

The tooth-whitening revolution

It seems that everybody in America wants whiter teeth to make them feel younger and to provide beautiful smiles with the accompanying increase in self-esteem. It is amazing that an appearance change as simple and noninvasive as tooth whitening has had so much influence on the profession and the people we serve.

It is enlightening to observe the differences in knowledge about esthetic dentistry and the levels of interest in esthetic dental procedures among the residents of various countries. Recently, I was speaking in a developing country, where I visited a dental hospital. In the hospital were dental patients who had severe, life-threatening infections that had spread from untreated, abscessed teeth. The residents of that area were fortunate to have any remaining teeth in their mouths at the age of physical maturity, and they had no knowledge of esthetic dentistry. On the same speaking trip, I visited a country in which a missing tooth or two actually was considered to be a symbol of masculinity and maturity, and a gold-colored restoration in the front of the mouth definitely was a positive status symbol, an indication of affluence. The high

level of interest in esthetic dentistry we see in North America had not arrived on those shores.

When I returned home, one of my first patients was a young American woman who had a few small white spots on two upper anterior teeth. This young woman felt that she had a terrible esthetic impediment that was retarding her social acceptance, dating and popularity among her peers. That caused me to ponder the differences I had observed in dental knowl-

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edge and interest in esthetic dental procedures. It became obvious that dentistry in the United States has evolved from primarily a health service, treating oral disease and pain, to a hybrid profession that in some cases is physical health care and in many other cases is an elective cosmetic service.

As a past president of the

American Academy of Esthetic Dentistry, I am among the first to acknowledge that simple cosmetic/esthetic dental services can have a far more positive influence in the life of a patient than the routine restoration of a carious tooth. However, the esthetic revolution in dentistry has had both good and bad results. On the positive side, almost everybody wants whiter teeth and, when educated, patients often choose to undergo one of the several available bleaching treatments. Among the negative changes has been an emphasis on selling patients esthetic treatment that may or may not be important, or even necessary, to them. Bleaching vital teeth may or may not be necessary.

In this article, I consider the various forms of tooth-color lightening, as well as the ethical dilemma some dentists feel as they involve themselves with this concept.

WHEN IS TOOTH WHITENING NEEDED?

Various physiological conditions exist that may be esthetically improved by lightening tooth color. Among these conditions are tetracycline staining, fluorosis, amelogenesis imperfecta, dentinogenesis imperfecta,

chemical or food staining, and hereditary opalescent dentin. Most patients with these conditions desire to have their tooth color changed so that their teeth appear to be within the range of natural tooth color. Unfortunately, not all of these conditions can be improved using current tooth-bleaching techniques. On the other end of the spectrum are patients who have tooth color well within the range of color for their age, but who feel their teeth are too dark.

In my opinion, it is the professional responsibility of dental practitioners to educate patients about the color of natural teeth and to advise them when tooth-color lightening should be considered. Many patients desire tooth-color lightening when their teeth are within the range of natural tooth color. Teeth that are unusually white for a given age range do not appear natural and actually can distract from the person's natural appearance, just as can dyed, totally black hair on an elderly person. Extremely white teeth can be difficult to restore because of the lack of restorative materials to match the extra-white colors.

In my opinion, it is important to educate patients about the availability of tooth-color lightening when the practitioner feels it would be desirable for the patient, but it is not appropriate to promote tooth-color lightening for every patient just to boost the office's bottom line.

AT-HOME WHITENING

Dental patients have had tooth bleaching offered to them for more than 50 years, but some of the older techniques were painful, time-consuming and potentially dangerous. The

nightguard home bleaching procedure popularized tooth-color lightening. It has been used for many years and is a highly successful and safe technique. For most dental patients, at-home bleaching probably is the most desirable concept. Dentists or staff members supervise the color change and its potential side effects, and patients are advised about the progress and acceptability of the color change.

