

The Integral Role of Essential-Oil Containing Mouthrinse in Preventive Daily Oral Care.

Oral health is fundamental to overall health and well-being.¹ However, despite the availability of readily accessible preventive measures, oral disease remains a significant global economic, psychological, and social burden.² Estimated to affect approximately 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.^{2,3}

Despite preventive measures that are readily accessible, oral disease—impacting approximately **3.9 billion people**—remains a significant global burden.

Gingivitis is estimated to affect 63%-100% of the world's population at some point in their lives.^{2,4} Left untreated, gingivitis can progress to more serious conditions, such as periodontitis. Approximately 2% of youths are affected by early-onset periodontitis and 5%-20%^{2,5} of adults are affected by severe periodontitis, a major cause of tooth loss and the sixth most prevalent condition in the Global Burden of Disease Study (GBD) 2010.³

Plaque control is fundamental to achieving oral health.⁶ Current recommendations for at-home oral care focusing on mechanical methods only (brushing and interdental cleaning) continue to be the standard within the dental professional community.⁶ Despite the focus on mechanical methods, the incidence of gingival inflammation still remains high.

Although brushing and other mechanical methods of interdental cleaning remove plaque from the tooth surface, the tooth surface represents only 25% of

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the oral surface exposed to bacteria.⁷ Other areas of the mouth can act as reservoirs for bacteria that can then re-colonize bacteria on teeth following dental prophylaxis or treatment.⁸

A breadth of systematic reviews and meta-analyses have reported that mouthrinses can provide a benefit beyond mechanical oral hygiene alone in preventing plaque accumulation and gingivitis.^{6,8-10} Systematic

reviews and meta-analyses are vital components to making evidence-based treatment recommendations in medicine and dentistry.

A recent landmark meta-analysis was conducted that evaluated studies with a focus on applicable outcomes to clinical practice (JADA, August 2015, available at <http://goo.gl/wZ6t9T>). The meta-analysis reviewed randomized, observer-blind, placebo-controlled, published as well as unpublished clinical studies assessing the effect of an essential oil-containing mouthrinse (MMEO) vs mechanical method (MM) in subjects with mild-to-moderate plaque and gingivitis (typical mild to moderate plaque and gingivitis inclusion criteria of MGI ≥ 1.75 and PI ≥ 1.95). The magnitude of the pooled study is noteworthy—over 3 decades of data, 29 studies spanning 3 different countries, 6-months' duration, over 5000 patients, and 500,000 gingival sites.¹¹

Results from the meta-analysis demonstrated clinically relevant benefits of the daily use of EO mouthrinse for preventing gingivitis and plaque buildup beyond mechanical oral hygiene alone. Specifically, at 6 months, MMEO subjects had 5 times higher odds of having healthy sites (MGI ≤ 1 : mild inflammation of any portion of gingival unit to no inflammation at all) versus MM subjects, and >7 times higher odds of having “no detectable plaque” sites (PI ≤ 1 : isolated flecks of plaque at gingival margin to no plaque).¹¹

MMEO subjects had **5x higher odds** of having healthy sites and **>7x higher odds** of having “no detectable plaque” sites than MM subjects.

This meta-analysis represents a paradigm shift in evaluating oral health. In most clinical studies for plaque and gingivitis, indices such as the Plaque Index (PI) and Modified Gingival Index (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 the percentage of healthy sites and “no detectable plaque” sites. By using site-specific (tooth and location) data beyond whole-mouth plaque and gingivitis reductions to interpret clinical data, the meta-analysis proposes a benefit-based approach to clinical research and practice.¹¹

In recent years, the integral and essential role that oral health plays in overall general health has been acknowledged by widely recognized health organizations.¹²⁻¹⁴ And, while there have been advances in understanding the importance of this connection, much still needs to be done to incorporate a new oral health care model into clinical best practices—one that regards oral care as an integral part of general health, addresses the needs and demands of the public and the right of each individual to good oral health, and shifts from a traditionally curative approach to one of prevention and promotion of good oral health.¹⁴

Preventive daily oral care starts at home. Implementation of a long-term oral care routine that provides almost **8x higher odds for “no detectable plaque” sites** and **5x higher odds for healthy sites** can be compelling information for dental professionals when educating patients on the appropriate at-home oral care routine.

