



Tooth Decay (Dental Caries)

Understanding Cavities and How to Prevent Them

What Is Tooth Decay?

Tooth decay, also called **dental caries** or **cavities**, is one of the most common chronic diseases worldwide. It occurs when bacteria in the mouth produce acids that gradually damage the hard tissues of the teeth.

Without treatment, tooth decay can progress from a small area of enamel damage to severe infection, pain, and even tooth loss.

The good news is that tooth decay is **largely preventable** through good oral hygiene, healthy dietary habits, fluoride, and regular dental care.

How Does Tooth Decay Develop?

Your mouth naturally contains hundreds of different types of bacteria.

Most are harmless, but some bacteria feed on sugars and starches from food and beverages.

As they digest these carbohydrates, they produce acids that attack the tooth surface.

Repeated acid attacks remove minerals from the enamel in a process called **demineralization**.

If this process continues without enough time for the tooth to repair itself, a cavity can develop.

Stages of Tooth Decay

Tooth decay usually develops gradually.

Stage 1: Demineralization

The earliest stage appears as a white spot on the tooth.

At this point:

- No hole has formed.
 - The damage may be reversible with fluoride and good oral hygiene.
-

Stage 2: Enamel Cavity

As minerals continue to be lost, the enamel breaks down and a cavity forms.

Once a cavity develops, it cannot repair itself and usually requires treatment.

Stage 3: Dentin Decay

If untreated, decay spreads into the dentin, the softer layer beneath the enamel.

Symptoms may include:

- Tooth sensitivity
 - Pain with sweets
 - Discomfort from hot or cold foods
-

Stage 4: Pulp Infection

Eventually, bacteria may reach the dental pulp, which contains nerves and blood vessels.

Symptoms may include:

- Severe toothache
- Swelling
- Infection
- Dental abscess

At this stage, treatment may require root canal therapy or extraction.

Risk Factors

Several factors increase the risk of cavities:

- Frequent sugary snacks
- Sugary drinks
- Poor brushing habits
- Inadequate flossing
- Dry mouth
- Tobacco use
- Lack of fluoride exposure
- Previous history of cavities

Children, older adults, and people with reduced saliva production may have a higher risk.

Common Symptoms

Early cavities often cause **no symptoms**.

As decay progresses, you may notice:

- White or brown spots
- Tooth sensitivity
- Pain while eating sweets
- Pain when biting
- Visible holes
- Persistent toothache

Because early cavities are often painless, routine dental examinations are important.

Can Cavities Heal?

Early mineral loss may be reversed before a cavity forms.

Fluoride, saliva, and good oral hygiene help remineralize weakened enamel.

However, once a cavity develops, it cannot heal on its own and usually requires professional treatment.

How Are Cavities Diagnosed?

Dentists diagnose cavities using:

- Clinical examination
- Dental instruments
- Dental X-rays (when indicated)
- Visual assessment of tooth surfaces

Early diagnosis often allows for simpler treatment.

How Are Cavities Treated?

Treatment depends on how advanced the decay is.

Small cavities are usually treated with fillings.

Larger cavities may require:

- Crowns
- Root canal treatment
- Tooth extraction (if the tooth cannot be saved)

Whenever possible, dentists aim to preserve the natural tooth.

How Can Tooth Decay Be Prevented?

You can greatly reduce your risk by:

- Brushing twice daily with fluoride toothpaste
 - Cleaning between your teeth every day
 - Limiting sugary foods and drinks
 - Drinking fluoridated water when available
 - Visiting your dentist regularly
 - Considering dental sealants for children and some adults
-

Common Myths

"Only children get cavities."

False.

People of all ages can develop tooth decay.

"If my tooth doesn't hurt, I don't have a cavity."

False.

Many cavities cause no pain until they become large.

"Sugar alone causes cavities."

False.

Sugar feeds bacteria, but cavities develop through the combined effects of bacteria, frequent sugar exposure, acid production, and inadequate oral hygiene.

Key Takeaways

- ✓ Tooth decay is one of the most common oral diseases worldwide.
 - ✓ Cavities develop when bacteria produce acids that damage tooth enamel.
 - ✓ Early decay may be reversed before a cavity forms.
 - ✓ Once a cavity develops, professional treatment is usually necessary.
 - ✓ Fluoride, healthy eating, and daily oral hygiene are the best defenses against tooth decay.
 - ✓ Regular dental visits help detect cavities before symptoms appear.
-

References

1. American Dental Association. *Tooth Decay (Dental Caries)*. <https://www.ada.org>

2. National Institute of Dental and Craniofacial Research. *Tooth Decay*. <https://www.nidcr.nih.gov>
3. Centers for Disease Control and Prevention. *Cavities (Dental Caries)*. <https://www.cdc.gov/oralhealth>
4. World Health Organization. *Oral Health Fact Sheet*. <https://www.who.int/health-topics/oral-health>
5. American Academy of Pediatric Dentistry. *Caries Risk Assessment and Management*. <https://www.aapd.org>