

Lessons from global survey data:

What else can dental hygienists do to close the periodontal disease prevention gap?



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Periodontal disease threatens both the physical and fiscal health of society. Periodontitis, especially in its advanced stages, is the main cause of tooth loss among adults, and its economic burden has been estimated to be \$154.06 billion in the US and €158.64 billion in Europe.¹ Additionally, *Scientific American* has recently highlighted the association between poor periodontal health and systemic diseases including Alzheimer's disease,² colon cancer,² rheumatoid arthritis,^{2,3} endocarditis,³ cardiovascular disease,^{4,5} and heart failure.³ The authors note that study data support a causal link between periodontitis and diabetes:⁵ periodontitis is associated with higher levels of glycated hemoglobin (a measure of average blood glucose),^{5,6} and among individuals with diabetes, periodontitis is associated with more severe diabetes complications.⁶

Preventive care is widely recognized as key in the fight against periodontal disease and its physical and economic sequelae, but until recent years it has been hard to put a price on prevention. To estimate the monetary cost, a 2021 cost-benefit analysis of treatment versus prevention across six European countries determined that eliminating gingivitis, the precursor to periodontitis, through improved home care would have a strong return on investment compared

FIGURE 1: Respondents to three surveys represented 37 countries (shown in white) collectively. (Number of global respondents per survey: 706 for oral-systemic link; 480 for toothpaste; 4,345 for electric toothbrush)

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to the current approach.⁷ Moreover, a recent resolution of the 74th World Health Assembly affirmed the importance of a preventive approach to oral health, urging member states to focus more on health-centered prevention and less on pathology-driven treatment.⁸ Dental hygienists are in a unique position to respond to this call to prevention, which the Assembly addressed to “all stakeholders”⁸ in oral health.

The cornerstone of the dental hygiene profession is in promoting good oral hygiene practices. Oral hygiene is key in preventing periodontal disease. So, what can we do better as a profession? How can we close the gap between current practice and the global goal of preventing periodontal disease? To help answer these questions, the International Federation of Dental Hygienists, in partnership with Procter & Gamble, conducted three international surveys with more than 4,000 respondents from 37 countries (figure 1).⁹⁻¹¹ These surveys explored dental hygienists' knowledge and practices around prevention—mechanical and chemical plaque control—and the relationship between oral and systemic health. The survey findings revealed some opportunities for growth.

Oral health-systemic disease survey

According to this survey,⁹ most dental hygienists are aware of the link between oral health and overall health; about

90% of respondents agreed that this link has been established for cardiovascular disease and diabetes. The oral health practice that respondents deemed most important to reduce the risk for systemic diseases was regular plaque removal via toothbrushing (91%). However, only 25% and 16% indicated a belief that controlling plaque regrowth with an antimicrobial toothpaste and rinse, respectively, is important for reducing the risk of systemic disease. The reality is that at-home toothbrushing, even by the most skilled patients, does not remove or disrupt all biofilm nor do patients spend long enough in doing so.¹² Studies also show that antimicrobial toothpaste¹³ and rinse¹⁴ help control plaque beyond mechanical brushing, thereby reducing inflammation and bleeding, though some products and formulations outperform others. The best approach to control plaque and prevent plaque-associated diseases is to combine effective mechanical toothbrushing and an interdental cleaning method with clinically proven antimicrobial toothpaste and rinse.¹⁵

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Toothpaste survey

Another survey looked more closely at respondents' perception and recommendation of toothpastes.¹⁰ About 80% of respondents agreed that toothpaste plays an important role in oral health; however, about 40% do not recommend a specific nonprescription fluoride toothpaste. This may be because approximately 60% of respondents erroneously believe that all toothpastes provide similar benefits (figure 2). In fact, there are important differences among ingredients and formulations. Of the popular fluorides used in anticavity dentifrices, stannous fluoride is the only one that also improves gingival health,¹³ reduces plaque,¹³ ameliorates dentinal hypersensitivity,¹⁶ protects against erosion,¹⁶ and improves breath odor,¹³ when properly formulated to be stable and bioavailable.

Electric toothbrush survey

Two-thirds of respondents to the electric toothbrush survey agreed there is strong evidence showing superior plaque removal for electric toothbrushes over manual toothbrushes, and 96% of respondents often or sometimes recommend electric toothbrushes to their patients.¹¹ However, about half of respondents reported that among their patients, 50% or fewer act on this recommendation. This

8 of 10 agree toothpaste plays an important role in oral health



6 of 10 believe all fluorides provide similar benefits



4 out of 10 don't recommend a specific non-Rx toothpaste



FIGURE 2: Toothpaste survey data show that while 80% of respondents recognize the important role toothpaste plays in oral health, 60% do not realize there are differences among fluorides, and only 40% make specific nonprescription toothpaste recommendations. Copyright of Procter & Gamble. Used with permission.

data reveals an opportunity to seek solutions that increase patient adherence to professional recommendations. Respondents report that patients want more information about how electric toothbrushes compare to manual brushes (72%) and to other electric brushes (69%), suggesting that access to this information might increase patient compliance to the recommendation. Dental hygienists can share the powerful data that support the superiority of electric toothbrushes in general,¹⁷ and oscillating-rotating brushes in particular,¹⁸ for plaque removal and improved gingival health.

Practical implications

Looking at the survey results, we find some actionable data points to improve the oral health of our patients. Some of these data points may seem intuitive to those in our profession or some may be new, but the dental hygienist's passion is prevention, and these are some notable keys to improvement (figure 3).

