V. BREATH MINTS CAN CAUSE BAD BREATH

The first principle is that you must not fool yourself—and you are the easiest person to fool. **Richard Feynman (1918–1988)—American, physicist, educator.**

A COMMON CONDITION:

Bad breath (halitosis) is a common condition afflicting as many as 80 million adults and children in the U.S. alone. This embarrassing and psychologically debilitating condition affects their social and business lives. Lacking understanding about the nataure of halitosis, the very methods used to temporarily mask unpleasant odors actually may assist in causing even more bad breath.

The "physiology" (physical aspects) of oral smell is complex. Occasional bad breath may be simply the result of normal chemical evaporation of ingested foods such as onions or garlic. Hormonal changes, especially in women, may also cause slight changes in mouth odor. The primary origin of continual bad breath or "chronic halitosis" is a result of oral inflammation and excessive oral bacterial growth.

It has been observed that around 4,000 different "types" of bacteria normally reside in the mouth. For the most part, they are not only harmless but also assist in the digestive process (non-pathogenic streptococci). Typically, bad breath is caused by cell putrefaction and the excessive growth of specific "anaerobic" (not needing oxygen for reproduction) bacteria accumulating on oral "mucosa" (the pink skin of the whole mouth and gums), teeth, and especially the tongue.

Research has shown that up to 90% of halitosis is caused by some specific oral disorder. The bacterial growth and its associated chemical degradation is linked to any remaining food debris, but also results from various oral conditions such as periodontal (gum) disease and tooth decay. Halitosis can also result from hormonal changes, respiratory, digestive, and systemic health problems.

Many long-time (chronic) sufferers have regarded a possible solution to their bad breath as virtually hopeless. Simply attempting to mask their problem, they fail to address the central cause. Here again, education and prevention are the keys: Cellular food debris putrefaction and the proliferation of certain anaerobic bacteria that can accumulate on the tongue result in the formation of specific compounds, collectively known as "volatile sulfur compounds" (VSCs).

How can breath mints, mouthwashes and sprays lead to more bad breath and even promote oral disease? As occured with tooth decay, the regular use of many popular rinses, "breath mints" and other sweetened lozenges or chewing-gum cause frequent harmful changes in the normal acidity (pH) of the saliva.

As discussed previously, each time this salivary pH drops to a more acidc level, adverse bacterial reproduction and structural breakdown increases. This is followed by a further pH drop. More acidic salivary pH changes promote further increased bacterial reproduction, resulting in even more deterioration and further breakdown of teeth, gums, and supporting bone. Always check the content labels on any of these "breath" products.

Many mouthwashes, such as the ever-popular Listerine, may also contain alcohol, when last reviewed. Some products, contain up to 20 to 30 percent at full strength. Unfortunately, when used continually, this effective anti-bacterial tends to also dry the mouth and tongue, reducing the volume of salivary flow (xerostomia). Some studies have additionally shown concentrations in excess of even 10 percent alcohol may increase oral tissue-inflammation and other mouth changes associated with bad breath in some patients.[1]

Assortments of alcohol-free products exist, with chlorhexidine gluconate, chlorine dioxide, zinc chloride, thymol, and/or various polyphenol oils. Such alcohol-free mouth rinses are easily obtained: *Biotene*™ (Laclede: 800-922-5856), *Tom's Natural Mouth Rinse*™ (800-775-2388), *Rembrandt Plus*™ (Denmat: 800-445-0345), Cotrell's *Rejuvinate*™ (800-843-3343), and a mix-your-own from *Supersmile*™ (800-784-7645), just to name a few. Chlorhexidine gluconate has shown a slightly greater effectiveness.[2]

*Normally, humans produce an average of one to two liters of saliva per day.

