COMMENTARY

THE INFLUENCE OF TIME INTERVAL BETWEEN BLEACHING AND ENAMEL BONDING

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Vital bleaching has become a common treatment modality among patients for changing the appearance of their teeth and smiles. Professionally dispensed vital tooth bleaching refers to the materials, techniques, and devices used for vital bleaching that are dispensed in the dental office. In recent years, patients have had increased interest in the use of bleaching for treatment of discolored teeth. Bleaching, especially at-home bleaching, has been of interest to dentists and patients alike because it is the most conservative, noninvasive treatment modality currently available to the dental clinician for changing the appearance of teeth. Bleaching is usually used to lighten the shade of teeth that are darkened as a result of intrinsic and extrinsic discolorations. These techniques can include a variety of concentrations of hydrogen and carbamide peroxide, in-office techniques with and without light or heat enhancement, professionally dispensed whitening strips, and tray bleaching. One aspect of tooth bleaching that has been on the increase in recent years is the over-the-counter purchase of peroxide-based tooth whitening products to lighten the shade and color of teeth similar to what is accomplished with professionally dispensed products. After bleaching, patients usually desire or need additional restorative treatment to complete the desired esthetic result. In some cases, clinicians do not appreciate the clinical ramifications and understanding during additional treatment when their patients bleach their teeth with hydrogen and carbamide peroxides.

The authors, Drs. Machado, Candido, Sundfeld, and colleagues, provide important insight into the importance of having control over the use of bleaching agents by our patients before proceeding with any enamel-bonding procedure. It is not unusual for patients with existing tooth-colored restorations—composite resins and porcelains—to desire replacement restoration to match the color of their newly bleached teeth. Success with adhesive procedures to enamel relies on the physical aspects of etching enamel, which creates microporosities within the enamel. The microporosities provide a polymerized adhesive resin with the benefits of enhanced retention of the composite restoration or bonded ceramic to the tooth structure combined with a resin seal that is resistant to microleakage. Microleakage can lead to postoperative sensitivity, marginal staining, and recurrent caries. The use of hydrogen and carbamide peroxide bleaching agents impairs the ability of a resin adhesive to penetrate the etched enamel. While the mechanism of decreased adhesion is controversial, a number of studies support interference with adhesion immediately after bleaching.

Clinicians need to understand the importance of communicating with their patients after vital tooth bleaching the next steps of the treatment. If an adhesive restoration is to be placed, based upon this research and others similar to it, there must be at least a 1-week interval between the termination of vital tooth bleaching with hydrogen and carbamide peroxide products. This 1 week after bleaching will assure a more predictable bond to the enamel. Also, for your consideration, there are times that, as practitioners, we are not aware whether or not a patient is bleaching their teeth. A patient might be using an over-the-counter bleaching product. This product might be a hydrogen peroxide strip or a carbamide peroxide gel applied with an over-the-counter tray or a carbamide peroxide whitening toothpaste. As part of your treatment plan with enamel-bonded restorations it is important to ask your patients, especially those with unusually white teeth, whether or not they have bleached their teeth and when was the last time the bleaching method was used.

This study is an important one to follow. Unexplained marginal staining of restorations or postoperative sensitivity may be the result of placing an enamel-bonded restoration on an enamel that has been compromised by recent tooth bleaching with hydrogen or carbamide peroxide-based whitening products.

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