

Compiled by
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TOOTH WHITENING

Spring is the bleaching season and many practitioners will find an increasing demand from patients for tooth whitening.

Dr Van Haywood is an authority on tooth whitening and has recently been in Australia. Dentists who missed his presentation can access his website www.vanhaywood.com for a wealth of information on this topic.

There are three techniques available for patients to whiten their teeth:

- In office whitening
- OTC whitening products
- Mouth tray whitening

For several years the dental profession has been bombarded with the benefits of 'in office bleaching', particularly with the use of powerful 'bleaching' lights to enhance the procedure.

While in office whitening is immediately effective, research in this field has shown that bright lights and high concentrations of either carbamide peroxide or hydrogen peroxide create the whitening effect by dehydration and that teeth will return to their original colour in several days after application.

Figure 1 is a confocal micrograph of a 35 per cent carbamide peroxide gel over tooth enamel. As there is no penetration of the gel into the enamel it is difficult to explain any bleaching mechanism apart from dehydration.

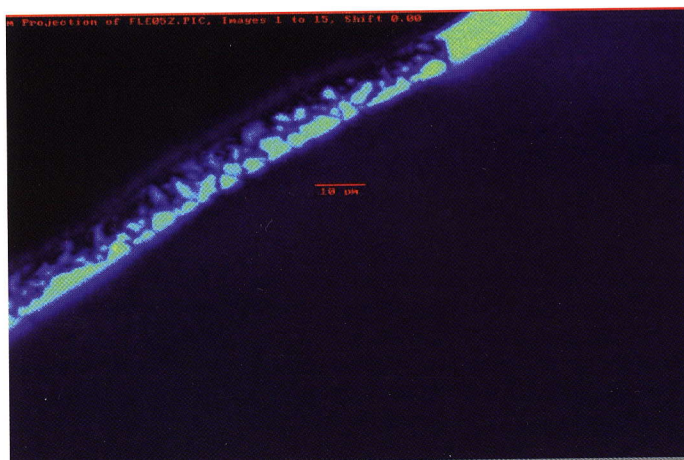


Fig 1. 35 per cent carbamide peroxide. Bleach does not penetrate enamel, so effect must be dehydration.

However, tooth whitening requires quite a high level of commitment from a patient in order to achieve a satisfactory outcome. Many patients who receive a whitening kit without prior 'in office whitening' often are so busy they haven't got around to whitening their teeth by their next regular 'check up' appointment.

This creates a strong argument to initiate tooth whitening for a patient by first carrying out an 'in office' procedure prior to commencing mouth tray whitening so there is an immediate result and a powerful incentive to continue with home whitening.

SDI [Melbourne, Australia] has a relatively inexpensive stand and bleaching tip that fits onto their curing light for dentists who wish to benefit from the marketing dollars spent promoting white light bleaching (Fig 2).

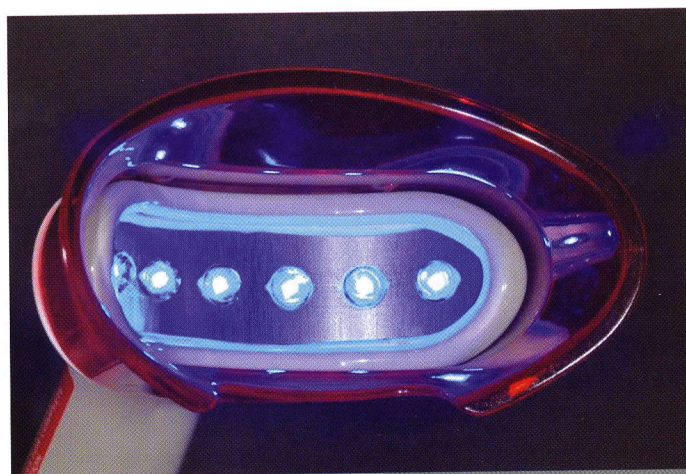


Fig 2. SDI Whitening Tip.

Many 'OTC whitening products' are available in Australia. There are two main concerns dentists should be aware of. Firstly, without a prior dental examination oral conditions may be present that are inappropriate for the use of these products. Secondly, many OTC whitening products are ineffective in the way they are presented and to be effective some sort of gingival barrier would be required. European Union policy is that patients must first have a dental examination before purchasing an OTC whitening kit.

'Mouth tray whitening' was the technique first used by the dental profession to whiten teeth. There have been many papers published on both the effectiveness and safety of this tooth whitening procedure.

Dr Haywood recommends the use of 10 per cent carbamide peroxide but says 15-16 per cent carbamide peroxide is the most common bleaching material used in the United States.

Figure 3 shows a confocal micrograph of 16 per cent carbamide peroxide on tooth enamel penetrating well into the interprismatic spaces where bleaching of the enamel can occur.

The time required to bleach teeth using mouth trays can vary from one to up to six weeks. Dr Haywood suggests that patients who may show little change for a number of weeks (mild tetracycline stains) may suddenly observe substantial lightening of their teeth.