Proactive recommendation
of adjunctive EO mouthrinse helps to achieve and maintain good oral health in patients with mild to moderate plaque and gingivitis.



Scientific Information Compiled by:

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References: 1. World Health Organization. Oral health. Fact sheet No 318. April 2012. <http://www.who.int/mediacentre/factsheets/fs318/en/>. Accessed April 17, 2015. 2. Petersen PE, Bourgeois D, Ogawa H, Estupinan-Day S, Ndiaye C. The global burden of oral diseases and risks to oral health. *Bull World Health Organ*. 2005;83(9):661-669. 3. Marcenes W, Kassebaum NJ, Bernabe E, et al. Global burden of oral conditions in 1990-2010: a systematic analysis. *J Dent Res*. 2013;92(7):592-597. 4. Eke PI, Dye BA, Wei L, Thornton-Evans GO, Genco RJ. Prevalence of periodontitis in adults in the United States: 2009 and 2010. *J Dent Res*. 2012;91(10):914-920. 5. Albarran JM, Brown LJ, Loe H. Clinical features of early-onset periodontitis. *J Am Dent Assoc*. 1997;128(10):1393-1399. 6. Gunsolley JC. Clinical efficacy of antimicrobial mouthrinses. *J Dent*. 2010;38(Suppl 1):S6-S10. 7. Kerr WJS, Kelly J, Geddes DAM. The areas of various surfaces in the human mouth from nine years to adulthood. *J Dent Res*. 1991;70(12):1528-1530. 8. Boyle P, Koehlin A, Autier P. Mouthwash use and the prevention of plaque, gingivitis and caries. *Oral Dis*. 2014;20(suppl 1):1-68. 9. Gunsolley JC. A meta-analysis of six-month studies of antiplaque and antigingivitis agents. *J Am Dent Assoc*. 2006;137(12):1649-1657. 10. Swango PA. Regular use of antimicrobial mouthrinses can effectively augment the benefits of oral prophylaxis and oral hygiene instructions at 6-month recall intervals in reducing the occurrence of dental plaque and gingivitis. *J Evid Base Dent Pract*. 2012;12(12):87-89. 11. Araujo M, Charles C, Weinstein R, et al. Meta-analysis of the effect of an essential oil-containing mouthrinse on gingivitis and no detectable plaque. *J Am Dent Assoc*. Manuscript ID: 539-14.RI. 12. U.S. Department of Health and Human Services. Oral Health in America: A Report of the Surgeon General (Executive Summary). Rockville, MD: U.S. Department of Health and Human Services, National Institute of Dental and Craniofacial Research, National Institutes of Health, 2000. 13. Petersen PE, Yamamoto T. Improving the oral health of older people: the approach of the WHO Global Oral Health Programme. *Community Dent Oral Epidemiol*. 2005;33(2):81-92. 14. Glick M, da Silva OM, Seeberger GK, et al. FDI Vision 2020: shaping the future of oral health. *Int Dent J*. 2012;62(6):278-291.

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*Based on overall mean percentage of healthy sites per subject after 6 months. Post hoc analysis of Sharma et al clinical study. A randomized, 6-month, controlled, observer-blind, parallel-group clinical trial, conducted according to American Dental Association guidelines; n=237 healthy subjects with mild-to-moderate gingivitis evaluable at both 3 and 6 months. Subjects rinsed twice daily for 30 seconds with 20 mL of LISTERINE® COOL MINT™ at least 4 hours apart.

¹ Sharma N, Charles CH, Lynch Mc, et al. Adjunctive benefit of an essential oil-containing mouthrinse in reducing plaque and gingivitis in patients who brush and floss regularly: a six month study. Am J Dent Assoc. 2004;135(4):496-504.

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