

## Article: Cavitron Select - Brings Portability To Non-Surgical Periodontal Therapy

**Author: Professor T F Walsh BDS, MSc, DDS, FDSRCS (Eng)**

A key factor in the non-surgical management of periodontally involved root surfaces, is the effective removal of surface deposits together with a very thin layer of endotoxin laden cementum. This is achieved by root debridement to remove surface deposits and to smooth the root surface as well as removing a thin layer of cementum, thus reducing the endotoxin burden. Clinical operators at Sheffield Dental Hospital undertaking root debridement are encouraged to use ultrasonic instrumentation wherever possible as this has considerable advantages over hand scaling, which are shown in Table 1.

Table 1: Advantages of Ultrasonic Scalers
Calculus deposits can be removed more quickly and with less effort
Debridement of the root surface is accomplished more effectively because of the water spray
The water spray has the effect of flushing away blood so that visibility of the root surface is improved
The patient may experience less discomfort than with manual scaling
The cavitation effect reduces bleeding from the friable blood vessels in the wall of the pocket and so is time saving
Cavitation action is able to remove root surface contaminants at a distance from the tip

Ultrasonic scalers are effective as they operate at a high frequency above 20 kHz (20,000 vibrations a second) and modern machines work at 25 kHz or more. Recently, ultrasonic scalers have become more 'user-friendly' with the introduction of finer tips, as access is improved for root surface debridement.

More than twenty years ago, Through-Flow Inserts (TFI inserts) where the water passes through the insert neck, were introduced. Since then, the combination of this development and the new finer FSI Slimline inserts set the stage for another quantum leap in the management of the contaminated root surface. These FSI Slimline inserts (which are 40% finer than normal inserts) allow improved greater access to periodontally involved root surfaces and the redirected water supply to the end of the tip makes surface cleaning more efficient, hence the name - Focused Spray Inserts (FSI).

However, evidence was emerging that instrumentation of the root surface should be less aggressive than we had previously thought and in response to this finding, the new Sustained Performance System was developed (only applicable to the Cavitron SPS/SPS Jet). This system permits very gentle debridement of the root surface but

gives increased power automatically when resistant surface deposits were encountered. This system is now so effective that the use of the term ultrasonic 'scaler' is itself becoming outmoded, as the equipment is now a root surface management device.

One of our problems in Sheffield Dental Hospital is when a patient on the general restorative clinic requires periodontal therapy and our small periodontal unit is full (a frequent occurrence!). We coped to a limited extent with this problem by having non-return water valves fitted to the main clinic units to take portable ultrasonic scalers but this was an expensive option as we have over 60 units on our main clinics. Now the Cavitron Select has solved this problem.

### **Completely mobile**

As this compact unit is completely mobile (it only needs a power supply and has its own self contained autoclavable water reservoir), it enabled the use of sterile water during surgical procedures on the clinics and Chlorhexidine Gluconate was used for root surface debridement, which also gave increased effectiveness. The fact that the water supply is also adjustable at the base of the handpiece helped avoid the potential contamination effects that can occur when touching the main unit.

### **Great potential uses**

The combination of portability and improved infection control gives this portable unit great potential for use in both large clinics and practices in situations where mobility is essential. Speaking from a user point of view, the portable Cavitron Select has provided the clinic with the reliability and piece of mind that comes with a Cavitron name, but also the convenience that comes with a portable unit.

