

TAKING THE BITE OUT OF GUM DISEASE

An Interview with Thomas Rams, D.D.S., M.H.S.

Safeguard your teeth and overall health by caring for your gums with easy-to-implement preventive steps.

by Patrick Perry

Two decades ago, the *Post* first introduced the sage advice of Dr. Paul Keyes, a leading researcher at the NIH and pioneer of nonsurgical periodontal (gum) disease treatment to save one's teeth. While then highly controversial, the Keyes Technique stressed that the best defense against periodontal disease is a good home oral hygiene program that included routine cleaning with baking soda, salt, and peroxide.

Flash-forward to the present, and his preventive insights are timelier than ever. Today, about 80 percent of American adults suffer from some form of periodontal disease, according to the National Institute of Dental and Craniofacial Research. In addition, accumulating evidence now points to a potential link between severe forms of periodontal disease and a host of problems throughout the body, including heart disease, diabetes, blood infection, low birth-weight babies, and (more recently) pancreatic cancer as reported in the



DR. THOMAS RAMS

Journal of the National Cancer Institute in January by researchers at Harvard University.

The root of the problem lies with bacteria that grow as dental plaque on tooth surfaces.

The mouth is filled with millions of bacteria always on the move. While most are relatively harmless, others are pathogens that focus on attacking the teeth and gums.

The good news is that in most people gum disease is preventable, and very treatable if caught early



For the "world's best homemade mouth rinse," Dr. Paul Keyes—a pioneer of the nonsurgical solution to oral health—uses baking soda and apple cider vinegar. When combined, the dynamic duo creates a foaming chemical reaction which eliminates the harmful bacteria that destroy teeth and gums.

enough. Attention to everyday home oral hygiene that includes brushing with baking soda, meticulous professional cleanings, and careful diagnostic monitoring by the dentist—can prevent gum disease and help you keep your teeth for a lifetime. Today, a wide variety of toothpastes containing baking soda are available. Dr. Keyes is also now championing a homemade anti-bacterial formulation of vinegar and baking soda to combat infection and preserve the gums.

The *Post* interviewed Dr. Thomas Rams, a board-certified periodontist who worked with Dr. Keyes at NIH and who now serves as senior associate dean and the Paul H. Keyes Professor of Periodontology at Temple University School of Dentistry in Philadelphia, to bring you an update on the Keyes

approach to preventing and treating gum disease.

Post: Can you discuss the current thinking about oral health, prevention, and Dr. Paul Keyes' original recommendations?

Dr. Rams: Today, periodontal treatment is more important than we ever thought. Until recent years, nobody envisioned that untreated periodontal infections could potentially increase a person's risk for cardiovascular disease, stroke, and poor diabetic control.

Now, a strong statistical relationship is recognized between poorly treated severe periodontal disease and the occurrence of cardiovascular (heart) disease. In fact, some data suggest that severe periodontal problems precede and help trigger the onset of cardiovascular disease.

As a result, the consequences today of poor periodontal health extend beyond just saving teeth in the mouth. I ask patients, "Do you exercise? Try to lose weight? Watch your diet?" They'll say, "Yes, because I want to live a long and healthy life." I then ask, "Why then don't you take care of your teeth?" They do not realize that poor dental conditions might reduce their life span.

Post: Do people believe genetics plays a major role?

Dr. Rams: Genetics plays a significant role because severe periodontal disease runs within families from generation to generation. But genetic susceptibility doesn't mean that periodontal disease is inevitable or untreatable. The driving force behind periodontal disease is bacterial infection growing

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Gum diseases are the major cause of adult tooth loss. While cavities are a big problem for kids, once you're an adult you're far more likely to lose your teeth to gum diseases. The older you are, the greater the risk. According to the National Health & Nutrition Survey, 90% of adults have gingivitis, an early form of gum disease. 50% of those over age 55 have periodontitis; the worst form of gum disease. Unless something is done, they'll likely lose their teeth. Even worse, Studies have linked periodontal diseases to serious medical problems like heart disease, diabetes, respiratory disease and osteoporosis.

