

the piezo alternative



The compact, stand-alone Satelec Suprason P5 features color-coded tips and "cruise control" power delivery that automatically adapts to changing conditions.

What makes piezo-electric scalers such an intriguing alternative to traditional ultrasonics?

DR. RAYMOND J. VOLLER offers his perspective.

A myriad of new products have been introduced that have revolutionized periodontal therapy in the past several years. Many of the recognized brand names have survived the test of time, offering the benefit of reducing hand and wrist fatigue as well as tissue trauma.

Common in today's hygiene and periodontal armamentarium is the sonic or ultrasonic handpiece. Whether used only occasionally or on a routine basis, most dental professionals are familiar with sonic or ultrasonic technology in some capacity. With the utility of the products that are available today, there is no reason why every operator should not be equipped with this technology.

The sonic scaler operates at a low frequency of about 3,000 to 8,000 cycles/second (which is how many times the tip comes in contact with the tooth). The sonic scaler is air-driven, and the tip moves in an elliptical motion. The ultrasonic handpiece utilizes either magnetostrictive or piezo-electric technology. Magnetostrictive inserts operate at 25,000 to 30,000 cycles/second and, like the sonic scales, have an elliptical motion. A low voltage magnetic signal causes tip movement. Piezo-electric technology operates at 28,000 to 36,000 cycles/second. The tip moves in a back-and-forth motion and works along the side of the tooth, shaving off calculus and debris. Here the handpiece, rather than the instrument tip, is activated.

The use of ultrasonic devices has dramatically improved the practice of supragingival scaling and periodontal debridement. Although ultrasonic tech-

nology has been around for decades, improvements in recent years have allowed its use to become mainstream. Ultrasonic technology in general, whether magnetostrictive (long inserts with metal rods that flex) or piezo-electric (small tips that screw onto the handpiece), and sonic scalers to a lesser degree, offer several advantages over hand scaling:

- 1 less hand and wrist fatigue due to the light touch necessary to merely guide the scaler tip along the tooth surface
- 2 decreased treatment time, especially with heavy deposits, leaving more time for patient education or procedures such as placement of chemotherapeutic agents (i.e., PerioChip/OMNII Oral Pharmaceuticals)
- 3 more efficient removal of dental plaque and calculi with ultrasonic instrumentation
- 4 ultrasonic tip spray promotes elimination of dental plaque
- 5 ultrasonic instruments rid the radicular surfaces of bacterial endotoxins while preserving the cementum