



# Huntington Village Implant & Oral Surgeons

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Don't Miss out on our **Next Seminar**

**Thursday**

**Jan. 29th, 2015**

**3 CE Credits**

**"Confronting Controversies in Implant Dentistry"**

**Presenter:**

**John S. Cavallaro, DDS**

**Registration Dinner 5:30 pm**

**Lecture 6:00 - 9:00 pm**

**Dolan Family Health Center**

**284 Pulaski Road, Greenlawn, NY**

**This course is sponsored by the Suffolk County Dental Society, an ADA-CERP recognized provider of Cont. Ed. (CE) approved by the New York State Dental Association and a designated PACE Program Provider for the Academy of General Dentistry.**

### Dental Implants: Cleaning Effectiveness

Schmage P, Kahii F, Nergiz I, et al: Cleaning effectiveness of implant prophylaxis instruments. Int J Oral Maxillofacial Implants 29:331-337, 2014

#### Dr. Pruden's Comments:

After implant placement and restoration, many patients feel that their implant is maintenance free. As we know, this is not the case. Implants require diligent home care and professional hygiene and follow-up. Patients should be instructed in various methods of implant oral hygiene for their home care regimen including: brushing, flossing, water pic usage, proxy brush and local use of Peridex. Please instruct and stress the importance of daily proper oral hygiene of these implants and restorations. Also arrange for appropriate recall and follow-up appointments for professional prophylaxis and cleaning.

#### Clinical Significance:

In addition to assessing the ability of instruments to clean implant sites, it is necessary to consider the effect of the cleaning tools on the implant surface itself. Any methods used to clean implants should also avoid producing destructive wear on the implant surfaces or the adjacent tissues. Professional prophylaxis should thoroughly clean the surface without harming it.

#### Background:

Long term implant success is defined as not just a functional implant restoration but also as healthy peri-implant tissue and a stable esthetic result that lasts for more than 10 years. To achieve this level of success requires periodic maintenance therapy, with professional prophylaxis done regularly. Peri-implant prophylaxis is indicated one to four times a year to prevent inflammation and address any mucositis or peri-implantitis that develops. Additionally, prophylaxis should not alter the implant surface profile, since surface alterations can increase the accumulation of plaque and adversely effect the region around the implant. Mechanical implant prophylaxis instruments of various types were tested on two relatively smooth surfaces and the cleaning ability evaluated.

#### Methods:

The 80 titanium disks had either a polished surface or an acid-etched surface. The disks were cleaned using a plastic curette, a manual carbon fiber-reinforced plastic (CFRP) curette in a scaling mode, a sonic driven PEEK plastic, or air polishing. Four disks of each group were randomly selected, stained with a plaque-disclosing solution, and rinsed with water, then analyzed by light microscopy to detect residual plaque. The various samples were compared to determine the results with each cleaning instrument.

#### Results:

Significant differences were noted in the cleaning effectiveness of the various groups. The best results on both surfaces were achieved with the sonic and ultrasonic oscillating PEEK plastic tips and the air polishing (Fig 1). These methods left less than 4% biofilm. The prophylaxis brush and rubber cup achieved comparable levels on the polished surface. The worst results were achieved on the polished surface using the manual plastic and the CFRP curettes. Up to 18% of the areas had biofilm remaining with these instruments. For the acid etched surfaces, the least effective instrument was the rubber cup; which left a mean of 11% of the areas with remaining biofilm.

Significantly more biofilm remained with the plastic manual curettes compared to the machine-driven instruments on the polished surfaces. For acid-etched surfaces, the rubber cup left significantly more biofilm remaining than the ultrasonic PEEK plastic tip and air polishing. More bacteria remained on the acid-etched surfaces than on the polished surfaces when the prophylaxis brush, rubber cup, and ultrasonic PEEK plastic tip were used. The cleaning effectiveness of the other instruments was similar on the two types of surfaces.

The light microscope images of the polished implant surface revealed no bacteria or particles remaining after using the sonic-driven PEEK plastic tip, but numerous bacteria when the plastic curette was used. Air polishing of the acid-etched surfaces achieved effective cleaning with no visibility residual bacteria. Bacteria also remained when the CFRP curette was used on the acid-etched surface.

#### Discussion:

None of the instruments were able to completely clean the implant surfaces. Even on surfaces with comparable roughness, comparable cleaning effectiveness was not possible. Some bacteria always remain in valleys and undercuts, but removal of more than 96% of the biofilm seems to be sufficient for clinical health. The oscillating instruments and air polishing were able to achieve this level of cleaning.