

Remineralization of Caries – It Really Does Work!

Building Your Prevention Program with 3M ESPE™ and The Canary System®



What are White or Brown Spots?

Detecting and monitoring white spots and early caries lesions are challenging. The tooth undergoes demineralization and remineralization continuously. When exposed to acids, the hydroxyapatite crystals dissolve to release calcium and phosphate creating the initial lesion. The reversal of this process, called remineralization, will occur if the acid in the plaque is buffered by saliva. This will allow calcium and phosphate present primarily in saliva or introduced on to the tooth surface by toothpastes such as **3M ESPE Clinpro 5000 1.1% Sodium Fluoride Anti-Cavity Toothpaste** to flow back into the tooth and form new mineral on the partially dissolved subsurface crystal remnantsⁱ. The new “veneer” on the surface of the crystal is much more resistant to subsequent acid attack, especially if it is formed in the presence of sufficient fluorideⁱⁱ.

Treating Early Caries with 3M ESPE & Canary

A female in her thirties, had brown spot lesions along the gingival crest of the mandibular bicuspids. The remineralization program consisted of a **3M ESPE Vanish 5% Sodium Fluoride White Varnish applied every 3 – 4 months in the office and the nightly home use of Clinpro 5000 Toothpaste**. Within one year, using The Canary System to monitor the lesions and engage the patient, the lesions had re-crystallized. Visually, there were no signs of remineralization or colour change since initially remineralization is mostly a sub-surface phenomena.

Using The Canary System, one can monitor remineralization of the lesion and keep patients engaged in this critical preventive program.

Is this Lesion Growing or Re-Crystallizing?

December 2012



January 2014



- Brown stained buccal surface of a mandibular bicuspid
- No radiographic or visual evidence of change
- Is remineralization working?
- What do we tell our patients?



The Canary Confirms Lesions are Re-Crystallizing

December 2012



January 2014



- Canary Scan measures the changes in crystal structure
- Remineralization is working
- Remineralization Therapy: 3M ESPE Vanish Fluoride Varnish & Clinpro 5000 toothpaste



ⁱ Melberg, J. R., “Remineralization: A status report for the American Journal of Dentistry, Part 1, Am J. Dent., 1988; 1, # 1: 39 – 43

ⁱⁱ Featherstone, J. D. B., “Prevention and reversal of dental caries: Role of low level fluoride”, Comm. Dent Oral Epidemiol. 1999; 27: 31 – 40