Low-Speed Handpiece Contamination (11/06)


In this in vitro study, the authors investigated whether the interior of low-speed handpiece/prophy-angle systems becomes contaminated during use and submersion into a suspension of sterile phosphate-buffered saline containing *Geobacillus stearothermophilus* spores. Two types of handpieces were used and attached to eight brands of prophy angles. The prophy angles were attached to sterile handpieces and operated for 60 seconds. The inside surfaces of the angle, nosecone, and motor were analyzed. In the 160 tests of handpieces contaminated at the prophy cup end, the spores traveled into the motor gears 32 times (20 percent). In the other 160 tests in which the motor gears were contaminated, the test bacterium traveled through the prophylaxis cup in 75 instances (47 percent). The in vitro data suggest that low-speed handpiece motors can become contaminated internally during use with prophy angles and internal contaminants appear to have been released from the handpiece. Unless low-speed handpieces are sterilized properly between patients, they may become cross-contaminated.

DECS Comment: The USAF Guidelines for Infection Control in Dentistry require heat sterilization between patients for any devices that can be removed from the air and waterlines of the dental unit. This includes, but is not limited to, all handpiece attachments, handpiece motors, reusable prophy angles, reusable air and water syringe tips, and ultrasonic scaler tips. Also, any dental device connected to the dental air/water system that enters the patients mouth should be run to discharge water, air, or a combination for a minimum of 20-30 seconds after each patient before heat sterilization. This procedure is intended to help physically flush out patient material that might have entered the turbine and air and waterlines. Additionally, it is important to follow manufacturer instructions for cleaning and lubrication requirements for each handpiece and to use separate cans of the lubricant/cleaner before and after sterilization to prevent cross-contamination.