

# Biofilm-focused care protocols for natural teeth, implants, and restorations



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It's an exciting time to be in dentistry, with new products to restore natural dentition and implants to replace missing teeth. Dental and medical professionals have joined together as first responders to focus on biofilm and its role in inflammation and oral-systemic disease.

Protecting our patients' health, dentition, and restorations by addressing biofilm and non-biofilm induced inflammation starts with a paradigm shift in hygiene protocols, technology, and products. To address this challenge, new guidelines for maintenance and recare for tooth- and implant-borne restorations have been developed, as well as a new classification for disease treatment.

The American College of Prosthodontists (ACP) developed a set of clinical practice guidelines for recall and maintenance of patients with tooth-borne and implant-borne restorations.<sup>1</sup> This is a good place to start with modifications to our maintenance protocols and recommendation that all patients of record be advised to present for in-office maintenance at least every six months to protect their restorations, and most importantly, their overall health.<sup>1</sup>

The ACP guidelines include the use of low-abrasion powder-streaming technology at the beginning of the maintenance visit to remove biofilm prior to probing or assessment. Monitoring occlusion is especially important for implant-borne restoration patients. If grinding or clenching is detected, adjustment to the occlusion is recommended, and a prescribed occlusal device may be needed to protect fixed restorations. At-home care maintenance for the patient should include the use of oral hygiene aids to disrupt the biofilm (e.g., dental floss, water flosser, interdental cleaners, electric toothbrushes).<sup>1</sup>

The American Academy of Periodontology (AAP) and the European Federation of Periodontology (EFP) developed a new classification of periodontal and peri-implant disease and conditions. The classification follows a medical

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model that allows clinicians to explain treatment to patients based on stage, extent, and progression. The 2017 World Workshop on the Classification of Periodontal and Peri-Implant Diseases and Conditions provided 19 review papers and four consensus reports that outline classification and conditions affecting the periodontium and biofilm-induced and nonbiofilm-induced inflammation.<sup>2-4</sup>

By focusing on biofilm, this classification and its guidelines change how dental professionals approach maintenance and home-care recommendations. New protocols, technology, and products are now available to remove biofilm, prevent biofilm formation, and protect teeth and implants.

## Detect, diagnose, and treat

Detection and diagnosis begin with a comprehensive dental exam, an up-to-date medical history, and full-mouth probing (FMP) that includes a new focus on bleeding points for inflammation identification. Below are some possible additions to your recare maintenance and disease treatment protocol for patients with natural teeth, restorations, implants, or all three.<sup>5</sup>

Test patients' saliva to identify pH and risk factors for disease and other conditions affecting the periodontium. Use products to identify plaque and biofilm and use powder-streaming technology with erythritol and glycine powder to remove the biofilm. Another consideration is to routinely use fluoride or antimicrobial varnishes to protect natural teeth and implants. Recommend neutral

pH home-care products for all patients with tooth-borne and implant-borne restorations.

Biofilm-focused care should include the use of fluoride varnishes, and any products used should be of a neutral pH, especially if implants are present. Examples of varnishes that are neutral and safe to use around teeth and implants include Fluor Protector (Ivoclar Vivadent), MI Varnish (GC America), and Vella (Preventech). Fluoride varnishes are recommended for caries prevention and sensitivity on natural dentition.

Biofilm-focused care includes the addition of an antimicrobial varnish. There is currently only one available on the market, Cervitec Plus (Ivoclar Vivadent; figure 1). It is recommended for prevention of biofilm formation around any implants, natural teeth, orthodontic bands, and crown and bridge restorations. Other applications include any inflammation present, recession, gingivitis, mucositis, and as an adjunct of periodontal disease treatment.



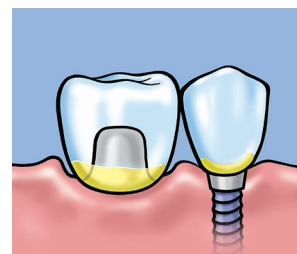
**FIGURE 1:** Cervitec Plus is available in the forms of a dispensing tube and single dose.

Cervitec Plus contains chlorhexidine *diacetate* (not gluconate) and thymol, and does not contain fluoride. It is formulated to be nonstaining and effectively control bacteria, and it is recommended for use in all age groups on natural dentition and implants. In an in-vivo study of 30 patients, it reduced the presence of *Porphyromonas gingivalis*, which has been shown to drive biofilm formation, for up to three months.<sup>6</sup> In addition, it has been shown to be 20% more effective

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in controlling gingival bleeding as an adjunct therapy following periodontal disease treatment of scaling and root planing (SRP) than SRP alone.<sup>7</sup>

It is important to note that chlorhexidine diacetate is different than the chlorhexidine gluconate rinse generally associated with chlorhexidine. Diacetate is a slow-release, targeted treatment applied into the sulcus along the gumline around crown or bridge restorations and recession on natural teeth, and into the perimucosal seal around the abutment or exposed threads on implants after maintenance procedures (figure 2). For high-risk disease treatment and implant patients who present for three-month recare visits (e.g., diabetic, periodontal and peri-implant disease), this varnish can make the difference by protecting teeth and implants with effective bacterial control until the next maintenance visit.



**FIGURE 2:** Application of Cervitec Plus to areas susceptible to biofilm formation.

As dental professionals, this is a vital time to protect our patients' teeth, implants, restorations, and most importantly, overall health. Our goal with new biofilm-focused care protocols and innovative products is to eliminate inflammation that can initiate the inflammatory cascade. The inflammatory cascade starts with tissue breakdown and can lead to bone loss in teeth and around implants.

The ACP's "Clinical practice guidelines for recall and maintenance of patients with tooth-borne and implant-borne dental restorations" and the AAP/EFPP periodontal and peri-implant disease classification information are a good place to begin. Gather the guidelines, classification, protocols, and products to take your practice into biofilm-focused care. **RDH**

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