

# BIOMIN F: PREVENTION OF SENSITIVITY FOLLOWING WHITENING TREATMENT

Teeth whitening procedures can cause dentine sensitivity in at least 50% of patients<sup>1</sup>. Use of BioMin F toothpaste can reduce any existing sensitivity ahead of treatment, and prevent it from developing during and after the procedure. Moira Crawford reports

**T**ooth whitening has become one of the most popular and widely carried out cosmetic dental procedures, and is a valuable source of income for the dental practice.

Regulation of the whitening industry and refinement of the bleaching products have made this a very safe treatment, but according to the British Dental Bleaching Society (BDBS), at least 50% of patients are likely to develop sensitivity following the treatment<sup>1</sup>. This can range from a mild awareness of the teeth to shooting pains, sometimes so severe that the patient cannot continue treatment. The BDBS recommends the use of desensitising products in order to manage the problem.

By law, tooth whitening may only be carried out by a qualified dental professional, and regulations limiting the concentration of the bleaching agents have reduced the incidence of post-whitening sensitivity. However, the action of hydrogen peroxide or carbamide peroxide, the most common bleaching agents, passing through the tooth enamel and into the dentine to lighten the colour, can still cause sensitivity in certain patients. Some may already suffer from sensitivity, and it is essential that this is brought under control before treatment is started. Ideally too, patients should use a desensitising toothpaste ahead of commencing whitening treatment to prevent sensitivity developing in the first place.

A number of toothpastes aimed at the management of sensitivity are



Sam Davidson

**'I RECOMMEND BIOMIN F BOTH BEFORE STARTING WHITENING AND DURING OR FOLLOWING THE TREATMENT'**

available for patients to purchase, but BioMin F, an innovative new toothpaste that takes a different approach to oral hygiene, offers a highly effective alternative to previous generations of sensitivity products, not only managing sensitivity but also preventing it from developing.

## BIOMIN F

Bioactive glass technology was originally developed for use in bone grafting, but was found to have a positive effect on remineralising tooth enamel by the formation of hydroxyapatite. BioMin F is based on a new generation of bioactive

glass, specifically designed for dental use, and incorporating fluoride and a greater level of phosphate to form fluorapatite, the fluoride analogue of the apatite in natural tooth enamel.

Following brushing with the product, it adheres to the tooth surface, where it dissolves gradually over up to 12 hours, acting as a slow release vehicle for a carefully balanced combination of calcium, fluoride and phosphate ions. These ions work in concert with the saliva in the mouth to form fluorapatite, which is more stable and resistant to acid attack than hydroxyapatite.

Research at Queen Mary University, London, where the product has been developed, has shown it to be more effective than other sensitivity treatments, both at remineralising enamel and reducing and preventing sensitivity.

The fine particles of BioMin F adhere not only to the surface of the tooth, but are also small enough to enter the exposed dentine tubules, occluding them and depositing

