COMMENTARY

Influence of Activated Bleaching on Various Adhesive Restorative Systems

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One of the most fascinating changes in recent years has been in the area of tooth bleaching. Although bleaching is not new, there are still many unanswered questions and controversies. Even the mechanism by which bleaching agents affect tooth structures is not well understood. This article presents the reader with a study of activated bleaching on various adhesive restorative systems and attempts to answer some of the questions. This article is concise, well written with proper methodology and study design. I especially appreciate the authors' discussion of the study's shortcomings.

A new type of ring-opening silorane composite was used in the study. The silorane-based composite is reported to have less than 1% volumetric shrinkage and there is no oxygen inhibited layer to be polished away.[1,2] However, the lack of oxygen inhibition layer of silorane composite with cationic polymerization raises the question of the bonding of incremental layers of the composite. Studies have shown that silorane-dimethacrylate composite showed the lowest shear bond strength among the groups, which was increased significantly by use of phosphate-methacrylate-based intermediate resin.[1] It is interesting to note that in the present study, despite the fact that silorane is reported to be not affected by oxygen, it still showed lower bond strength to bleached enamel.

The authors also used a galium-aluminium-arsenide laser to activate the bleaching agents. Such use of laser in bleaching protocol is still controversial since laser alone does not bleach teeth; it merely creates a reaction when the hydrogen peroxide comes in contact with the laser's beam. A recent study reported that the short treatment duration effected by activated bleaching may not have resulted in enough contact time to effect dentin color change.[3] A slower process may be indicated for more intensely tetracycline stained teeth. Generally speaking, dentists appear to be moving away from light-activated whitening—due to a number of reasons: lack of supporting clinical data, the expense of lights, and concerns for patient safety.

This study is an important one because it supports the allowance of time interval approach for bonding after tooth whitening regardless of the type of composite materials. It also highlighted the importance of not relying on manufacturer's information alone.

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