To floss or to brush—that is the (interdental) question

By Marc Chalupsky, DTI

LEIPZIG, Germany: Should dental floss still be used as a tool to combat plaque, caries and periodontal disease? After almost 40 years, the US Department of Health and Human Services and Department of Agriculture have removed their recommendation to use dental floss from their latest Dietary Guidelines for Americans. And the dental world discussed a recent report which made worldwide headlines and concluded that no scientific evidence has proven the effectiveness of flossing. So what are alternatives for dental professionals? Dental Tribune Online posed these questions to three dental hygienists.

For a long time, dental professionals have recommended daily flossing as a necessary part of health care. However, the Associated Press reviewed 25 prominent studies that compared the combination of toothbrushes and floss and their effectiveness in plaque removal. As Dental Tribune Online reported earlier, the investigation found only weak and unreliable evidence. According to the article, some studies were not valid since they included very few participants and had a short duration of only a couple of weeks. When asked for a statement, dental floss manufacturers were not able to provide scientific evidence even though many of the previously mentioned studies were funded by this industry.

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Subgingival air polishing: A new method

The latest supra- and especially subgingival air polishing techniques, with innovative powders offer new prospects in periodontal treatment and implant maintenance

By Dr Franck Simon and Dr Jérôme Liberman, France

Teaching our patients correct oral hygiene techniques is an obvious and essential part of our treatment of periodontal disease. Controlling the bacteria is essential and the aim of the etiological treatment phase of periodontitis is to remove all the elements that contribute to maintaining or developing inflammation. These include initial trauma, iatrogenic occlusion, calculus and supra- and subgingival biofilm.

Increasingly less aggressive instrumentation has been developed to remove biofilm from the root surface. Root planning that causes reversible removal of cementum has evolved toward a concept of de-contamination of the root and the periodontal pocket. Manual curettes can be substituted by ultrasonic micro-inserts. More recently, the new supra- and especially subgingival air polishing techniques, with innovative powders appear to offer new prospects in periodontal treatment.

Non-abrasive powder

The same applies for implant maintenance. Peri-implant cleaning is very difficult to achieve. Indeed, it is difficult to find effective biofilm removal instrumentation that doesn’t cause deterioration of the implant surface. Ultrasonics as well as conventional mechanical instrumentation has been shown to damage titanium (Kawashima, 2007/1). Plastic curettes are not very effective in biofilm removal and are difficult to use in proximal areas (Schmägel, 2002). Air polishing seems to be the most suitable technique, provided that a non-abrasive powder is used for the implant surface. However, only limited clinical success has been achieved with early generations of air polishing devices due to limited access to the subgingival area.

The “Air-Flow” (EMS) method now allows the spraying of a glycerine-based powder (“Air-Flow Petio”) of fine grain size (25 μm) or a new extra fine powder, “Air-Flow Plus” (44 μm), containing erythritol and 0.5% chlorhexidine subgingivally. The latter powder is particularly interesting because it causes superior effectiveness in the elimination of bacterial biofilm compared to powders of larger grain sizes (Drago et al, 2014/2).

The very small particle size has the advantage of striking the tooth surface (dentine or cementum) as well as the implant surface with minimal impact per particle. The effectiveness against biofilm is due to the large number of sprayed particles as well as the combined action of the erythritol and the chlorhexidine.

Recently, a Japanese study has shown that this polyl inhibits biofilm formation, notably with an action on Porphyromonas gingivalis. This gives the powder, if retained, a possible effect on the treated periodontal pockets and a preventive action against periodontal disease (Fashami et al, 2013/3).

This powder can be used supra- gingivally or subgingivally thanks to the handpiece (“Perio-Flow”) combined with the disposable tips. This provides delivery of powder to the bottom of the periodontal pockets with a duration of action of only five seconds per site (Figure 1).

Case No 1

A 25-year-old patient presented with generalised aggressive periodontitis, (Figures 2a-c). Periodontal treatment was performed with ultrasonic debridement and povidone-iodine irrigation. After initial periodontal preparation, three non-surgical cleaning sessions were conducted in the maxilla under LA. The removal of hard subgingival deposits was carried out with ultrasonic micro-inserts and povidone-iodine irrigation. Following this, air polishing via the use of a glycerine-based powder (“Air-Flow Plus”) was carried out supra-gingivally. All pockets deeper than 4 mm were treated with the handpiece (“Perio-Flow”) and specific tips.

At four months, a decrease in pocket depth of 3-4 mm and an absence of bleeding on probing was found. A maintenance phase was established with supra- and subgingival air polishing every four months. More than a year after initial treatment, the situation is stable (Figure 3d to g).

