Deminerised 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 the fixed appliances, there is a reduction in white spot lesion size and appearance, possibly due to the action of saliva (Fig. 2).

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 calcium carbonate 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. 5). With Icon, a microinvasive technology from German manufacturer DMG, deminerised enamel can be filled and reinforced without drilling or anaesthesia (Figs. 4 & 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 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.

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 earlier.

I would recommend that clinicians try the Icon product when attempting to remineralise white spot lesions post-orthodontic treatment. This is not just minimally invasive dentistry; it is micro-invasive dentistry.

Fig. 1 Typical white spots: C-shaped or irregular.
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. 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.

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