

TONGUE CLEANING DEVICES— WHICH DEVICES DO PATIENTS PREFER?

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CURRENT STATUS OF ORAL HYGIENE

During the past 30 years, people have accepted the dental profession's recommendation to clean their teeth and gums. According to a market research firm's findings, Americans spent \$1.8 billion on toothpaste in 2000, approximately \$715 million on oral-care gum, approximately \$740 million on mouthwash and other dental rinses, and \$950 million on toothbrushes and dental floss.¹ It is clear that the public is concerned with having good oral hygiene and fighting bad breath. At least they are putting their money where their mouth is. So, should also cleaning our tongue be part of our personal hygiene ritual?

According to Seemann, et al., mechanical tongue cleaning is important to oral hygiene. Volatile sulfur compounds that are produced by bacteria on the tongue not only are components of oral malodor, but also are involved in the development of periodontitis and gingivitis.² Therefore, it appears that tongue cleaning is not only an important procedure to reduce bad breath, but also important to help promote good oral health.

HALITOSIS AND ITS TREATMENT

Millions of people are concerned about halitosis. According to Rosenberg, most adults probably experience bad breath at least sometimes and maybe 25% of the population suffer routinely. He stated that frequent causes of bad breath originate from bacteria in the mouth and that most cases seem to be due to the breakdown of proteins of these bacteria. In people with healthy teeth and gingiva, the odor most likely tends to initiate from the back of the tongue.³

It seems that tongue cleaning can reduce oral malodor, however the effect does seem to be short lived. Since the dentist is increasingly being called on to help patients with complaints of bad breath, finding reliable treatment methods for patients is a much-needed service. Keep in mind that in order to properly treat breath malodor, its cause must be determined. The literature suggests that the main source is the papillae on the back of the tongue, and other factors such as poor oral hygiene, gingival or periodontal problems, defective restorations, ill-fitting dentures and dry mouth.

According to Loesche and Kazar, "clinical dentistry has responded to the public's demand for treatment of halitosis with the establishment of bad breath clinics". In these clinics a specific treatment is rendered, upon evaluation of the cause of the halitosis. "The oral malodor from the overgrowth of proteolytic, anaerobic bacteria on their tongue surfaces can be successfully treated by a regimen that includes tongue brushing, tooth brushing and possibly the usage of mouthrinses containing various agents such as zinc.

METHODS

Local pharmacies and web sites were scanned to determine the current availability of tongue cleaning devices. In doing so, various tongue cleaning devices including toothbrushes, tongue brushes, tongue scrapers, tongue gels and various mouthwashes were found. The objective of the study was to have the patients evaluate a sampling of these tongue-cleaning devices to determine which ones they preferred. The study consisted of 30 randomly selected subjects. Each patient was instructed in the use of 3 different tongue cleaning devices: Dr. Wieder's Original Tung-Brush (Peak Enterprises, Inc., Sarasota, FL), Breath Rx Gentle Tongue Scraper (Discus Dental, Inc., Culver City, CA), and E-Z Sweep™ Tongue Cleaner (E-Z Floss Palm Springs, CA) and a conventional toothbrush. Patients used these devices for a 2-week period, each device one time per day. They completed a daily log of each device, indicating the time and duration of use. Each patient rated each device using a preference questionnaire at the end of the second week. Additionally, they completed a visual analogue scale (VAS) with a scale rated from 0–100 with 0 representing "dislike" and 100 "like". The study was conducted at Nova Southeastern University, College of Dental Medicine in Ft. Lauderdale, Florida.

RESULTS

After the two-week period with 100% response, 91% of the participants said they would prefer to purchase the Dr. Wieder's Original Tung Brush. The overall VAS evaluation of the products scored out: Dr. Wieder's Original Tung Brush 75%, Breath Rx Gentle Tongue Scraper 36%, and EZ Sweep™ Tongue Scraper 26%.

DISCUSSION

The results of this study indicate patients prefer a lower profile brush over the other choices. This is corroborated by Malemacher who found toothbrushes, while helpful, have a high profile (thick head) which limits their ability to get far enough to the back of the tongue without gagging. The tongue scrapers were reported by participants to be less effective in cleaning deeper areas of the tongue. A tongue brush and tongue-cleansing gel combination may help control bad breath significantly. "The combination of tongue brush and tongue-cleansing gel provides a mechanical and chemical cleansing action". Over the counter mouthwashes makes the problem with bad breath worse. They contain alcohol, which has a drying effect on the mouth. This increases the activity of the anaerobic bacteria, thus increasing the volatile sulfur compounds (VSC).⁴

Seemann, et al. did a three-way crossover study with 15 male and 15 female subjects to study the effectiveness of the One-Drop Only Tongue Cleaner (brushes and scrapes), the Tongue-Putzer tongue scraper and a regular toothbrush. found that there was no significant difference between the groups. The toothbrush (33%) reduced oral VSC levels less than the tongue cleaner (42%) and the tongue scraper (40%). After using the tongue cleaner, reduced VSC values could be detected longer than after using either the tongue scraper or toothbrush. The authors concluded that the tongue cleaner (a combination brush and scraper was slightly more effective in reducing oral VSC levels than were a regular toothbrush or tongue scraper. The clinical significance of the study was found to be questionable, since a significant VSC reduction for more than one hour could not be detected.⁵ Also, a study performed by Hoshi and van Steenberghe showed that the VSC level after 60 minutes regular toothbrush use was not significantly lower.⁶ Future studies need to be completed to verify earlier studies that record the duration of time wherein tongue cleaning is effective. Our preliminary studies with a halimeter suggests that tongue cleaning does reduce sulfur compound levels but no consistent data so far relates to average benefit-time.

SUMMARY

There are numerous tongue cleaning devices available for people to select but it appears that they prefer a brush-like device which is short in height to allow access to the posterior region of the tongue. Additionally, they felt that a brush provided a better cleaning action than a scraper design.

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