



Chlorhexidine without the stain and whiter teeth

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When Harold Loe published his chlorhexidine study in 1970,¹ a new gold standard was set for the chemical reduction of bacterial plaque and the management of gingival inflammation. There have been numerous studies published since then confirming both plaque reduction and improvements in gingival health.

The long-term use of chlorhexidine for the chemical management of plaque has been confounded, however, by the harmless yet unsightly stain that inevitably builds from the cervical margins of the teeth. This has limited the time the material can be comfortably used to about a week or two (depending upon the individual), otherwise professional prophylaxis is required to remove the stains.

In 1998, a small pilot study appeared in an IADR abstract showing that alternating applying chlorhexidine and 10 per cent carbamide peroxide appeared to prevent the chlorhexidine from staining the teeth.²

As a consequence of this pilot study, Professional Dentist Supplies (Melbourne, Australia) introduced a product called "PerioPack" that incorporated a chlorhexidine gel into a tray bleaching system. The use of this system rapidly resolved gingival inflammation and compliant patients who continued over periods of several years produced a gradual reduction in periodontal pocketing. Pockets 7 mm or less reduced to 3 mm (Figure 1) and while pockets beyond 9 mm did not appear to reduce in depth, there was no evidence of suppuration and surrounding gingival tissues remained healthy, suggesting a remission in the progression of the disease (Figure 2).

Patients were encouraged to manage residual pockets long term by inserting a small interdental brush soaked in chlorhexidine into the depth of these pockets two or three times a week (Figure 3).

In all patients, the side effect of this ongoing treatment was much whiter teeth - something that a practitioner should consider if a patient has isolated anterior crowns, laminates or large anterior restorations.

The "PerioPack" was slow to take off as a treatment modality, mainly because dentists had the inconvenience of making patients bleach trays on the one hand and the ongoing compliance required of patients to persevere with this protocol over extended periods on the other.



PerioPack MINI consisting of 30 mls of chlorhexidine gel and 30 mls of six per cent carbamide peroxide gel.

As an alternative treatment, a non-bleaching tray protocol was developed similar to that used for high fluoride containing toothpastes, called "PerioPack mini".

Patients are instructed to alternate a daily combination of chlorhexidine gel and 10% carbamide peroxide as follows:

- In the evening, prior to retiring, brush your teeth with the chlorhexidine gel;
- Expectorate the gel but **DO NOT RINSE**;
- With the remaining slurry on the toothbrush, comfortably brush the back of the tongue (avoiding gagging); expectorate but **DO NOT RINSE**;
- In the morning, after breakfast, brush your teeth with the 10% carbamide peroxide;
- Expectorate the gel but **DO NOT RINSE**; and
- With the remaining slurry on the toothbrush, comfortably brush the back of their tongue (avoiding gagging); expectorate but **DO NOT RINSE**.

The main advantages of this protocol are that dentists are not required to make their patients bleach trays and patients don't have to follow the rigorous compliance requirements of daily using the trays, yet the long-term outcomes of both protocols have been similar. Patients notice an immediate reduction in gingival bleeding (which assists with compliance) and over time



Figure 1. Periodontal pockets up to 7 mm will reduce to 3 mm after several years continuous use.

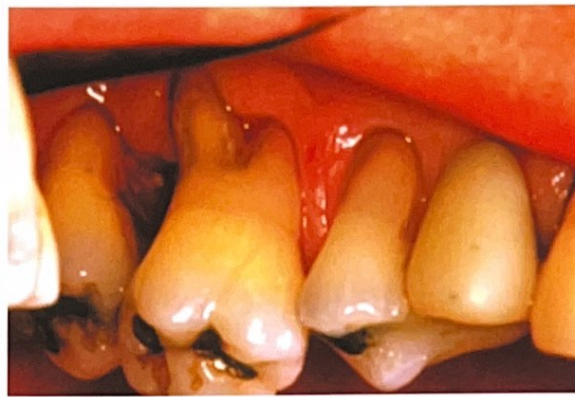


Figure 2. Periodontal pockets over 9 mm do not appear to reduce in depth but surrounding periodontal tissues remain healthy and stabilised.



Figure 3. Regular maintenance of deep pockets can be assisted by inserting an interproximal brush dipped in chlorhexidine gel into the pocket two or three times a week.



Figure 4. The use of the PerioPack MINI over a 6 year period has assisted this patient to transform her mouth from generalised periodontal disease to healthy gingival tissues. The side effect of this treatment has resulted in much whiter teeth.

a slow but predictable reduction in pocket depths similar to that observed using the trays. There was a marked whitening of the teeth as well (Figure 4).

Fortunately, the bleach and the chlorhexidine counteract the negative aspects of the other. The chlorhexidine acts against both aerobic and anaerobic bacteria and causes staining, however, importantly, it reduces any cervical sensitivity that may be caused by long term use of the bleach. The bleach acts against anaerobic bacteria, may cause cervical sensitivity but importantly prevents the chlorhexidine from staining.

Dentists will find this an excellent way to reduce chronic gingival inflammation and moderate pocket depths in patients who, for reasons that are often difficult to fathom, are unable or unwilling to comply with traditional mechanical plaque control techniques.

It is a great practice builder, especially for patients who have struggled for years with chronic gingival bleeding to find a dentist with a miracle cure that doesn't involve hours battling in the bathroom with dental floss.

Periodontal disease is a complex multifactorial condition and patients who fail to respond early to this protocol should be referred to the care of a periodontist.

Disclosure

The author has a financial interest in Professional Dentist Supplies.

References

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About the author

Dr Geoff Knight is a general dentist from Melbourne, Australia with special interests in aesthetic dentistry. He is an internationally recognised speaker whose formula for successful practice is based upon high quality, highly efficient, minimally invasive dentistry. He has developed a number of recognised clinical techniques and his name appears on several dental patents. Apart from his broad clinical base, he has been State President of the ADA Victoria and has extensive political and economic experience within the profession. He is well-focused on the many problems of dentistry and the solutions needed to survive today's rapidly changing environment. He has been published in Quintessence International, Australian Dental Journal and the Journal of Periodontal Research. He has produced a series of clinical videos and written numerous papers on aesthetic and adhesive dentistry that have been translated and published in a number of languages.