

Cosmetic Teeth Whitening Improve the Appearance of Your Smile

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Abstract

A great approach to improve the appearance of your smile is with teeth whitening (also called as bleaching), which is a quick, non-invasive dental procedure used to modify the color of natural tooth enamel. There are several techniques to whiten teeth since it has changed through time and currently ranks as the most important cosmetic issue for most patients. The most common technique is employing a home tooth whitening kit, which will significantly whiten teeth. Since old fillings, crowns, etc. do not function with teeth whitening since it only works on natural tooth enamel, it is crucial to consider replacement. After bleaching, any restorations will be replaced so they match the freshly bleached teeth. Tooth whitening is a temporary procedure. Every few years, you could need a touch-up, and more frequently if you smoke, drink coffee, tea, or alcohol.

Keywords: Tooth whitening, Bleaching, Dental health, Tooth decay, Tooth loss, Enamel degradation

Introduction

People may need to have their teeth whitened for a variety of reasons, but the most common one is aesthetic; just as people desire lighter skin tones, they also need a brilliant smile to display in order to stand out from the crowd. People who are desperate to whiten their teeth quickly—perhaps before a wedding or for another occasion—turn to commercially available whiteners that include high quantities of hydrogen peroxide and carbamide peroxide. Particularly important tooth whitening techniques, such the penetration of carbamide peroxide into the dental pulp, were quite popular a few years ago. However, questions about the best way to whiten teeth without sacrificing their structural integrity and dental health have been raised. However, residents' and oral bacteria's ongoing harmful effects on the tooth component and vitality have led to a need for teeth whitening [1-5].

Therefore, many of the commercial teeth-whitening solutions on the market today employ hydroxyl carbamide or hydrogen peroxide, two synthetic chemical substances. Even while just a little amount is included in whitening strips and mouthwashes, continued use may have greater negative consequences since the enamel gradually erodes, exposing the dentine. The primary issue with these substances as they relate to the oral mucosa is their chemical biosafety. Chemical whiteners can always be chemically modified and interacted with by bacteria present in the oral cavity, potentially leading to harm. However, it appears that carbamide peroxide possesses antimicrobial properties. Some methods of teeth whitening came under fire and it became critical to address accurate teeth whitening with strict safety measures. For instance, a new method uses modified titanium dioxide nanoparticles triggered with blue light to safely whiten teeth without harming enamel. When the dentine is compromised, the bacteria that cause tooth decay can quickly spread to the pulp of the live tooth, leading to tooth loss. Natural teeth whitening substances provide bleaching effects while improving dental health and preventing enamel degradation.

Particularly, the acidic pHs of plaque and saliva have a significant role in the emergence of dental caries. According to research, the pH of saliva in the oral cavity is typically between 6.2 and 7.6, with an average value of 6.7. The activity of salivary enzymes, the processes of enamel mineralization and remineralization, microcirculation, microflora activity, and the specific and nonspecific resistance of oral tissues are all influenced by the amount of H⁺ ions present in the oral cavity. Saliva's

pH is continually fluctuating; for instance, just after eating, the pH is frequently near to neutral (6.5–6.8). The pH shifts mostly in an acidic direction after consumption (saturated saliva) and can occasionally go below 4.0, which is thought to be the cause of remineralization and the development of dental decay. It is thought that the pH should be between 6.8 and 7.4 during teeth whitening procedures to stop demineralization brought on by dental caries or tooth decay. According to this viewpoint, new tooth-whitening formulas should be pushed.

Today's population as a whole is becoming more aware of and interested in dental esthetics. A cost-effective way to enhance dental esthetics is through tooth whitening procedures. These teeth-whitening techniques can be helpful on their own or as a supplement to other restorative procedures. The process of making a substance more comparable in color to a desirable or standard white, regardless of the method employed, is collectively referred to as tooth whitening. Carbamide peroxide, which releases around one third of its content as hydrogen peroxide, is principally responsible for the results of tooth bleaching, which is described as chemically induced whitening. There may be a rise in demand for cosmetic dentistry operations as well as higher expectations for treatment success as the general public becomes more aware of dental esthetics. Determining the science underlying teeth whitening techniques, their precise indications, and success rates, rates of rebound, potential side effects, and restrictions is therefore important for dental professionals. Iatrogenic discolouration can be brought on by dental operations such pulp extirpation, which causes dentin bleeding, pulpal tissue left behind after root canal therapy, root canal irrigants, or root canal restorative materials. A reddish-brown precipitate might form when chlorhexidine and sodium hypochlorite irrigants are used. Some tetracycline-containing endodontic materials, including Ledermix, Endofill, Tubuliseal, Gutta Percha, and Grey Mineral Trioxide Aggregate, might cause inherent coloring [6-10].

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Patients may choose from a variety of over-the-counter (OTC) teeth whitening products and use them on their own. Whether a product can be sold over the counter depends on the amount of bleaching agent that it contains. The various regulatory agencies in each country set the limits on the permitted concentration. The formulas for over-the-counter teeth whitening products include, among others, dentifrices, mouthwashes, intraoral strips, varnishes, and gels. Abrasives have shown to be the most efficient ingredient in whitening dentifrices throughout history. These work by getting rid of and stopping the development of extrinsic stains. The degree of whitening that may be accomplished using these products is constrained by rules on the maximum permissible abrasive content due to the possible impact that abrasives may have on the dentition. The effectiveness of whitening toothpastes that include low concentrations of hydrogen peroxide or carbamide peroxide is constrained by the short contact time with the teeth when brushing in addition to the low concentration. The whitening process is sped up by bleaching and using whitening toothpaste concurrently with and after bleaching. Dentifrices for teeth whitening now contain the pigment blue covarine. This technique whitens enamel by painting it with blue pigment in order to produce an optical appearance of whiteness. It has been discovered that toothpastes containing covarine are equally effective as traditional whitening toothpastes and non-whitening toothpastes. Whitening mouthwashes have often been proved to be unsuccessful at changing tooth color, even after up to 30 days of contact, and only contain a modest quantity of hydrogen peroxide (1.5%). Most whitening strips have a hydrogen peroxide content of 5–14%. The active bleaching chemicals are applied to the teeth using an adhesive agent, which releases them gradually over a 6–10 minute period.

Conclusion

Procedures for tooth whitening offer a conservative way to enhance aesthetics. These teeth-whitening methods work well alongside other restorative procedures as well as on their own. The concentration of the bleaching chemical and the duration of exposure time affect how well tooth bleaching works to whiten teeth. Tooth sensitivity, gingival irritability, changes to the enamel microstructure, and external cervical resorption are a few possible side effects of bleaching. This page has already covered the possible negative effects of bleaching on restorative materials. Non-vital bleaching may have unfavorable effects, including external cervical resorption (ECR). According to Rotstein, 10% of

teeth contain anatomical flaws that might allow hydrogen peroxide to pass through the dentinal tubules during intracoronal bleaching and reach the tooth's surface. Dentin is denatured as soon as the hydrogen peroxide comes into contact with the periodontal tissues, which also starts the host immunological response. Larger tubules in younger people may make them more vulnerable. The use of lower bleaching agent concentrations, correct cervical seal installation, and a decrease in the use of the thermocatalytic process are all responsible for the decline in the number of reported cases of external cervical resorption over the years. A history of trauma, orthodontic therapy, a high concentration of hydrogen peroxide, or the thermocatalytic technique all enhance the risk of ECR associated with internal bleaching.

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