An estimated thirty-two million Americans are at risk for dry-mouth (xerostomia*). Seniors regularly take ncreased number of medications; many of these result in xerostomia or a variety of other associated periodontal side effects. Because of their decreased salivary flow, lower-fiber, or often over-cooked diet and, their decreased hygiene capability, the elderly are especially susceptible to chronic bad breath. At about seventy years of age, an increase in some of the more viscous oral baceria can also increase debris breakdown that may then cause "root caries" (decay below the tooth-crown and the gum-line).[3-4]

Higher fiber content diets such as raw or very lightly cooked vegetables, along with vigorous rinsing and tongue brushing, are of great benefit and may additionallt provide an increased sense of taste.[5]

For more effective actual tongue "cleansing" various tongue hygiene-aids are now also available. These various products, when used in combination with appropriate, patient-specific treatments and careful patient education, can help control odor-causing bacteria and help neutralize their odor-producing VSC-molecules. However, halitosis has no age boundary and thorough tongue hygiene should certainly never be limited to the elderly. Any program of regular brushing and flossing is harmfully incomplete without the reinstatement of specific attention to the cleanliness of this essential organ with each routine (see next).

1. Ralph WJ: Oral hygiene - why neglect the tongue? Austral Dent J, 33(3): pp224-225,1988.

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3. Nolte WA: Oral Microbiology, 3rd ed. St Louis: Mosby,: pp245-246,1977.

4. Massler M: Geriatric dentistry: root caries in the elderly. J Prosth Dent, 44: pp147-149,1980.

5. Massler M: Geriatric nutrition: the role of taste and smell in appetite. J Prosth Dent, 43: pp247-250,1979.

In any conflict, terrain may be classified as per its nature to be accessible, entrapping, indecisive, constricted, precipitous, and distant. **Sun Tzu (c. 550 B.C.) Chinese, author—"The Art of War".**

THE TONGUE AND YOUR HEALTH:

Eastern and Asian peoples, ancient Romans, and wealthier Westerners in the 18th and 19th centuries, long practiced tongue scraping with great rigor.[1] The papillae (tongue surface fibers) provide roughened

shapes that are ideal for the retention of bacteria and food debris. In spite of the fact that the tongue also occupies almost one third of the oral cavity, the value of tongue hygiene seemed to have escaped even some otherwise very hygiene-conscious individuals. Tongue hygiene is also often neglected or ignored in the dental prevention programs recommended by many of our dental offices.

1990s studies found patients with periodontal disease had eight times greater levels of VSCs than those with healthy gums. Chemical and mechanical redudction of VSC concentrations may also be a significant adjunct to periodontal therapy and prevention of priodontal disease.[2-3] Thus, research into the causes and control of VSCs in halitosis has again brought this intuitive aspect of tongue hygiene and its anatomy to greater prominence. A reduction in the debris that collects on the teeth *and* tongue will reduce the ability of organisms to multiply and thus inhibit bacterial plaque formation.[4-5] These bacteria with their subsequent VSC-byproducts are the direct cause of bad breath. Suprisingly, the singular importance of tongue hygiene has only recently begun to reach public awareness within Western society.

Additionally, oral and tongue piercing has become increasingly popular with today's youth. Long before the current fascination with tongue ornamentation and piercing, the tongue's tissue structure has been shown to provide an extremely effective habitat for the multiplication of microorganisms. Unfortunately, a report in the March-April of 2002 issue of *General Dentistry* found one in five oral piercings becomes infected. Oral piercings, therefore, will require even more meticulous hygiene and they will be particularly problematic in smokers.

Until the past century, careful observation of the tongue played a very important role in the determination of disease. This previous significance of the tongue in the evaluation of general diseases of the body may have become outdated in the light of our more modern-day advances in diagnostic medicine's scientific knowledge and sophisticated laboratory techniques. One current test still advised, as an early warning sign of a stroke, is to ask the person to "stick out his or her tongue." A tongue that appears unusually crooked, if it makedly goes to one side or to the other, can be indication of a possible stroke.

Your breath and specific mouth odors often continue to be used to help indicate the onset of certain other medical problems.[6] Visually, poor