

A Message from our Sponsor



Michael C. Lynch, DMD, PhD

On behalf of Johnson & Johnson Consumer Inc., we are proud to support the publication of a special issue of the *Journal of Dental Hygiene*, in conjunction with the American Dental Hygienists' Association's Annual Conference in Louisville, Kentucky, June 24-26, 2022.

While it is well understood by dental professionals that proper daily oral hygiene, i.e., mechanical methods and chemotherapeutic agents, is crucial for the prevention of oral diseases, it is less understood by many professionals what each component of the routine contributes. The goal of this special issue is to share exciting new clinical data on adjunctive oral hygiene regimens, as well as the potential barriers for patients in the adoption of these modalities.

Daily oral hygiene recommendations have remained fundamentally unchanged for over a century. In 1908, the organization now known as the American Dental Association published its first patient dental education pamphlet with recommendations to brush at least twice daily, clean between teeth with floss and a toothpick and see a dentist at least twice a year.¹ Over the ensuing years, many other professional organizations and experts shared similar recommendations to the public.

LISTERINE® Antiseptic Mouthwash was first marketed as an oral antiseptic to dental professionals in 1895, but it wasn't until 1914 that it was sold directly to consumers.² LISTERINE® has been studied and published in hundreds of peer-reviewed publications spanning back more than a century, beginning with *The Journal of Infectious Diseases* in 1906.³ In this special issue of the *Journal of Dental Hygiene*, two long-term (12-week) clinical trials demonstrate the adjunctive benefits of various regimens to twice daily brushing, adding to the large body of evidence on the benefits of LISTERINE® mouthrinse products containing essential oils.

The first paper describes a supervised clinical trial investigating the effects of various oral hygiene routines; all routines included twice daily brushing. These included supervised product usage of rinsing with LISTERINE®, professional flossing by a dental hygienist, and supervised self-flossing on the reduction of plaque, gingivitis, and gingival bleeding, compared to a negative control rinse. Twice daily rinsing with LISTERINE® statistically significantly improved gingival health at all

measurement points and in all assessments. For example, interproximal plaque was statistically significantly reduced for the LISTERINE® group (22.8% reduction), but not flossing by a dental hygienist (4.96% reduction) or supervised flossing (2.41% reduction) groups at week 12. In other words, the LISTERINE® group had 4.6 times greater reduction in interproximal plaque when compared to the flossing by a dental hygienist group. Additionally, interproximal gingivitis was statistically significantly reduced for all groups at week 12: LISTERINE® (46.4% reduction), flossing by a dental hygienist (26.4% reduction) and supervised flossing (21.6% reduction). This means that the LISTERINE® group had 1.8 times greater reduction in interproximal gingivitis when compared to the flossing by a dental hygienist group.⁴

The second 12-week clinical trial investigated the effects of various combinations of supervised mechanical and chemotherapeutic regimens on the prevention and reduction of plaque, gingivitis, and gingival bleeding. Due to the Covid-19 pandemic, virtual supervision was required to conduct the study. Participants using LISTERINE®, in combination with brushing or with brushing and flossing, experienced statistically significant reductions in supragingival plaque, gingivitis, and gingival bleeding compared to brushing only, and brushing and flossing at 12 weeks. Furthermore, brushing and flossing provided no additional plaque reduction compared to brushing only but did provide reductions in gingivitis and gingival bleeding compared to brushing only at 12 weeks.⁵

The second study included two additional components, dexterity and behavior.^{6,7} To clarify the role of dexterity on clinical measures of gingivitis, a licensed occupational therapist evaluated study participants' dexterity using a validated test. The results provide evidence of the correlation between dexterity scores and the effectiveness of various oral hygiene regimens;

less manual dexterity can limit dental flossing effectiveness. The results also demonstrated that the use of LISTERINE® improved interproximal gingival health and mitigated the dexterity variable.

Additionally, since few published studies have investigated how individuals' beliefs and perceptions might influence flossing or rinsing behaviors, a survey was conducted prior to randomization in the clinical phase. The results demonstrated that while more than 90% of the participants agreed that daily flossing and rinsing would result in healthier gums and protect their teeth from plaque and decay, only 16% reported flossing daily and only 17% reported rinsing with mouthrinse at least daily. Results of this survey suggest that the perceived barriers to flossing and rinsing, rather than beliefs about efficacy or benefits, may be the strongest differentiators in habitual flossing and rinsing.

One of the priorities of the ADHA's National Dental Hygiene Research Agenda (NDHRA) is to support research activities that enhance the profession's ability to promote the health and well-being of the public by testing and evaluating new therapies and prevention modalities. The research presented in this special issue directly addresses this goal and provides additional data-driven, clinically meaningful evidence to assist dental healthcare providers in recommending plaque and gingivitis control methods as part of their patients' daily oral care routines.

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Scientific Engagement, Oral Health

Johnson & Johnson CONSUMER INC.

1. Minutes of the Executive Council: Report of the special committee on revision of the hygiene report—The mouth and the teeth. In: Transactions of the National Dental Association. Philadelphia: Press of the 'Dental Cosmos.' 1909:17-9.
2. Gurowitz M. LISTERINE Antiseptic: A very useful product [Internet]. Skillman (NJ): Johnson & Johnson; 2011-22 [cited 2022 May 12]. Available from: <https://www.kilmerhouse.com/2008/02/listerine-antiseptic-a-very-useful-product>
3. Wadsworth, A. Mouth disinfection in the prophylaxis and treatment of pneumonia. *J Infect Dis.* 1906 Oct 3:(5)774-97.
4. Bosma ML, McGuire, JA, Sunkara A, et al. Efficacy of professional flossing, supervised flossing and mouthrinsing regimens on plaque and gingivitis: a 12-week, randomized clinical trial. *J Dent Hyg.* 2022 Jun; 96(3);8-30.
5. Milleman J, Bosma ML, McGuire JA, et al. Comparative effectiveness of flossing and mouthrinse regimens on plaque and gingivitis: A 12-week virtually supervised clinical trial. *J Dent Hyg.* 2022 Jun; 96(3);21-34.
6. Milleman K, Milleman J, Bosma ML, et al. Role of manual dexterity on mechanical versus chemotherapeutic oral hygiene regimens. *J Dent Hyg.* 2022 Jun; 96(3);35-45.
7. Rotella K, Bosma MK, McGuire JA, et al. Habits, practices, and beliefs about floss and mouthrinse among habitual and non-habitual users. *J Dent Hyg.* 2022 Jun; 96(3);46-58.