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COMMENTARY

COMPARISON OF EFFECTIVENESS OF TWO 10% CARBAMIDE PEROXIDE TOOTH-BLEACHING SYSTEMS USING SPECTROPHOTOMETRIC MEASUREMENTS

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The authors have addressed the question of determining which of two popular 10% carbamide peroxide bleaching materials is better, comparing one from Ultradent Products and one from Discus Dental. They have also addressed the problem that because shade tabs are nonlinear, they are not designed to determine color change but to match color.[1] To form a better comparison of the two products, the authors have used a spectrophotometer. Their results demonstrate that there is no difference between the two products. However, there are some subtle, additional insights to gain from this article.

One tray system used reservoirs and one did not, and there was no difference between the lightening effects. Although these are slightly different products, this result does support previous publications that state that reservoirs make no difference in lightening efficacy.[2–4] Generally reservoirs in trays were designed to reduce sensitivity by reducing the tight fit of the tray. However, in this study there was no significant difference in sensitivity scores, although the tray with the reservoir resulted in a slightly less frequency of sensitivity (39 vs 41%). Both tray designs were scalloped, so there is no comparison on gingival irritation.

It is also important to note that not all teeth had a visible color change. This observation reinforces that the dentist should not promise the patient a certain amount of color change as that change varies from patient to patient and tooth to tooth.

There are some concerns with the study design. Both of the products tested are designed for nighttime wear, but the authors only used them for only 4 h/d. Other studies would indicate that there is active material remaining even up to

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10 hours.[5–7] Although 4 hours is still a reasonable amount of time for treatment, wearing the tray overnight might have produced an even better result in the same time frame.[8]

Also, as in most articles, the bleaching time was set at 14 days as per the ADA guideline minimum. However, the original article describing bleaching and the original research on efficacy and longevity used 2 to 6 weeks of treatment time.[9,10] Also, the color change from the bleaching was apparently measured immediately after termination of bleaching, rather than waiting the recommended 2 weeks or more for the shade to stabilize.[11]

The authors mention the good research performed on 10% carbamide peroxide products with the ADA seal. However, although both of these companies have a 10% product that has the ADA seal, neither of the 10% products tested has the seal. At this point, the dentist must rely on the reputation of the company to know about safety and efficacy in the absence of published research.

The authors cite the problems with shade tabs not being evenly spaced, so the difference between any two shade tabs is not uniform. This has become a major problem in comparing different articles and claims for degree of efficacy. Use of the spectrophotometer helps, but it has its drawbacks also.[12,13] For one, in their use of the spectrophotometer, the authors do not employ a jig to ensure repeated placement.

Overall, the authors have provided the reader with a good idea that equally concentrated products from reputable companies that make good products will produce equal results.

DISCLOSURE

Dr. Haywood has served as a paid consultant and also has conducted research for both Ultradent Products, Inc. and Discus Dental Co.

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