These improvements begin with education. The evidence points to the importance of prevention, meaning oral hygiene cannot be trivialized. Looking for opportunities and engaging with the wider health-care team can underscore our role in this with the medical profession. Equally significant is the opportunity we have in the dental office. From the referring dentist to practice managers to the reception staff, all should realize and emphasize the importance of the appointment time spent learning necessary oral hygiene skills. The hygiene appointment is not just for "teeth cleaning"—it is the key pillar to maintaining health. Oral hygiene advice should be the central focus of the appointment, and strategies to promote positive behavior change (e.g., motivational interviewing¹⁹)

can be useful. We need the support of the entire dental team to reinforce this message.

As dental hygienists, it is in our patients' best interests to stay abreast of the science. Evaluating the plaque control benefits of therapeutic adjuncts such as toothpaste and rinse, along with being informed about best practices in the home self-care regimen, is a responsibility of the dental hygiene profession. New technologies have constantly advanced therapeutic benefits over the years, but this isn't always reflected in the undergraduate curriculum.

The next step is to educate our patients about effective products that fit their individual needs. The value of making patient-specific recommendations is recognized by experts,²⁰ so we should make evidence-based suggestions that our patients will comply with and benefit from. The survey data reveals there's an opportunity for dental hygienists to be more specific in their recommendations for antimicrobial toothpaste and rinse.⁹

While hygienists already overwhelmingly endorse electric toothbrushes, less than half think patients actually use them.

Ways to increase patient compliance

Any advice we give is beneficial only when patients comply, so how can we make our recommendations stick? There are many ways to increase the likelihood that patients will adopt the recommended procedures as part of their oral hygiene routine. Here are some simple steps to follow:

- **Provide information in conversation.** These messages can be reinforced via a prepared pamphlet or an instructional video/social media clip.
- **Offer a product sample** to make it easier for patients to evaluate the benefits of something unfamiliar.
- **Show them how and when to use the sample** to help ensure that patients get the best results.
- **Use demonstration programs** to allow patients to experience an electric toothbrush (think of a test drive) while in the dental chair. Along with brushing advice from the hygienist, this is a wonderful way to experience the correct brushing technique and feel of a brush.
- **Use interactive apps with electric toothbrushes** to reinforce proper brushing techniques at home.
- **Ask patients when** they could see themselves fitting what they've just learned into their routine.

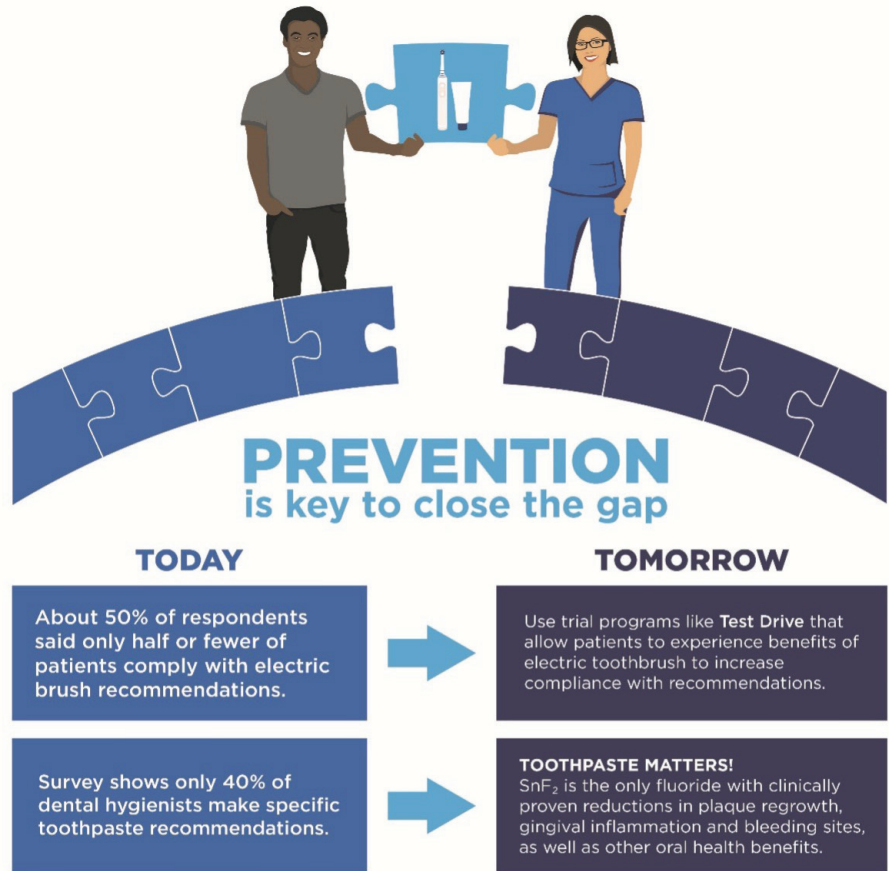


FIGURE 3: Closing the gap with prevention Copyright of Procter & Gamble. Used with permission.

Overcoming barriers

One of the key barriers to effective oral health advice is having a nonreceptive patient. Patients historically expect “treatment” when they have an appointment with the dental hygienist and normally don't see the value in oral hygiene instruction. What could make a patient more receptive to spending time learning how to improve their oral health than new evidence showing it costs more *not* to do it? Or explain how the condition of the mouth has a relationship to whole-body health? Self-care performed every day is the least expensive route with the best long-term outcomes.²¹

By educating ourselves, our colleagues, and our patients about choosing—and properly using—the right preventive care products, we can continue to improve oral health and prevent disease. In turn, this will undoubtedly have a positive impact on overall health as well as the health and economy of the community. Together, we *can* close the gap. RDH

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