CONDITION

Dental cavities

Dental cavities are areas of tooth decay that can progress from weakened enamel to permanent holes.

WHAT IT IS
Tooth decay causing weakened areas or holes

BODY SYSTEM
Mouth and teeth

MAIN SYMPTOMS
Toothache, sensitivity, visible spots, pain when biting

WHAT CAUSES IT
Bacterial acids acting on teeth

HOW IT IS DIAGNOSED
Dental examination and sometimes dental X-rays

MAIN TREATMENT
Fluoride care and tooth restoration

CAN IT BE CURED?
Sometimes - earliest decay can be reversed

IS IT AN EMERGENCY?
Sometimes - facial swelling or breathing difficulty

LONG-TERM OUTLOOK
Usually manageable with treatment and ongoing dental care

Overview

Dental cavities are damaged areas in the hard surface of a tooth. They are also called tooth decay or dental caries. Early damage may appear as a white, brown, or dark spot. As decay progresses, it can form a permanent hole.

Enamel is the hard outer covering of a tooth. Beneath it is softer, more sensitive dentin. The centre contains the pulp, where the nerves and blood vessels are located.

Cavities develop when bacteria in dental plaque use sugars and other carbohydrates from food and drinks. The bacteria produce acids that remove minerals from the tooth. Saliva and fluoride can replace some minerals, but decay progresses when mineral loss happens faster than repair.

Very early decay may be stopped or reversed before a hole forms. Once tooth structure has been lost, it cannot grow back, but a dentist can restore the tooth. Untreated decay can spread deeper, causing pain, infection, difficulty eating, or tooth loss. Because early cavities often cause no symptoms, dental examinations are important.

Symptoms

Early tooth decay may cause no noticeable symptoms. As a cavity grows, you may notice:

Sensitivity can also result from gum recession, worn enamel, a cracked tooth, or a loose filling. A dental assessment can identify the cause.

If decay reaches the pulp, pain may become stronger, continue after a trigger has gone, or disturb sleep. Infection may cause swelling, pus, a bad taste, fever, or a tender lump on the gum.

Children may avoid chewing on one side, refuse certain foods, become unsettled during meals, or have trouble sleeping instead of describing tooth pain clearly.

- Sensitivity to cold, heat, or sweet foods and drinks
- Toothache or pain without an obvious cause
- Pain when biting or chewing
- A white, brown, or black spot
- A visible pit or hole
- Food repeatedly becoming trapped in one area
- A rough edge felt with the tongue

Causes and risk factors

Bacteria collect in plaque, a sticky film on teeth. When they break down sugars and starches, they release acids that weaken the tooth surface. Frequent snacks or sweetened drinks cause repeated acid attacks, even when the foods do not taste very sweet.

Cavities are especially common in deep grooves on back teeth, between teeth, around older fillings, and on exposed tooth roots.

Factors that increase risk include:

Babies and young children can develop cavities when their teeth are repeatedly exposed to sweet drinks, including through prolonged bottle use. Risk depends on the overall pattern of

feeding, cleaning, fluoride exposure, and other foods and drinks.

Cavities are not inherited directly, although inherited differences in enamel, tooth shape, and saliva can affect risk.

- Infrequent or ineffective brushing with fluoride toothpaste
- Frequent sugary or starchy foods and drinks
- Low fluoride exposure
- Dry mouth, including from medicines or health conditions
- Previous cavities or several existing fillings
- Braces, dentures, or tooth shapes that trap plaque
- Receding gums that expose softer root surfaces
- Weak or poorly formed enamel
- Difficulty obtaining regular dental care

Diagnosis

A dentist diagnoses cavities by asking about symptoms and examining the teeth for changes in colour, texture, and shape. They may check suspicious areas and look around fillings, crowns, and exposed roots.

Dental X-rays can reveal decay between teeth or under a filling and show how close it is to the pulp. X-rays are not required at every visit; timing depends on symptoms, age, previous decay, and individual risk.

Some practices also use light, laser, or digital imaging devices. These support, but do not replace, professional assessment. The dentist will consider other causes of pain or dark areas, including staining, enamel wear, gum recession, cracks, and infection.

Treatment and management

Treatment depends on whether the tooth is only losing minerals or has developed a hole, and on how deeply the decay has spread.

Very early decay with an intact surface may sometimes be stopped or reversed through better plaque removal, fluoride toothpaste, professional fluoride treatment, and less frequent sugar exposure. Follow-up is needed to confirm that the area is stable.

A cavity that has formed a hole usually needs repair. The dentist removes or seals the decayed area and restores the tooth, often with a filling. The material depends on the tooth, cavity size and location, appearance, durability, and clinical needs.

Larger areas of damage may require an inlay, onlay, or crown. If decay reaches the pulp and causes inflammation or infection, root canal treatment may be needed. This removes damaged pulp, cleans and seals the inside of the tooth, and may be followed by a crown.

