

What is Dental Caries?

Dental Caries (tooth decay) is a dynamic, multifactorial disease in which the hard tissues of the teeth demineralise at a faster rate than they can replenish those minerals (remineralisation). If preventive or management interventions are not put into place, dental caries can result in lesions (cavities) in the teeth.

Who Is Affected?

According to the World Health Organization (WHO), worldwide, 60–90% of school children and nearly 100% of adults have dental cavities. In fact, dental caries is the most common, preventable chronic disease on the planet, yet it remains largely untreated, resulting in high levels of cavities.

Furthermore, the negative effects of untreated caries can span into nearly every aspect of daily life, causing:

- Pain and discomfort, which can lead to missed days of school or work or decreased participation in school, work and social activities
- Financial stress due to costly treatment cycles (which may be an even heavier burden on the vulnerable populations who suffer from higher rates of cavities)

How does it happen?

Our mouths are home to many different types of bacteria, which, when we are healthy, are in balance. When we eat and drink, bacteria build up and form a biofilm (known as plaque) on the teeth. Plaque forms most easily where there is no smooth surface and can be found most commonly in cracks, around fillings or other dental work, between teeth and near the gum line. This plaque feeds on carbohydrates and starches in the foods that we eat, and as a by-product, produces acids which in turn attack the enamel on our teeth, leading to demineralisation. If this demineralisation happens faster than our teeth can recover from it, this is where the caries process begins.

Initial-Stage Caries: The acids begin to dissolve the minerals in the hard enamel that covers the teeth.

Moderate-Stage Caries: As acid continues to erode the teeth, microscopic pits in the enamel can form, and then quickly grow as they continue to erode. This stage is particularly risky for exposed roots of teeth, as they are coated in a thin outer layer (not enamel) and therefore are very susceptible to decay.

Extensive-Stage Caries: When the enamel or outer layers of the teeth are damaged, acid can then seep through into the softer dentin layer of the tooth. As the dentin and enamel break down, a visible cavity is created. If not properly treated, the decay in the dentin will continue to worsen and will eventually get into the tooth's inner layer, which contains nerve fibres and can lead to extreme pain and result in the need for invasive treatment such as a root canal.

Can caries be prevented?

There is a constant balance at play in our mouths. If we can keep the balance between the demineralisation process and our own natural (such as saliva) or deliberate protective interventions, this cycle need not lead to decay or cavities.

In order to give your teeth the best chance at remineralising and keeping that balance, you should consider following these four simple steps.

- **Balance Bacteria** by brushing twice a day to reduce the buildup of plaque.
- **Minimise Acid** produced by plaque by reducing frequency at which you consume sugary and starchy foods.
- **Increase Strength** by using a fluoridated toothpaste to help strengthen and remineralise the enamel on your teeth.
- **Enhance Protection** by seeing your dental professional for regular check-ups and personalised advice on further preventive measures you can put into place to protect your teeth.

The early stages of caries are often painless and can only be identified by regular dental examinations. If you experience pain or sensitivity when chewing or from hot, cold or sweet foods or drinks, contact your dentist.

About the Alliance for a Cavity-Free Future (ACFF)

The ACFF is a Global not-for-profit organisation which seeks to promote integrated clinical and public health action to confront the disease burden of caries, fight caries initiation and progression, and, along with a global community of supporters, progress towards a Cavity-Free Future for all age groups. The ACFF was established in collaboration with a worldwide panel of experts in dentistry and public health who share a fervent belief in joining together across professional, geographic, and stakeholder lines, to create a unified global movement dutifully committed to combating caries in communities around the world.

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