

House Call

What's behind that bright smile?

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with Ruth Padget Albright



Millions of Americans are seeking whiter teeth and brighter smiles. What makes our teeth lose their original whiteness? Age is the biggest contributor to tooth color, but trauma can also be a factor. Studies show that as people age, their teeth become more yellow. Aging turns all the teeth yellow, as opposed to trauma, which may affect just one tooth. Trauma disrupts the blood supply to the tooth, causing the nerve to die.

What about the effects of coffee, tea, red wine, and smoking? Let's take coffee, tea, and red wine first. We call the stains they make "extrinsic" because they are on the outside of the teeth. These stains can be removed by a dental hygienist when the teeth are cleaned. Extrinsic stains are not what we aim at with whitening agents. We aim at intrinsic stains, ones that affect the enamel and the dentin inside the teeth.

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Smoking causes both extrinsic and intrinsic discoloration. Smokers' teeth can be bleached, but I discourage it because they discolor again very quickly. Some medications can also discolor teeth; for instance, tetracycline can turn teeth gray. These teeth can be lightened, but it takes much more bleaching.

Is tooth whitening a recent innovation? The first documented case of tooth whitening was in 1877, but the practice did not become widespread until 1989. Today

tooth whitening is a huge business in this country. In fact, cosmetic dentistry has grown dramatically. Since we now understand the causes of decay and are learning how to treat gum disease, cosmetic dentistry has become a very large part of dental practices.

How does tooth whitening work? Hydrogen peroxide is the magic ingredient that lightens teeth. Hydrogen peroxide is used in different forms and often mixed with another product to form carbamide peroxide. The American Dental Association has accepted only a 10 percent concentration of carbamide peroxide as "safe" and "effective." One-third of carbamide peroxide is hydrogen peroxide. Many over-the-counter products have higher concentrations and are not endorsed by the ADA.

I divide the procedures into ones that are done in the dentist's office and ones that are done at home. The in-office procedures cost about twice as much because

the dentist supervises the whole process.

The most popular in-office procedures are marketed under the trade names BrightSmile and Zoom. These produce fast results, but the processes are not ADA approved because they use higher concentrations of hydrogen and carbamide peroxide. A dentist is able, however, to isolate the soft tissue so that it is not damaged and to assure that the patient does not ingest the solution. A laser is used to help the solution penetrate the teeth faster, but

the jury is still out on whether the light source really helps whiten the teeth.

At-home products include trays, whitening gel, whitening strips, and several other products. Trays that are fitted by a dentist are the most effective. These are very thin devices that contain the bleaching solution and are worn over the teeth at night or during the day. The over-the-counter trays are very bulky and allow some of the solution to leak out and be ingested. Trays fitted in a dentist's office are much thinner, are very comfortable to wear, and are quite stable.

Are there side effects? Some 50 percent of people will have some tooth sensitivity, and about 25 to 30 percent will have some soft-tissue sensitivity. These side effects will disappear when you stop bleaching and may decrease even while you are bleaching.

How long does whitening take and how long does it last? The bleaching regimen is usually about two weeks, but may go up to as much as two months if the teeth are very dark. Tetracycline-stained teeth may take six months to a year to whiten. The whitening can last from one to three years — or a lifetime. Teeth can be re-bleached, which takes about one-fifth the time as the initial bleaching.

Do crowns and bridges bleach as well? Unfortunately, restorations don't change color. If a person has a restoration in the front, I would recommend that patients plan to replace it afterward or not to bleach, because otherwise he or she will probably look mismatched afterward.

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For more information on tooth whitening, see Dr. Matis's Web site at www.bamatis.com.