



Teeth Whitening

In Search of the Perfect Smile

By Shannon Leahy

The fascination with shiny white teeth is not a modern-day phenomenon. Dentistry's 9,000-year-old history includes some of the most sophisticated civilizations and minds.

Prehistoric man drilled perfect holes in teeth; mummies are regularly unearthed wearing crude metal bands resembling braces; Aristotle compared human and animal dentitions; and Leonardo da Vinci studied, dissected and sketched teeth formations.

Today, 80 per cent of adults want a better smile, which is increasingly defined as whiter and brighter teeth. Not surprisingly, whitening procedures, whether performed at home or under the supervision of a dentist, have increased by more than 300 per cent, according to the American Academy of Cosmetic Dentistry.

"There's no evidence that these treatments are unsafe," says Dr. Irwin D. Mandel, founding director of the Center for Clinical Research in Dentistry at the Columbia University School of Dental and Oral Surgery in X city, state. But, the renowned researcher warns, "whitening is a strictly cosmetic procedure that has nothing to do with the basic health of your teeth. It's no substitute for careful flossing and brushing, and regular office cleanings and checkups."

What Shiny Teeth You Have: How Whitening Works

The two chemicals used in almost all teeth-whitening systems, from lasers to strips to toothpaste, are hydrogen peroxide or carbamide peroxide (sometimes called urea peroxide). The higher the amount, the faster the action and the brighter your pearly whites. Depending on the concentration, the peroxide compound brightens the surface of the tooth, as well as the next layer below the dentin. The pulp, or the innermost part of the tooth, remains untouched and unaffected by bleaching.

Higher concentrations of peroxide are permitted for in-office formulas (such as ZOOM! and customized bleaching trays), because a dental professional has precise control over the administered application. Professionally bleached teeth, on average, will stay white for a year or more, depending on your diet and lifestyle (see Stain Culprits).

Home tooth-whitening kits are similar to professional ones (and significantly less expensive), but results are unlikely to be as dramatic or long lasting. According to Health Canada, over-the-counter (OTC) teeth-whitening products are considered safe, as long as they are used as directed and on healthy teeth. Side-effects are generally few, but

may include temporary teeth sensitivity and gum irritation.

However, people with sensitive teeth, gum disease, worn tooth enamel or a peroxide allergy should avoid using such products. It's recommended that women who are pregnant or are breast-feeding refrain from whitening their teeth, until advised by their dentist or obstetrician.

Healthy Mouth, Healthy Body

We all have plaque in our mouths, made up of hundreds of bacteria that, for the most part, are harmless (see Periodontal Disease sidebar). But, depending on the severity of oral infection, the same plaque that causes tooth decay can also contribute to the amount of plaque in our arteries. When bacteria moves out of the oral cavity and into our bloodstream, the body's organs, especially the heart, are at greater risk of infection. Poor oral health is proving to be a contributing factor to disorders such as heart disease, stroke, diabetes and pre-term births. For example, research is putting forth evidence that people with gum disease are more likely to suffer a heart attack than those with healthy gums.

Considering the Canadian Dentistry Association expects nine out of 10 Canadians to develop gum disease at some point in their lives, it's imperative the basic tenets of oral health - regular brushing, flossing and dental checkups - not be overshadowed by the dazzling promise of white teeth. Your teeth may be bright, but are they alright? Ultimately, only your dentist knows, so check up on your oral and physical health by checking in with your dentist.

Eat This: Healthy Diet, Healthy Teeth and Gums

Along with regular dental care and cleaning, diet plays a crucial role in keeping your teeth and gums infection-free. When you consider the growing amount of research that links oral health to physical well-being, there's plenty to smile about by committing to a healthy diet.

Cynthia Sass, a registered dietician and spokesperson for the American Dietetic Association, warns against sugar- and carbohydrate-laden foods, which encourage the formation of plaque. She encourages eating a "balanced diet that includes whole-grain carbohydrates, plant-based fats, lean proteins, dairy or vitamin D-rich dairy alternatives, fruits and vegetables." Sass also recommends vitamins C, D, E and omega-3 fatty acids to "increase bone strength, while calcium and vitamin D aid in bone and tooth retention."

Not surprisingly, the consumption of sugary foods that stick to your teeth, things like chewy candy, should be eaten in moderation. After eating sticky foods (which are usually carbohydrate-packed), brush your teeth as soon as possible. Plaque takes only minutes to start forming whether you've eaten an apple or indulged your sweet tooth.

Less White, Less Bright: Stain Culprits

Regardless of what we eat and drink, our teeth darken over time.

White Teeth, Red Gums: What You Need to Know About Periodontal Disease

Your teeth can be whiter than white, but if they're held in place with red, puffy or bleeding gums, your smile might not be as healthy as you think. Oral infection can range from mild gingivitis, characterized by gums that bleed easily, to periodontal (gum) disease, occurring when bacteria is so extensive it penetrates the gum line and moves into the bone and tissue surrounding the teeth. Left untreated, bacteria can enter the bloodstream and affect the health of your body's organs.

According to the internationally renowned Mayo Clinic in the United States, if you answer yes to the majority of questions below, it's time to flash those pearly whites at your dentist.

- Do your gums bleed when you brush or floss your teeth or when you eat hard food?
- Do you have pain in your mouth?
- Have spaces developed between your teeth?
- Do your gums appear swollen or feel tender?
- Are your gums pulling back from your teeth?
- Do you have bad breath?
- Do you have pus between your teeth and gums?
- Has your bite changed?