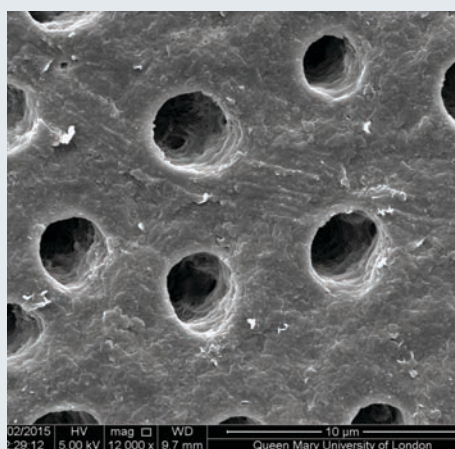


Figure 1: Before application of BioMin F

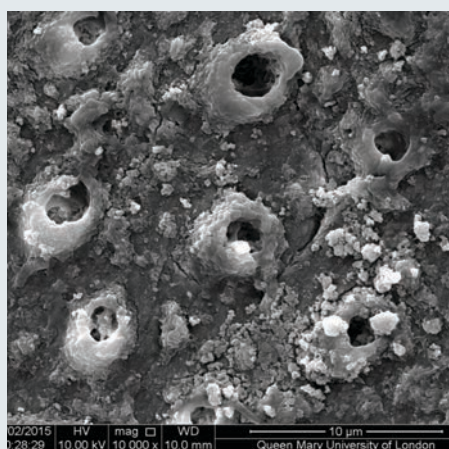


Figure 2: After application of BioMin F

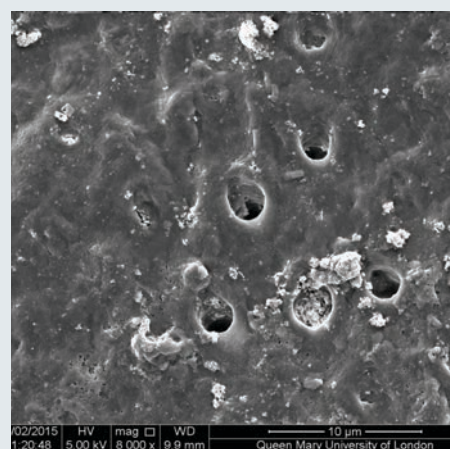


Figure 3: After acid challenge tubules remain occluded

fluorapatite, so preventing fluid movement (hydraulic conductance) which is the cause of sensitivity. It is thought that fluorapatite is formed preferentially on the apatite-rich walls of the dentine tubules, re-mineralising them and both halting and preventing sensitivity from arising. The whitening treatment leaves the tubules exposed and susceptible to sensitivity, so if there is any predisposition towards sensitivity arising, this needs to be treated before the whitening programme commences, and to continue during and after treatment to prevent it occurring.

#### THE EXPERIENCE

Dentists and hygienists are finding that using BioMin F is extremely effective in combating the sensitivity caused by whitening treatments. Sam Davidson, a hygienist working in several practices across the South East of England, found herself needing to trial it. She had had whitening treatment which caused her to experience sensitivity when breathing in cold air. The sensitivity was so intense that she had had to cease the treatment, but after 14 days of using BioMin F she was able to continue. 'I now routinely recommend it for patients both before starting whitening and during or following the treatment,' she said.

Dr Don Gibson of Yeovil was particularly attracted by the science behind BioMin F, especially the slow release principle of laying down the apatite over several hours. He also liked the fact that BioMin F had been developed in the labs of a dental hospital, by dentists and scientists rather than by a big multinational corporation. He admitted that he was always interested in trying out new technology but soon realised that BioMin F was extremely effective. The improvement he saw in patients suffering from sensitivity was such that he now recommends it widely and routinely offers it when he is about to embark on a whitening programme. 'It's now standard procedure in the practice,' he said.

Dr Mark Maharaj in Swindon agreed. 'I recommend it pre- and post-whitening,' he



Dr Anne O'Donnell

### 'IT STRENGTHENS ENAMEL IN A DIFFERENT WAY, HELPS WITH SENSITIVITY, AND IS A GAME CHANGER'

said. 'Patients have seen such positive results that they continue to use it and come back for more.'

Californian hygienist and continuing education speaker Theresa McCarter, sees a great deal of sensitivity caused by whitening. In a place where image is so important, there is a lot of over-use of whitening products, including home kits, and as a result, problems with sensitivity are common. She has recommended BioMin with great success in several cases. One patient in particular had overused whitening products to the extent that her teeth were almost translucent. 'After five months of using BioMin there is a visible improvement in the density of her teeth,' explained Theresa. 'We recommend only in-office treatments, and provide BioMin alongside it to prevent sensitivity arising.'

At Mullingar Dental Centre in Ireland, Dr Anne O'Donnell and hygienist Donna Paton are extremely impressed by the improvement not only in their patients' sensitivity problems but also in preventing white spot lesions in orthodontic patients and for perio patients. They now

regularly give out a sample of BioMin F when carrying out scaling or whitening procedures. 'The effect is very convincing – no other toothpaste does what BioMin does, said Dr O'Donnell. 'It strengthens enamel in a different way, helps with sensitivity, and is a game changer.'

Tooth whitening is such a popular treatment, having such a positive effect on patients' self esteem, that it is only going to become more widely carried out. It does, however, carry a risk of causing sensitivity which can lead to patient non-compliance for further home bleaching programmes, and hence reduce the effectiveness of the procedure and patient satisfaction. Now offering patients the option to brush with BioMin F before and during treatment offers a simple and safe way to bring comfort to the tooth whitening process and increase the frequency with which patients will demand the procedure.

*\*For patients who do not wish to use a product containing fluoride, BioMin C is available, containing phosphate and calcium, and which has been shown to be second only to BioMin F in terms of re-mineralising tooth enamel and preventing sensitivity.*

#### REFERENCE

1. British Dental Bleaching Society. Patient information, [bdb.s.co.uk](http://bdb.s.co.uk)



**MORE INFORMATION**  
Learn more about BioMin toothpastes  
by visiting the website.  
**WEBSITE:** [www.biomin.co.uk](http://www.biomin.co.uk)