For at-home bleaching, most dentists are using about 15 to 20 percent carbamide peroxide gel

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in fitted trays, daily for up to several weeks until the desired tooth color is achieved. Treatment times range from a few minutes to overnight. On the basis of findings by Clinical Research Associates,¹ I prefer to direct patients to use the at-home method for two hours in the evening or at another convenient time. The loaded trays are placed in the mouth for about one hour, cleaned out, reloaded and replaced in the mouth for one more hour. This technique is continued for about seven to 10 days. If the patient experiences tooth sensitivity, the treatment should be discontinued for a day or two until the sensitivity goes away. Fluoride gel can be applied with trays or brushed on to reduce postbleaching tooth sensitivity (Prevident, Colgate-Palmolive Co., New York).

The cost of bleaching both

upper and lower arches of teeth with this technique is about the same as the cost of one porcelain-fused-to-metal crown, which is a good analogy to use in educating patients.

IN-OFFICE BLEACHING

Variations of the in-office bleaching procedure were used for several decades with success, but most practitioners were pleased to change to at-home bleaching when it was introduced. Hydrogen peroxide bleaching solutions and gels are used in the office setting. Most in-office techniques bleach teeth in about one hour, whether or not a light is used.²

These are a few of the commercial in-office bleaching systems available:

- BriteSmile Professional Teeth Whitening Treatment (BriteSmile Inc., Walnut Creek, Calif.): the patient must use a BriteSmile Whitening Center or a dental practice that has contracted with BriteSmile to be an Associated Dental Center.
- Rembrandt Bleaching System (Den-Mat Inc., Santa Maria, Calif.): the name of this system may be familiar to patients because of the long-time availability of a toothpaste by the same name sold by the same company.

- Zoom! Chairside Whitening System (Discus Dental Inc., Culver City, Calif.): purchase of the bleaching light and the bleach allows the practitioner to use the method and gives the practitioner access to technical support from the company.

Most dentists prefer at-home bleaching, because in-office bleaching involves extra office time, increased liability of the staff members who are applying bleaching solutions and diver-



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sion of staff time to the procedure. However, some dentists and personnel who are heavily involved with cosmetic procedures prefer to have control of the bleaching process in their offices.

The use of a light to aid the bleaching process may be

impressive to patients. However, the action of light in accelerating or enhancing bleaching is still under investigation.^{2,3} In-office bleaching does produce a faster result than at-home bleaching. The cost for a full-mouth in-office tooth lightening is roughly equivalent to the cost of one crown.

I prefer to use the in-office concept when the at-home bleaching concept has not light-

ened one or more teeth adequately, or if only a few teeth need to be lightened.

THIRD-PARTY PAYMENT FOR BLEACHING/WHITENING TEETH

Usually, bleaching is included in third-party benefits only when the tooth is nonvital. In such cases, the Current Dental Terminology, or CDT, code is D9973 (external bleaching, per tooth). The CDT code for enamel microabrasion to remove external color spots is D9970 (enamel microabrasion). When bleaching an entire arch or mouth of teeth, use the CDT code D9972 (external bleaching, per arch). Unless the desired color change is related to one of the uncommon conditions listed at the beginning of this article, it is doubtful that third-party coverage for the process will be available.

SUMMARY

Bleaching teeth is here to stay. Both men and women (though

perhaps a majority of the latter) want their teeth lightened. The most popular technique still is at-home bleaching, but some patients and dentists prefer in-office procedures. Practitioners are advised to select the technique that fits their office needs best and to inform patients of its availability. Regardless of which technique is used, the various bleaching techniques produce the same result when used properly. ■

The views expressed are those of the author and do not necessarily reflect the opinions or official policies of the American Dental Association.

Educational information on topics discussed by Dr. Christensen in this article is available through Practical Clinical Courses and can be obtained by calling 1-800-223-6569.

1. Clinical Research Associates. At home tooth bleaching: state-of-the-art. CRA Newsletter 2001;25(2):2-4.
2. Clinical Research Associates. Why resin curing lights do not increase tooth lightening. CRA Newsletter 2000;24(8):3.
3. Clinical Research Associates. Vital tooth bleaching, in-office. CRA Newsletter 2000;24(4):1-3.