

# The problem of white spot lesions

A new method for remineralisation post-orthodontic treatment

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Fig. 1

**\_Demineralised white spot lesions** occur frequently after orthodontic treatment. Some teeth are more prone to demineralisation, typically the maxillary lateral incisors and the mandibular canine teeth. The disto-gingival area of the labial enamel surface is the area most commonly affected (Fig. 1). In the first few weeks after removal of

Various treatment methods have been proposed to assist the process of remineralisation. It is important to note that fluoride should not be used in high concentration, as it tends to prevent demineralisation and can lead to further unsightly staining. Low concentrations of fluoride, however, may assist remineralisation, such as those found in casein calcium phosphate materials. Additionally, stimulation of salivary flow by chewing sugar-free gum is helpful.

This article will describe a revolutionary new approach to the cosmetic treatment of white spot lesions (Fig. 3). With Icon, a microinvasive technology from German manufacturer DMG, demineralised enamel can be filled and reinforced without drilling or anaesthesia (Figs. 4 & 5).

**Fig. 1** Typical white spots: C-shaped or irregular. the fixed appliances, there is a reduction in white spot lesion size and appearance, possibly due to the action of saliva (Fig. 2).

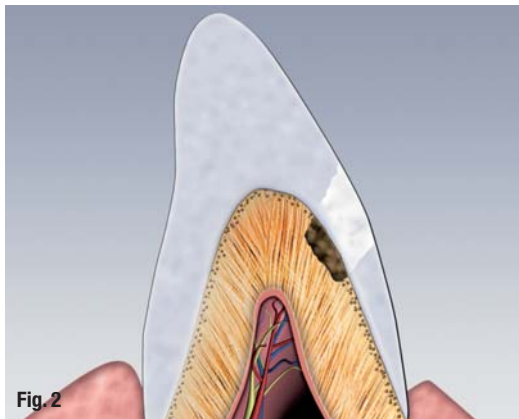


Fig. 2



Fig. 3

**Fig. 2** Smooth surface caries lesion.

**Fig. 3** Clinical image of an incipient caries lesion.

**Fig. 4** Clinical image of an incipient caries lesion.

**Fig. 5** Pore system of an incipient caries lesion.

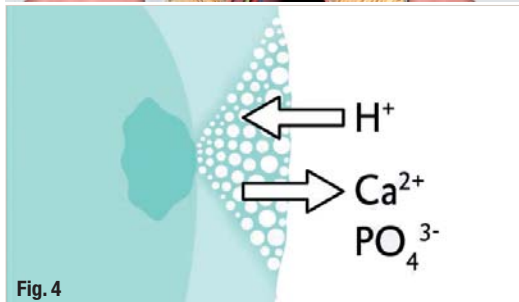


Fig. 4

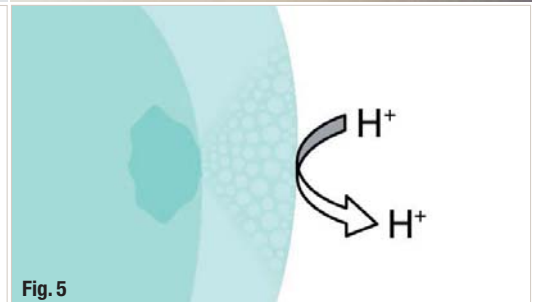
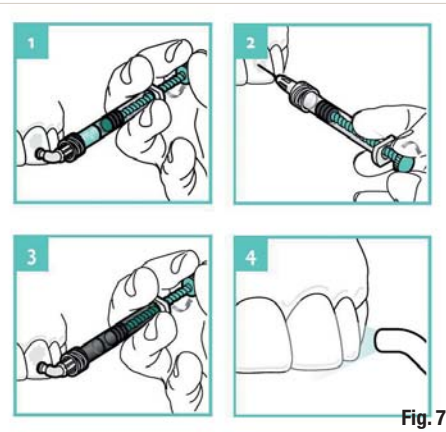
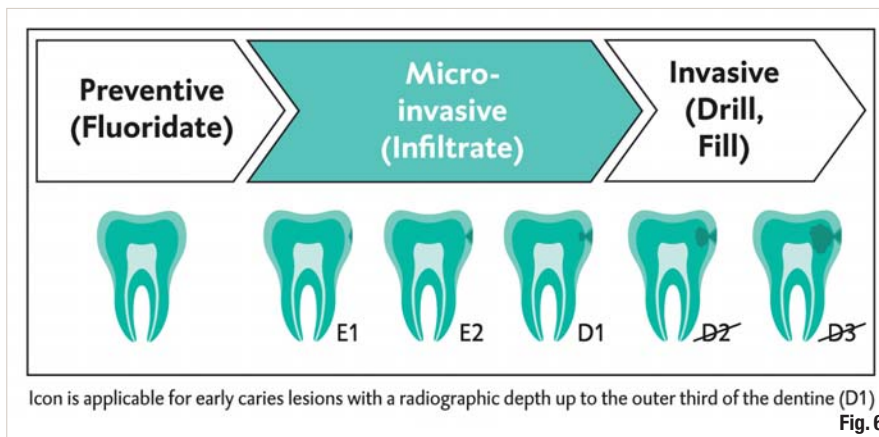


Fig. 5



One of the reasons that earlier approaches to the treatment of white spot lesions have fallen short is that fluoride therapy is not always effective

earlier. I would recommend that clinicians try the Icon product when attempting to remineralise white spot lesions post-orthodontic treatment. This

**Fig. 6** \_The first treatment to bridge the gap between prevention and restoration.  
**Fig. 7** \_Smooth surface procedure.



**Figs. 8a & b** \_Lesions before and after Icon treatment.

in the advanced stages, and the use of restorative fillings usually sacrifices significant amounts of healthy tooth structure. Instead of adopting a wait and see approach, Icon has been shown to arrest the progress of early enamel lesions up to the first third of dentine in one simple procedure (Fig. 6), without unnecessary loss of healthy tooth structure.

is not just minimally invasive dentistry; it is micro-invasive dentistry.

In the procedure described here, the surface area of the white spot lesion is eroded with a 15% HCl gel, which opens the pore system of the lesion. This is then dried with ethanol, followed by the application of Icon onto the lesion with the application aid. The extremely high penetration coefficient enables it to penetrate into the lesion pores. Excess material is then removed, and the material is light-cured. The total treatment time should be about 15 minutes (Fig. 7).

The cosmetic treatment of cariogenic white spots in one visit can be very appealing, especially to young patients and their parents (Figs. 8a & b). No drilling or anaesthesia is required and those patients who have already demonstrated poor compliance with their brushing can be treated

**\_about the author**



**Dr Derek Mahony** is a world-renowned specialist orthodontist, who has spoken to thousands of practitioners about the benefits of interceptive orthodontic treatment. Early in his career, Dr Mahony learned from leading clinicians the dramatic effect functional appliance therapy can afford patients in orthodontic treatment. He has combined the fixed and functional appliance approach ever since. His lectures are based on the positive impact such a combined treatment approach has had on his orthodontic results and the benefits this philosophy provides from a practice management perspective. Dr Mahony is a contributing editor to the *Journal of Clinical Paediatric Dentistry*, *International Orthodontic Journal* and *Spanish Journal of Dentofacial Orthopaedics*. He can be contacted at [info@derekmahony.com](mailto:info@derekmahony.com).