Tooth Bleaching Options Raise Key Questions

Bleaching Expert, Dr. Van Haywood, compares treatment modalities

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"Doctor. I'd like my teeth to look whiter". As practicing dentists, we hear this every day. Fortunately, we can often address the desires through bleaching. but what is the most efficacious treatment, and what about issues of cost and post-op sensitivity. BriteSmile clinics are attracting patients through aggressive marketing campaigns, but is in-office bleaching any better than at-home bleaching? Is it safe? Cost-effective? Procter & Gamble will soon be selling whitening "strips" direct to the public. Do they work? How will dentists feel about such unsupervised treatment? Dr. Van Haywood, Professor of Oral Rehabilitation at the Medical College of Georgia. recently took time to answer these and other questions with GAGD Editor, Dr. Jack Newman. Dr. Haywood is one of the leading authorities on tooth bleaching, having co-authored the world's first article on night guard vital bleaching, and the first article on extended treatment of tetracycline stained teeth.

Q: We *are hearing more advertisements for in-office bleaching. specifically through BriteSmile clinics. What concerns do you have with this type of treatment?*

A: BriteSmile clinics use a *15%* hydrogen peroxide (roughly *35%* carbamide peroxide) activated by a plasma arc lamp for 90 minutes (plasma arc lamps are typically used for 10-16 seconds to cure composites). Obviously there is a concern for the pulp health from heating, and the gingival health from isolation needs. There is no research on safety or efficacy of this product at all. Isolation of the gingiva is a challenge, but the light attached to a stand is apparently helpful for the time duration. The clinics appeal to "tanning parlor" type boutique, and generally charge $500.00 for one session, both arches, two hours chair time. However, they only treat the anterior teeth. The stand-alone clinics do not require that the patient has a dentist of record who has examined the patient, do not take radiographs, and cannot offer any other form of bleaching, even if it is more appropriate. When a general dentist is providing this service. $250 goes to the company, the dentist signs a ten-year contract to do 250 cases per year. Touch-ups and recalls are at the dentist's expense. There is nothing to indicate that one treatment will be successful, especially in light of the CR research on lack of efficacy of lights to bleach. Comments I have heard are that the initial look is good (which could be a lot of dehydration), but in two weeks there is a noticeable darkening (like any other one treatment in-office technique), and the patient has to follow up with at-home bleaching in a custom tray. This raises the ethical question of how can you charge a patient for the in-office if they still have to do the at-home to complete the treatment? Also unknown is whether the whitening achieved from one visit is the maximum the patient could achieve through at-home use. It does not seem to be so. Although the theory exists that "jump starting" the patient with in-office will shorten the treatment time, that has not proven to be the case. It may help at-home compliance since the patient will see an initial change, but I cannot justify the cost since the outcome is no better starting with in-office than using at-home alone. In-office generally takes 2-6 visits to achieve reasonable whitening, and can only be evaluated l-2 weeks after treatment to determine the success. The cost/benefit ratio is not good for in-office bleaching over the long term.

Q: *So you see the best results from at-home bleaching?*

A: I've not had any in-office technique work to the level of what can be achieved with at-home bleaching. For at-home bleaching expect 2-6 weeks of treatment time. Tell your patient this. If they finish earlier, you are a saint, if it takes longer you are a prophet. I recommend a whitening toothpaste that has peroxide in it to maintain the whiteness for as long as possible. Bleaching patients are always told "this is going to last I to 3 years and then we have got to do something again. The question is, if you've got to do it again in three years, are you going to pay for in-office bleaching again or are you going to wear a tray for 1 or 2 nights and be back the way you were? We basically found that on the average it's about 1-2 nights of re-treatment for every week of treatment that you did originally.

Q: *Sensitivity can he a real obstacle with at-home bleaching for some patients. How do you manage this?*

A: One of the most significant advances in whitening is the use of potassium nitrate applied in the tray for sensitivity. It's the same ingredient that's been in desensitizing toothpastes for years. In toothpaste, it takes three weeks to measurably reduce sensitivity. If you put it in the tray for ten to thirty minutes, relief is almost immediate. Ultradent, Discus, and Den-Mat sell potassium nitrate syringes, but most of the time we tell patients to first try an OTC anti-sensitivity toothpaste in the tray instead. If that works, it saves them a trip to the office for professionally distributed products. Some patients may experience a gingival irritation from the use of toothpaste in the tray, and have to use the professionally-supplied products. However, there is a large variation in the toothpaste ingredients, even in the same company's products, so patients should try several flavors and brands. Sodium laural sulfate (SLS) has been associated with increased apthous ulcers, so using a product with and without SLS may be worth testing.

Q: *What can you tell us about the new Crest whitening strips* "?

A: The \Vhitestrips are 5.3% hydrogen peroxide (roughly *15%* carbarmide peroxide) contained in a "scotch-tape" like application. The earliest papers have just appeared in the July Compendium, but in their research, they did not do a prophy prior to initiating treatment, so they are removing a combination of extrinsic and intrinsic stain. Currently, they are being sold to dentists for about $20 to get the dentist's approval. However, the strips will be sold OTC by P&G in spring 2001 for $44 for 28 top and bottom strips (enough to do both arches for 30 minutes. two times a day for 14 days). Obviously lacking in this OTC approach is the proper examination, diagnosis, radiographs, custom treatment and monitoring of treatment. How well they work is still unknown, but they apparently do some intrinsic whitening. More information is being researched around the country, since their initial research did not use the same measuring techniques and patient populations as previous bleaching research. The strips may fill a niche for dentists sending patients to the grocery store to purchase, hence the introductory phase. Whether this OTC approach will strain the relationship between the profession and P&G remains to be seen. It certainly puts the dentist-patient relationship in an unusual situation, since we do not have great research from which to speak at this time. Certainly extended treatment times will not be cost effective, nor will there be any avenues for touch-up treatment other than to repurchase a kit. Taste is an issue also, and the fact that they only treat the anterior teeth. Safety issues from ingestion are still unresolved, but it is probably not a problem.

Q: *What is your' protocol for treating tetracycline stains?*

A: At-home bleaching should be the first option. Once, these patients weren't considered candidates for bleaching, but with the recent development of an extended protocol, we can eliminate many of these stains. There are many types of tetracycline antibiotics and they produce different colors of discoloration in the teeth. The blue-gray discoloration is most difficult to remove. Also, the location of the staining is important. as discoloration at the gingival also has a poor prognosis. Banded teeth from multiple brands may require composite bonding to mask one of the colors after the others have been lightened. Patients should commit to a minimum of two months treatment for tetracycline before they expect to see any significant results. Tetracycline teeth that have been bonded or veneered can also be whitened from the lingual, which may give the restorations a better look clinically Also note that Minocycline. the most commonly prescribed drug for acne, has been shown to stain adult teeth. There is no good substitute, so patients must continue to use it, but may require bleaching later in life from deposition of tetracycline in the secondary dentin during extended use of Minocycline. Nicotine stains also typically require 1-3 months treatment.

Q: *Are there advantages to the overnight use of bleaching trays'*

A: Overnight use is recommended because in the first I to 2 hours about *50%* of the active ingredient is depleted. Over the next 4 to 10 hours the other half is used up. With daytime wear for a couple of hours, about half the active product is being wasted. So overnight wear appears to be better from a cost-effectiveness standpoint as well as safety; the more times you apply it per day the greater chance you have of sensitivity. (*For further information, please go online to www.dentalquest.org and click on DEMO to view afree demonstra lion of Dr. Haywood webcast.)*