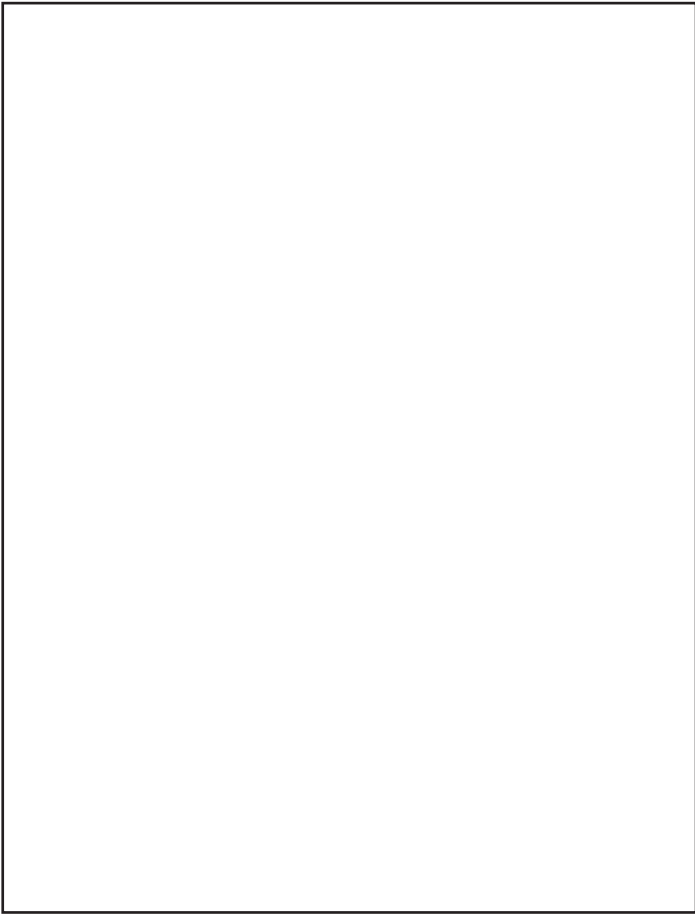
So, it helps to avoid certain foods, beverages and substances that discolour teeth. Be especially vigilant after an at-home or in-office whitening treatment, because your teeth are more susceptible to absorbing stains. Avoiding substances that stain teeth will make your bleaching results last longer.

A good rule to follow: if a food or beverage can permanently stain clothes or carpets, it likely can do the same to your shiny white teeth. Some of the biggest stain culprits include: tobacco, coffee and tea, red wine, carbonated colas, fruit juices (especially grape), berries, tetracycline (an antibiotic) and excessive fluoride.

It's Not the Product, It's You

Teeth that are naturally grey or grey/brown won't lighten as well as those that appear yellow or yellow/brown. Yellow stains (more and more common after age 40) usually respond best to bleaching. Stains that are grey are not considered good candidates for at-home or in-office bleaching procedures.

Poor bleaching results are also likely if your teeth have been ►



bonded or your front teeth have been filled with tooth-coloured fillings. The bleach is unable to change the colour of the dental work, so, for example, bonding materials may stand out among the newly whitened teeth. In such cases, dentists may recommend more extensive (and expensive) cosmetic dentistry options, such as bonding, blending resin materials to create a colour that matches your teeth or porcelain veneers (thin, custom-made shells that cover the front side of the teeth). ❗

So Many Bright Ideas

If you're confused by the plethora of dental products on the market, you're not alone. Below are some of the most popular whitening procedures available at your local supermarket, drugstore or dentist office.

Sugarless whitening gum

For less than a cup of coffee, whitening gum's peroxide agents remove surface stains and claim to prevent new stains from forming. The gum can be chewed every day for about 20 minutes, but most brands suggest usage of no longer than 14 consecutive days.

Whitening toothpaste

Ranging from a toonie to \$12, these kinds of toothpastes promise to brighten your smile by one or two shades. Abrasive ingredients, such as baking soda, carbamide peroxide and silica, work their white magic on surface stains. Be sure to inform your dentist that you're using whitening toothpaste, since overuse can damage to tooth enamel.

Over-the-counter whitening strips or wraps

Although not the most comfortable or attractive-looking product, strips coated with peroxide gel, applied at home, are increasingly popular. Applied twice a day for 30-minute intervals, the two-week ritual results in whitening that lasts at least six months. Teeth sensitivity, temporary white spots on teeth and gum irritation are common drawbacks. Prices can range from \$27 to \$65.

Take-home bleaching kit from your dentist

Not surprisingly, the best and longest-lasting whitening results come from the dental office. Ranging from \$250 to \$275, customized mouth trays (resembling a mouth guard) are lined with bleaching gel and worn overnight for two weeks. A more concentrated gel can be purchased, reducing treatment time to four nights. Results can last up to a year, and additional treatment can reverse fading. Some people complain of general discomfort, if an ill-fitting tray disturbs their sleep.

Zoom! In-office system

For 60 minutes, a dentist shines a UV lamp on your teeth, which has been coated with hydrogen peroxide. Smiles are whitened by up to eight shades and stay that way for about three years. Definitely not a treatment for people with sensitive teeth, who are light-sensitive or have had extensive dental work.