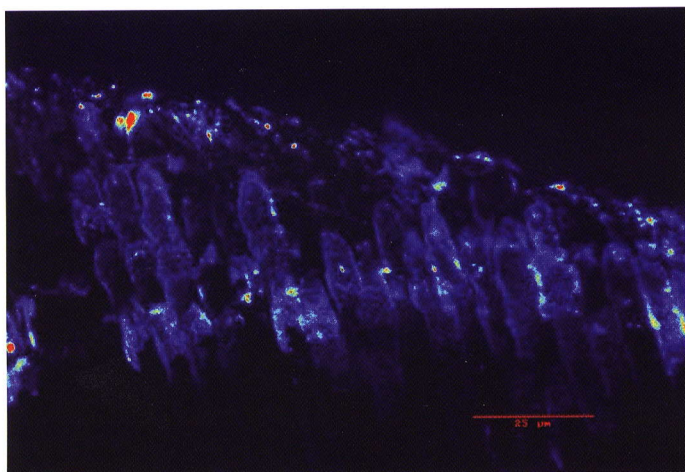


Fig 3. 16 per cent carbamide peroxide. Bleach penetrates over 100 microns into interprismatic spaces.

COMBINED 'IN OFFICE' AND 'TAKE HOME' WHITENING PROTOCOL

- Prior to undertaking any bleaching procedure a prudent practitioner should inform patients that success rates will vary and some whitening may be uneven over the surface of a tooth.
- There is no evidence in the dental literature about the effect tooth whitening may have on maturing enamel. However, the age of 16 could be considered a safe age to commence tooth whitening.
- A medical history of the patient should be reviewed and an oral examination undertaken, e.g., patients with oral lichen planus may have a severe reaction to bleaching gels. Gingival inflammation and caries are not contra indications as peroxides are anti bacterial and can be beneficial for these patients.
- Take an alginate impression and manufacture the whitening tray, preferably from thin mouth guard blanks, often supplied with the bleaching gel. Finish the tray in a straight line on the gingivae, about 2 mm above the teeth. Do not make reservoirs in the tray (Fig 4).

If office whitening is not required proceed directly to take home whitening.

IN OFFICE WHITENING

- Prior to inserting the bleaching tray use a shade guide to determine the shade.
- Load the tray with a small pea size increment of 35 per cent carbamide peroxide gel into each tooth space. This percentage of carbamide peroxide will seldom cause any sensitivity. However, instruct patients to remove the trays immediately if any discomfort occurs.

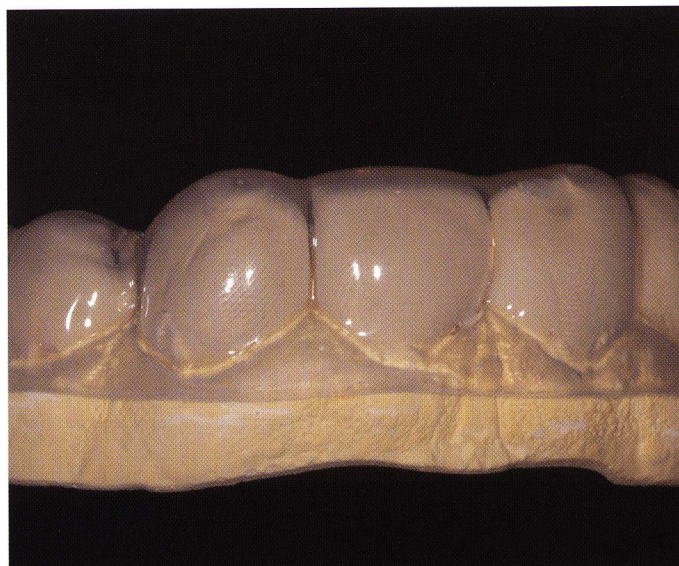


Fig 4. Whitening tray.

- Seat the tray to about 1 mm shy of a firm fit so there is a space around the tooth of bleaching gel. Instruct patients not to bite firmly onto the tray as gel will be dispersed from the tray creating an unpleasant taste and reducing the efficiency of the bleaching.
- Dismiss the patient for one hour. Ask them to avoid eating or drinking and it is prudent to supply some facial tissues for patients to expectorate into during this time.
- Upon return to the operatory remove the tray and rinse with water. Retake the shade and show the patient the improvement in whitening. Usually, this is quite obvious but practitioners should be prepared for some results to be quite minimal.

TAKE HOME WHITENING

- Provide patients with either a 10 or 16 per cent carbamide peroxide gel. Sixteen per cent gels work faster but may cause some sensitivity.
- Show patients how to load the trays and insert them into their mouths, 1 mm short of a firm fit, some patients get quite confused doing this.
- Explain that this is a 'compliance appliance' that it will only work loaded with gel and seated in the mouth.
- Patients should aim to wear the trays up to two hours per day, preferably at a convenient time such as driving to or from work or watching television in the evening. Whitening will be enhanced if patients reload the trays every half an hour during this time. Suggest that wearing the tray to bed is also beneficial but give patients the space to choose the times they wear the trays and the length of time they wear them.

Make a short follow up appointment after about two weeks to check the results patients have achieved and either congratulate them on their new smile or review their bleaching protocol and explain that further time may be required to get the outcome they require.

Tooth whitening produces many grateful patients and is a good practice builder. Many practitioners find either whitening their own teeth or having a staff member do the same will create an interest amongst patients about the technique.

DISCLOSURE:

The author has a financial interest in Professional Dentist Supplies Pty Ltd, an enterprise that manufactures tooth whitening products.