

INFORMATION ABOUT TOOTH WHITENING

Tooth whitening has been used in dentistry for many years. Traditionally, harsh chemicals in combination with heat or light were necessary to whiten vital teeth. There were many side effects and concerns regarding this treatment. Most dentists found this procedure too difficult and risky for patients. In 1968, an orthodontist serendipitously discovered that 10% carbamide peroxide in a mouthguard caused tooth lightening. Until the mid 1980's this technique was not studied in the laboratory or published. Dr. Van Haywood, a friend and colleague at the Medical College of Georgia, published the first article regarding this technique and is the leading authority in this field. Through reading and personal communication with Dr. Haywood, we have been using his technique for tooth lightening since 1989. This technique, called Nightguard Vital Bleaching is highly desirable for many reasons:

- 1) Tooth lightening occurs in 92% or more of patients.
- 2) It is a dentist prescribed-home applied treatment and very little appointment time is required.
- 3) No anesthetic or invasive procedures are required.
- 4) It takes a relatively short time (about 6 weeks).
- 5) It is very safe (our research shows that "when used in a professionally supervised manner, nightguard vital bleaching is as safe as any other routinely used dental procedure").

There are many causes of tooth discoloration. Some of these may indicate an underlying pathologic condition requiring a different dental procedure. If nightguard bleaching is indicated, the dentist and staff must determine a baseline status, the presence of any soft tissue lesions, and the total number and location of existing restorations. Crowns, veneers, composites, and other materials will not change color. Therefore, following whitening, it may be necessary to replace restorations to match the new lighter tooth color.

At the beginning, there were still some unknowns or questions about the safety and longevity of this procedure. At this time, our research continues to uncover positive side effects from its usage. Interestingly enough, the bleaching agent has been found to kill the bacteria that cause periodontal disease and tooth decay. Safety and efficacy is dependent upon a proper examination and diagnosis. A precisely fabricated and fitted prosthesis and constant monitoring by the dentist and staff is a requirement for success and safety.

The two most common side effects are:

- 1) 34-52% of patient's report that some teeth are more sensitive to temperature changes during treatment. This tends to be transient and usually returns to normal following treatment. Modifications in the may be necessary in the treatment regimen.
- 2) 13-31% of patients report tissue irritation on isolated portions of the gums. This can be caused by mechanical or chemical irritation. Modifications in the mouthguard and/or treatment regimen will generally resolve the problem.

Other limitations include inability to wear for sufficient time (lifestyle, personal preference) and aversion to the taste. At this time, treatment is not recommended for pregnant women or nursing mothers. There is no age limit, but generally, we do not recommend this treatment for children under 14 years of age.

Although most teeth do lighten through this procedure, some results may be limited due to the cause of discoloration or patient compliance. Some stains may require extended time. Also, all other forms of esthetic dentistry (bonding, porcelain veneers and crowns) are available and may actually provide a more esthetic results in some cases. We often combine bleaching with other procedures to get an ultimate esthetic result. Our experience indicates that the color change lasts 3-6 years or may be permanent.

Many patients ask us about television or drug store advertised products for tooth whitening. These products may be whitening toothpaste, whitening systems or home made mouthguards. Toothpastes attempt to lighten by abrasion or chemical means. Research indicates that the enamel may be harmed through dissolution or softening through abrasion from the application technique. Many pastes simply

“color” the tooth with white pigment. Also, the short application or exposure time with paint-on systems has not been shown to be effective. Homemade mouthguard systems are questionable due to the lack of proper examination and diagnosis and probability of increased side effects due to poor fit of the prosthesis.

In recent years, there has been an increase in unprofessional advertising and boastful claims relative to bleaching techniques. Britesmile, Whitestrips, and Laser bleaching have been the most prevalent in this area. Most of these techniques are directed toward “faster, more immediate” results. The more than 10 years of Dr. Heywood’s research has shown that 10% carbamide peroxide and a very accurately fitting tray will yield superior results with no tooth or tissue damage. These 3 new techniques use either a poor fitting appliance, inappropriate chemical, or heat to produce the effect. Therefore, we do not recommend any of these systems for our patients.

At present, nightguard vital bleaching is the best conservative treatment for tooth whitening for most cases.