Tongue-Cleaning Methods: A Comparative Clinical Trial Employing a Toothbrush and a Tongue Scraper

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Background: It is estimated that approximately 85% of all halitosis cases have their origin within the mouth; of these, 50% are caused by tongue residues. Previous studies have established that hydrogen sulfide and mercaptans are the primary components of halitosis. Thus, tongue cleaning gains importance as a means of halitosis management.

Methods: This investigation compared the efficacy of two mechanical methods for tongue cleaning through a handheld sulfide monitor. This crossover trial was carried out with 10 healthy subjects, 20 to 50 years old. Before the baseline measurement of the volatile sulfur compounds (VSCs), the subjects were instructed to refrain from any tongue cleaning method for 48 hours. The 10 participants were then placed in one of two groups (five each): 1) first week: tongue scraper, second week: soft-bristle toothbrush; 2) first week: toothbrush, second week: tongue scraper, with a 48-hour wash-out period between each week.

Results: The baseline measurements were compared with those of the end of each week using the Dunn method ($\alpha = 0.01$). The tongue scraper showed a 75% reduction in VSCs, while the toothbrush only achieved a 45% reduction in VSCs.

Conclusion: Although the tongue coating was removed by both methods, the tongue scraper performed better in reducing the production of volatile sulfur compounds. *J Periodontol 2004;75:1009-1012.*

KEY WORDS

Halitosis/etiology; halitosis/prevention and control; hydrogen sulfide/analysis; tongue; toothbrushing.

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The most common concept concerning individual health is the harmony of one's physical, mental, and social well-being. The simple absence of disease is not accepted as an indication of health.

Besides embarrassment, shyness, and occasional difficulties in communicating in a foreign language in which one is not fully conversant, halitosis has been cited as an obstacle in personal relationships. Furthermore, it may signal the presence of disease.

Previous studies have established that hydrogen sulfide and mercaptans are the primary components of halitosis.[1,2] According to Tommasi, halitosis can appear through two main mechanisms: 1) the odor substances released from the mouth and respiratory path by the passage of normal breath; and 2) the elimination of the already affected breath during hemathosis (deriving from odors eliminated by the lungs).[3]

One mistaken concept blames the stomach for most halitosis cases. It is safe to say that only through gastric eructation (belching) will there be the elimination of aggressive breath from the stomach, since in resting conditions, the cardia zone is contracted and the sphincter pressure prevents reflux.[4,5]

Halitosis, also called fetor ex ore or fetor oris, is the offensive or unpleasant odor eliminated from the oral cavity. Much has been said regarding the etiology of halitosis: retention of odorous meal particles between the teeth; tongue coating; gingivi-