Standards for Clinical Dental Hygiene Practice

Biofilm Control at the Gingival Frontier: 3-Step Oral Hygiene

The American Dental Hygienists’ Association’s Standards for Clinical Dental Hygiene Practice emphasize the necessity for dental hygienists to use cutting-edge scientific evidence in the implementation of a preventive oral hygiene regimen for our patients, such as a brush, floss and mouthrinse routine. The Standards require that dental hygienists recommend only those products that are supported by clinical trials and scientific evidence. Dental hygienists should recommend a complete brush, floss and mouthrinse regimen for all patients’ self-care routine based on the dental hygiene process of care as outlined in the Standards.

Oral health is fundamental to overall health and well-being. However, despite the availability of readily accessible preventive measures, oral disease remains a significant global economic, psychological and social burden. Estimated to affect 3.9 billion people worldwide, untreated oral disease represents considerable discomfort, disability and expenditure, ranking as the fourth most expensive disease to treat in industrialized countries.

Chronic gingivitis, to some degree, affects over 90 percent of the population. Left untreated, it can progress to more serious conditions, such as periodontitis. The National Health and Nutrition Examination Survey reports that from 2009 to 2012, 46 percent of American adults over 30 years of age have periodontitis, representative of 64.7 million people. Further, severe periodontitis affects 8.9 percent of the adult population over 30 years of age, a major cause of tooth loss and the sixth most prevalent condition in the Global Burden of Disease Study (GBD) 2010.

As oral biofilm is a leading cause of gingivitis, biofilm control is fundamental to maintaining oral health. However, the high incidence of oral disease worldwide would suggest that mechanical methods alone—and their inherent challenges of compliance and technique dependency—are insufficient for achieving and maintaining oral health. These challenges are why dental hygienists play such a key role in encouraging their patients to maintain a consistent and effective brush, floss and mouthrinse regimen.

Although brushing and other mechanical methods of interdental cleaning remove plaque from the tooth surface, the tooth surface represents only 25 percent of the oral surface exposed to bacteria. Other areas of the mouth can act as reservoirs for bacteria that can then re-colonize on teeth following dental prophylaxis or treatment.

The adjunctive use of an anti-microbial, effective mouthrinse has the potential to benefit the oral health of the public. It is a requirement of the Standards under Definition of Dental Hygiene Practice for dental hygienists to provide patient education on biofilm plaque control and home care protocol by incorporating techniques and products that will become part of an individualized self-care oral hygiene program.

Numerous systematic reviews and meta-analyses have reported that mouthrinses can provide a benefit beyond mechanical oral hygiene alone in preventing plaque accumulation. Systematic reviews and meta-analyses are vital components to making evidence-based treatment recommendations in medicine and dentistry.

A recent landmark meta-analysis led by Marcelo W.B. Araujo, DDS, MS, PhD, published in The Journal of the American Dental Association...
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in August 2015, evaluated studies with a focus on applicability to clinical practice. The meta-analysis reviewed randomized, observer-blind, placebo-controlled, as well as unpublished clinical studies assessing the effect of an essential oil-containing mouthrinse (MMEO) versus mechanical method (MM) in subjects with mild-to-moderate biofilm. The magnitude of the data pooled in this study is noteworthy—29 clinical studies spanning three decades and three different countries, all of at least six months’ duration, and over 5,000 patients.11

The meta-analysis evaluated a number of outcomes, including percentage of “plaque-free” sites (characterized by little to no plaque, as defined by a Plaque Index (PI) score ≤1), and percentage of “healthy sites” (considered generally healthy by dental hygienists, as defined by a Modified Gingival Index (MGI) score ≤1).

Specifically, at six months, MMEO subjects were five times more likely to have healthy sites compared to MM subjects, and greater than seven times more likely to have dental sites without visible plaque: plaque index (PI) less than or equal to 1. This meta-analysis represents a paradigm shift in evaluating oral health. In most clinical studies for plaque and gingivitis, indices such as the PI and MGI are utilized. While these are validated indices and widely accepted for clinical studies, they are not typically employed in clinical practice. In this meta-analysis, the outcomes that were evaluated are easily translatable to clinical practice, such as “healthy sites.” By using site-specific (tooth and location) data beyond whole-mouth biofilm reductions to interpret clinical data, the meta-analysis proposes a benefit-based approach to clinical research and practice.12

Dental hygienists should assess each patient individually to determine what combination of mechanical and chemotherapeutic interventions is best for improving and maintaining oral health, as supported by the Standards. Clinical evidence maintains that the adjunctive use of an essential oil containing mouthrinse with effective, professionally instructed brush and floss regimen creates a three-step oral hygiene plan that may help prevent the occurrence of oral diseases.

Adherence to the Standards of Clinical Dental Hygiene Practice helps dental hygienists assess and plan an oral health regimen to improve patients’ gingival health as well as decrease the level of biofilm accumulation. Daily preventive home oral care may be most effective when it combines brushing and flossing with mouthrinse, as indicated by the meta-analysis that demonstrates that implementation provides almost eight times greater odds for “plaque-free” sites and five times greater odds for healthy gingival sites. Familiarity with and implementation of research supporting such combination therapy is Standards-compliant practice for dental hygienists educating patients on an appropriate at-home oral care routine which includes clinically supported products and a brush, floss and mouthrinse regimen.

#### References:


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