Patient Page

Guide to dental acid erosion

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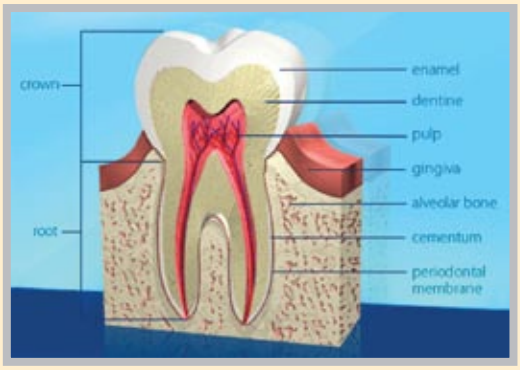
What is dental acid erosion?

The crown of each tooth is covered by a protective, mineral-rich layer of **enamel**—the hardest substance in the body. Underneath the enamel is the **dentine**, which surrounds the living **dental pulp** (consisting of blood vessels, nerves, and connective tissue).



In addition to the normal wear of teeth during eating, enamel can be lost by physical rubbing or chemical dissolving. Rubbing includes **tooth grinding** (bruxism) and **overzealous brushing** with abrasive toothpaste. Dissolving can be due to (1) **acid attack** when bacteria on teeth convert sugars into acids (causing tooth decay or caries), or (2) **acid erosion** by acidic food, acidic drinks, and regurgitated stomach acid.

What can cause dental acid erosion?

The following can cause dental acid erosion:
- Frequent consumption of acidic food and drink (eg, fruit juice, fruit, sodas, sports/energy drinks, yoghurt, red/white wine, preserved fruit, pickles, etc)
- Frequent vomiting
- Acid reflux

Acid erosion of the enamel can expose the dentine and lead to tooth sensitivity; severe erosion may cause irreversible damage to the pulp and result in severe pain.

The **Box** shows some signs of acid erosion of teeth.

Signs of dental acid erosion

See your dentist immediately if you have any of these:

- Yellowish teeth
- Shiny tooth surfaces
- Cracks at the biting edges of teeth
- Teeth that look "thin"
- A twinge when consuming hot, cold, sweet, or sour food and drink, or when the tooth is touched when brushing or flossing

Tips for preventing dental acid erosion

See your dentist regularly, especially if you have signs of acid erosion. Your dentist can advise you on relieving tooth sensitivity by using a desensitising toothpaste, and can treat mild erosion by applying a fluoride agent to the tooth surface. Severe erosion can be treated with a filling or crown replacement.

You can minimise the risk of dental acid erosion by:
- Avoiding frequent intake of acidic food and drink
- Not keeping acidic food or drink in the mouth for a long time
- Using a straw to reduce contact of acidic drinks with teeth
- Rinsing with water after eating/drinking something acidic; allowing 1 hour for neutralisation before brushing
- Chewing sugar-free gum to stimulate the flow of saliva, which helps to neutralise acid and remineralise teeth
- Not inducing vomiting to lose weight (see a doctor for slimming advice)
- Seeing a doctor if you have acid-reflux disease

Sources: HK Department of Health Tooth Club, <www.toothclub.gov.hk>; American Dental Association, <www.ada.org>; Abrahamsen TC, *Int Dent J 2005;55:268-76*; diagram of tooth cross-section courtesy of HK Department of Health Tooth Club.

Written by Trevor Lane, DPhil; edited by Chun-hung Chu, MDS, FRACDS. *This Patient Page is for general informational use and is not a substitute for diagnosis; for specific advice, please consult a dentist.*