Case No 2

A 50-year-old patient was referred for periodontal assessment. Bacterial plaque was found in the area of the crown and interdentally. Clinical examination revealed periodontal pockets of 6-8 mm in the cuspal area and in the palatal area from the incisor-canine block to the maxilla. It also revealed a purulent exudate in the vestibule of 12 and 22 (Figures 4c, f). There was a 21-class on the occlusal plane with retro-palate bite. In accordance with paraphrensis, apical swelling was found. Swallowing retardation sessions were conducted by a speech therapist.

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Case No 3

A patient presented with a periodontal abscess in the 36-47 sector in April 2013 (Figures 4a-b). From the occlusal aspect, an important class II was found with only posterior contacts. Evidence of buccalism was also discovered and associated with atypical swallowing. Initial therapy involved the construction of a nocturnal splint as well as occlusal equilibration conducted at the same time. Following this, the patient underwent two sessions of periodontal debridement including the use of ultrasonic scalers and subgingival air polishing (Figures 4c-f).

Case No 4

The patient presented with a chronic
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The risks that carbonated soft drinks, alcoholic mixers and wine pose to your patients' teeth are well-known – increased consumption of acidic food and drinks can lead to tooth erosion and hypersensitivity.

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* When toothpaste is directly applied to each sensitive tooth for 60 seconds.
† Containing 5% potassium nitrate and 1450 ppm fluoride as sodium fluoride.
‡ Containing 1450 ppm fluoride as MFP

References:

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Air-Flow Plus powder sprayed under subgingival air-polishing with the air-polishing with the Air-Flow Plus powder sprayed under anaesthesia at the level of the loss of attachment (Figure 3f). Case No 5

The patient presented with periimplantitis on an implant put in place ten years ago (Figures 5a-b). Periodontal probing showed loss of attachment distal to 21. A periapical radiograph confirmed bone loss at the level of the first three threads (Figure 5e). The implant was treated with subgingival air-polishing with the Air-Flow Plus powder sprayed under anaesthesia at the level of the loss of attachment (Figure 3f).

Figure 3f. Air-Flow Plus powder sprayed under subgingival air-polishing with the Air-Flow Plus powder sprayed under anaesthesia at the level of the loss of attachment.

Figure 4a. Periimplantitis with purulent discharge.

Figure 4b. Stability on bone level at +1 year.

Figure 4c. Appearance of the gingiva 15 days after treatment.

Case No 5

The patient presented with periimplantitis on an implant put in place in a context of aggressive periodontitis without the aid of periodontal therapy. An 8mm pocket was found in the absence of bone walls distal to 46 with perimplantitis without the aid of periodontal therapy. An 8mm pocket was found in a context of aggressive periodontitis on an implant put in place ten years ago (Figures 5a-b). Periimplantitis was treated immediately (Figure 7a-b). Very quickly, we can see inflammation disappear (Figure 7c).

During periodontal maintenance sessions, the use of subgingival air polishing is very common, with apparently the same efficiency as ultrasonic, while being more accepted by our patients (Müller, 2014).

Hence, this is a method that is effective in removing bacterial biofilm and is both curative and preventive.

References
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Hygienic instrument reprocessing has also undergone major developments. In Panama, the state health authorities are prescribing the use of Dentsply Sirona’s DAC Universal, the combined autoclave for mechanical instrument processing, in all clinics, a measure that is unique in the world.

**Hygiene in all spheres of life**

Hygiene is not just a term that is associated with germs and infection protection. A key element of practice life is radiation hygiene; X-rays must not endanger the patient’s health unnecessarily. In this edition of VISION, Marco Ahonen, a dentist based in Helsinki, explains how to combine a safe, reliable diagnosis with radiation protection. According to Ahonen, the secret lies in embracing technical advances and applying them to practice workflows.

We are also faced with hygiene-related issues in other spheres of life too – this is often not apparent at first glance; take company and process hygiene for example. A report in this edition of VISION looks at how Mr. and Mrs. Ritter (he is an OMS surgeon and she is an orthodontist) took over a joint practice in a clearly structured manner and transformed it into a specialist center.

**Not just clean, but also safe and quick**

CEREC Zirconia, the new way to produce full zirconia restorations in a single visit, is characterized by its safe, quick workflow. In this edition of VISION, power-user Dr. Michael Skramstad shows how the process can be implemented in the practice and the patient-friendly results that can be achieved.

In addition to user reports, the international customer magazine VISION offers the dentists, practice teams and dental technicians in its readership numerous suggestions and tips for day-to-day practice life, while offering an entertaining read. VISION is published in German and English, and can be requested free of charge from http://www.sirona.com/topics/vision/en/ as a print or e-paper edition.
Dentine hypersensitivity protection, now in a daily mouthwash

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