beverages given to children. As the bacteria break down the sugars, they produce acids that can damage the hard surface of teeth, called *enamel*. After consuming a sugary food or drink, it can take up to 40 minutes for the saliva to neutralize the acid environment in the mouth to return to safe levels.

What are the signs or symptoms?

Caries begins as a change in color of the tooth, indicating acid is starting to break down the hard enamel surface. Usually, the first changes are white spots at the gumline on the upper front teeth. Without special equipment, these spots are hard to see at first, even for a physician or dentist. If a child with early signs of tooth decay is not treated, the damage will continue. Next, the tooth starts to look yellow, brown, or black in the area where decay of the tooth is happening. If the process is not stopped, the whole tooth can be eaten away by the acid. The tooth and gum area may become painful. The child may be left with only a broken-off stub of tooth in the gum. A serious infection of the root of the tooth, gum, and jawbone can occur, with the risk of further complications. Because the enamel in primary teeth is thinner than the enamel in permanent teeth, this whole process can take place in just a few months.



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Child with dental caries

How is it spread?

The bacteria that cause caries are transmitted by seemingly innocent acts of sharing objects that enter the mouth. For example, the bacteria can be spread by sharing a cup, moistening a pacifier or cleaning it off in a person's mouth before giving it to a baby, pre-tasting food, sharing spoons and toothbrushes that involves transfer of saliva, and, less commonly, kissing on the mouth.

How do you control it?

To prevent early childhood caries, focus on 5 measures.

1. Start toothbrushing with fluoridated toothpaste once the first teeth erupt.
2. Harden the enamel with appropriate intake of and exposure to fluoride.
3. Limit total juice consumption (diluted or undiluted) per 24 hours as follows: Infants younger than 1 year: avoid giving any juice, unless medically indicated; children 1 to 3 years of age, no more than 4 ounces; children 4 to 6 years of age, no more than 6 ounces; children 7 to 18 years of age, no more than 8 ounces. Other sugary beverages should be avoided in all age-groups. Have the child drink water after eating and after drinking juice to minimize the exposure of the teeth to acid.
4. Any juice consumed should be limited to what the child drinks in a single sitting. Do not let the child carry around a beverage during the day or sleep with it during naps or nighttime. Juice should not be sipped from any cup, including a sippy cup, or sucked on from a bottle over a prolonged period.
5. Teach children to drink from a cup as soon as they are ready to learn how to do it, usually by 1 year of age.

What are the roles of the educator and the family?

- Take care of your own teeth. Early childhood educators should brush their teeth 2 times a day, preferably after the first meal of the day and before bed. Be a good role model for children.
- Practice good oral health for the children.
 - Brush children’s teeth at least 2 times a day, preferably after a meal and before bed.
 - Teach and practice toothbrushing in early childhood education settings. If brushing with toothpaste occurs at home twice a day, toothpaste may not be required at the program. However, because many families do not accomplish twice-daily toothbrushing at home, do not assume it is occurring.
 - Infants without teeth do not need any gum care. There is no strong evidence that wiping gums with a cloth is of any benefit.
 - After a child’s first tooth comes in, twice-daily toothbrushing can begin.
 - ❖ Children younger than 3 years should use a smear of toothpaste the equivalent of a grain of rice.
 - ❖ At 3 years of age, children should start to use a pea-sized amount of fluoridated toothpaste.
 - Encourage all children to spit after brushing. Many will not be able to do this consistently until about 8 years of age. It is safe for them to swallow this amount of fluoride toothpaste without spitting it out.
 - Children will need supervision and assistance with toothbrushing until 8 years of age. Educators should have clean hands when assisting a child with toothbrushing. The most important areas to clean are at the gumline and in all the spots that can trap food. That is why the inter-tooth surfaces need to be flossed to remove food from these spaces.
- The first dental visit should occur within 6 months after the first tooth comes through the gum. This is an ideal time for planning when and how to do toothbrushing and for the first application of fluoride varnish. Checking the child’s teeth should also be part of routine preventive health care provided by the child’s health professional. Children with special health care needs should be seen by a dentist as soon as the first tooth comes in and every 3 to 6 months thereafter to keep their teeth in good condition.
- Practices that may help reduce the risk of caries
 - Do not taste an infant’s heated cereal (or other foods) for safe temperature and then use the same spoon to feed the infant.

- Put any child-mouthed toy out of reach and clean it before another child has a chance to mouth it.
- Encourage staff and families to be sure adults and children have oral health examinations every 6 months to reduce the concentration of caries-causing bacteria on their teeth—and, possibly, the ability of caries-causing bacteria to do damage to their teeth.
- Limit snacking, meals, milk, and beverages other than water to planned times that are spread at least 2 to 3 hours apart rather than allowing grazing on food and sugar-containing fluids (eg, milk, juice) throughout the day. Infants younger than 1 year should not be offered juice.
- Avoid sweet or sticky foods as snacks. When sticky foods are part of the menu, try to follow up with something crunchy, like an apple or some celery.
- Avoid letting children repeatedly sip from a bottle, sippy cup, or another container any drinks, except water. Bottle propping or allowing children to drink from a bottle while napping causes prolonged contact of sugars on the teeth and promotes caries. Drinking water is always a good idea after eating, as it may rinse off some food or drink substance from the surface of teeth.

Exclude from educational setting?

No.

Comment

The American Academy of Pediatrics recommends that all infants receive oral health risk assessments by their pediatric health professional beginning at 6 months of age. They should also be referred to a dentist if they do not have one established, especially those at high risk for dental caries (eg, history of caries, limited-income status, lack of fluoride in the water). There is strong evidence that fluoride reduces caries. Children are very seldom able to spit out the toothpaste after brushing and usually swallow it. The use of a smear of toothpaste (an amount equivalent to a grain of rice) for brushing in early childhood is not harmful even if swallowed. There is evidence that fluoride in excess of the recommendations above at an early age may cause white staining or pitting of the teeth (fluorosis). Most children with fluorosis have a mild cosmetic problem but experience no other harm. Application of fluoride varnish by pediatric health professionals or dentists to children’s teeth every 3 to 6 months is now recommended for all children. Fluoride varnish does not cause fluorosis.