A tooth that cannot be restored may need removal. The dentist can discuss whether and how to replace it.

Silver diamine fluoride may be offered for selected cavities. It can slow or stop decay without drilling but usually turns the decayed area dark and does not rebuild missing tooth structure.

Pain relief may help while you await care, but it does not treat the cavity. Antibiotics like amoxicillin or doxycycline are not routinely used for tooth decay. They may be prescribed if infection is spreading or causing broader illness, alongside treatment of the tooth.

Complications

Untreated cavities can enlarge, weaken the tooth, and make restoration more difficult. Decay reaching the pulp can cause painful inflammation. The pulp may die, allowing an abscess to form around the root.

Possible complications include:

Most cavities do not cause serious illness when treated. Rarely, infection can spread into the face, jaw, neck, or bloodstream. Prompt care is important if swelling or general illness develops.

- Ongoing or severe tooth pain
- Difficulty chewing
- Broken teeth or lost fillings
- Dental abscess
- Swelling of the gum, jaw, or face
- Tooth loss
- Disrupted eating, sleep, or school attendance

Prevention

Many cavities can be prevented, although tooth shape, dry mouth, enamel problems, existing dental work, and access to care can still affect risk.

Brush thoroughly with fluoride toothpaste. Fluoride helps enamel resist acid and repair very early mineral loss. Clean between teeth using floss or another suitable method.

Limit how often teeth are exposed to sugary foods and drinks. Repeated intake throughout the day causes more acid attacks than consuming the same amount less often. Water is a useful drink between meals.

Dry mouth needs particular attention. Sipping water and using sugar-free products that stimulate saliva may help. A dentist or clinician can review possible causes, including medicines, medical conditions, and previous radiation treatment.

Attend dental check-ups at intervals based on your cavity risk. Some people may benefit from professional fluoride treatments, sealants over deep grooves, or other preventive care.

Children need help brushing until they can clean every tooth surface reliably. Primary teeth can develop cavities and are important for eating, speech, and guiding adult teeth into position.

Living with it and what to expect

A treated cavity usually stops progressing if decay has been controlled and the restoration remains sound. However, fillings and crowns do not prevent future decay. New damage can form around their edges or elsewhere on the tooth.

Restorations can wear, chip, or loosen and may eventually need repair or replacement. Regular dental care helps find these changes early.

Early decay may become hard and inactive after fluoride care, improved cleaning, and reduced sugar exposure. A dentist may monitor it instead of drilling. The area can remain discoloured even when decay is no longer active.

People with dry mouth, exposed roots, braces, or frequent previous cavities may need closer follow-up. The aim is to control risk factors and preserve natural tooth structure.

Most people can eat normally after routine treatment. Temporary sensitivity may occur after a filling. Have sensitivity checked if it worsens, lasts for an extended period, or occurs with pain when biting.

When to get medical help

Arrange a routine dental appointment for tooth sensitivity, a visible spot or hole, food trapping,

a rough tooth surface, or mild recurring pain. Do not wait for a suspected cavity to become painful, because early treatment may be simpler.

Seek prompt dental care for persistent toothache, pain that wakes you, swelling near a tooth, pus, a bad taste from the affected area, or difficulty opening your mouth.

Get urgent same-day medical or dental help if facial or jaw swelling is increasing, or if dental pain occurs with fever or feeling significantly unwell.

Call emergency services or go to an emergency department if swelling affects breathing or swallowing, spreads toward the eye or neck, or causes severe difficulty opening your mouth. These signs may indicate a spreading infection.

Common questions

Can a cavity heal on its own?

The earliest decay may be reversed while the tooth surface remains intact. Saliva, fluoride, and reduced sugar exposure can replace lost minerals. Once a hole forms, the tooth cannot regrow the missing structure and usually needs restoration.

How do I know if I have a cavity?

You may notice sensitivity, pain, a dark spot, or a hole, but early cavities often cause no symptoms. A dental examination, sometimes with X-rays, is the reliable way to find out.

Does getting a filling hurt?

The tooth is usually numbed before treatment. You may feel pressure or vibration, but the aim is to prevent pain. Mild sensitivity afterward can occur. Contact the dental practice if pain is severe, worsening, or affects your bite.

Can I stop a cavity from getting worse without a filling?

Sometimes, if the surface has not broken down or a dentist uses a method that arrests decay. Options may include fluoride, improved cleaning, diet changes, sealants, or silver diamine fluoride. An established hole often needs restoration.

Why do I keep getting cavities even though I brush?

Brushing is only one part of risk. Frequent sugar exposure, dry mouth, plaque between teeth, deep grooves, exposed roots, limited fluoride, and older dental work can contribute. A dentist can assess your individual risk factors.

Are cavities contagious?

Cavities are not passed directly between people. Mouth bacteria can be shared through saliva,

but decay develops through the combined effects of bacteria, diet, tooth resistance, saliva, fluoride, and time.

Sources

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