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Preventing and Treating Enamel Loss due to Erosion

The loss of tooth enamel due to acid erosion and acid wear is a growing epidemic. A 2012 study found that 22 percent of U.S. adults say they experience acid erosion, which can cause tooth sensitivity, transparency, discoloration, and more. As of August 2013, one in three young adults was already showing signs of tooth wear.

To help patients better understand the causes, symptoms, and effects of acid erosion, the Academy of General Dentistry (AGD) — in partnership with GlaxoSmithKline Consumer Healthcare — has compiled this fact sheet about the importance of protecting tooth enamel from acid.

What is acid erosion?

Enamel — the white-looking outer covering of the tooth crown — protects your teeth from daily wear and tear, as well as sensitivity to hot and cold foods or drinks. Acid erosion occurs when acid in the foods and drinks you consume wears away your enamel. Erosion exposes your teeth's inner layers, which increases sensitivity and makes them more susceptible to cavities or decay. It also can leave your teeth looking cracked, transparent, and discolored.

What factors can cause acid erosion?

Today's diets include many foods and drinks that contain acid that can erode teeth. Beverages that can cause erosion include carbonated soft drinks, energy and sports drinks, pure fruit juice, wine, and coffee. Studies have shown the enamel damaged caused by sports drinks is three to 11 times greater than that caused by cola beverages. Experts believe that consuming four or more acidic foods and drinks a day can increase the risk of acid wear, according to GlaxoSmithKline.

Acid erosion also can occur as a result of your teeth's exposure to stomach acids due to some medical conditions, including gastroesophageal reflux disease and bulimia. In addition, environmental factors, including friction (bruxism) and abrasion (brushing too hard), can cause erosion.

What are the signs and symptoms of acid erosion?

- *Sensitivity.* Since your protective enamel is wearing away, you may feel pain when you consume hot, cold, or sweet foods and drinks.
- *Discoloration.* Teeth can become yellow as the dentin, the second layer of the tooth, is exposed.
- *Rounded teeth.* Teeth may have a rounded or "sand-blasted" look.
- *Transparency.* Your front teeth may appear transparent near the biting edges.
- *Cracking.* Small cracks and rough areas may appear at the edges of your teeth.
- *Cupping.* Small dents may appear on the chewing surfaces of your teeth.

How is acid erosion treated?

You can reduce sensitivity at home by using specially formulated toothpaste or over-the-counter enamel-building products. These products are designed to reharden (remineralize) tooth enamel to make it more resistant to acid; however, there are no products that can reverse the damage caused by erosion. Check with your general dentist before you try any new dental products.

At the dental office, if enamel loss is minimal, your dentist may apply a bonding material that will protect your tooth and improve its appearance. If the enamel loss is significant, your dentist may recommend covering it with a crown.

What can I do to prevent acid erosion?

- Cut down on your consumption of carbonated soft drinks, sports and energy drinks, and pure fruit juice.
- Avoid sugary snacks.
- Drink water throughout the day.
- Drink acidic drinks with a straw. Also, don't swish these liquids around or hold them in your mouth for long periods of time. This helps prevent acid from coming in contact with your teeth.
- After consuming acidic drinks, rinse your mouth with water to neutralize the acids and wait before brushing your teeth. Acidic foods and drinks soften the enamel, which then can be damaged by the abrasive action of brushing. Wait at least 30 minutes before brushing to allow your mouth to produce enough saliva to neutralize the acidity and allow the enamel to harden.
- Chew sugar-free gum, which helps your mouth produce more saliva to remineralize your teeth.
- Brush with a soft-bristle toothbrush, and be sure your toothpaste contains fluoride. Ask your dentist about whether you should add a fluoride mouthwash to your daily oral health care routine.
- Don't let your child consume highly acidic drinks or fruit juices in his or her sippy cup or bottle. The sugar in these beverages can cause cavities in your baby's teeth, leading to "baby bottle tooth decay." Instead, let your child finish his or her bottle before bedtime.

For more information about acid erosion, visit *www.agd.org/aciderosion.*

Academy of General Dentistry™

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