Gum diseases are caused by subgingival bacteria that live below the gums where it's difficult to clean with a toothbrush. The Viajet Oral irrigator reduces bacterial levels with 1,200 pulses of water that flush out bacteria and food particles from under the gums and the nooks and crannies around the teeth, leaving the mouth feeling clean and invigorated.

Dr. Paul H. Keyes has used and recommended Viajet Irrigators for over 20 years. In fact, some of the features on the current Viajet Pro were his original suggestions.

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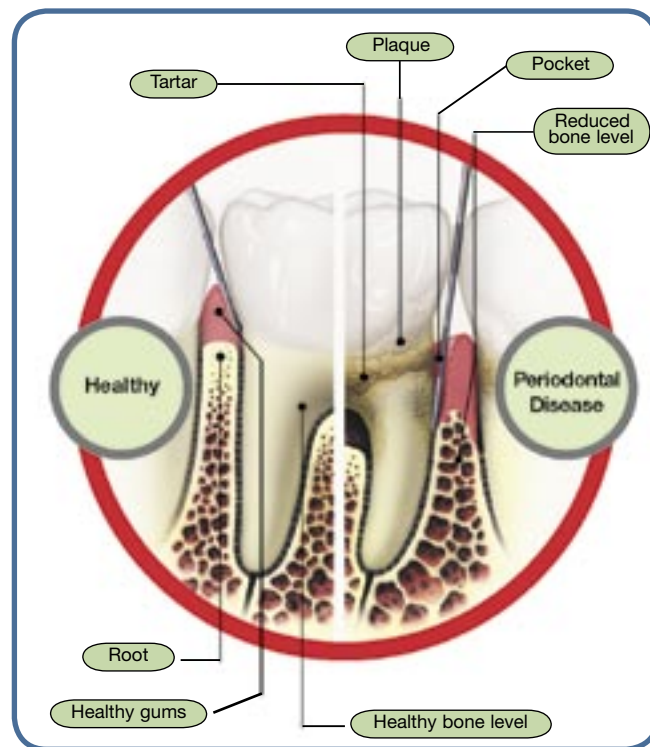
on the teeth. Even in highly genetically susceptible individuals, you can arrest the disease process by adequately controlling dental plaque bacteria, so teeth can be retained in a healthy state. If you improve nonsurgical care with antimicrobial agents—antibiotics if necessary or topically applied antiseptics—so much the better.

Post: Are these bacterial infections transmissible?

Dr. Rams: Yes, we are dealing with a contagious bacterial infection, passed largely by transfer of saliva during kissing or close environmental contact—that is how the pathogenic organisms are thought to be acquired. If a person practices good home oral hygiene with sufficient antibacterial potential, the organisms will be killed. Unfortunately for many people, self-care is not optimal or effective, so bacteria establish in the gum crevices, then multiply and initiate disease in susceptible individuals.

Post: Recently, Dr. Keyes mentioned that he uses pure, undiluted apple cider vinegar. Are you familiar with this combination?

Dr. Rams: Yes, Paul has come up with a remarkable finding. If you want the world's best homemade mouth rinse, a two-phase approach is used. First, place baking soda into your mouth by brushing with a baking soda toothpaste, or rinsing with some baking soda mixed into water. Second, swish a tablespoon of apple cider



The difference between healthy and unhealthy is largely a matter of oral hygiene. Unlike many diseases that afflict your body, the most common dental diseases—tooth decay and periodontal disease—are caused by bacterial infections that one can totally prevent and arrest with routine care.

vinegar (obtained from the grocery store) in your mouth. The immediate chemical reaction between the baking soda and the apple cider vinegar is amazing. Baking soda is a base with a pH of about 9, while vinegar is a very weak acid. They swiftly neutralize each other by forming carbon dioxide that instantly bubbles and foams in your mouth, and fizzes on the top of your tongue. While it is foaming, take a toothbrush and brush your teeth and the top of your tongue, then rinse your mouth out with water. You'll find that your teeth are remarkably slick,

and bacterial coatings on the top of the tongue, which are involved in bad breath, will be gone. If you want a biologically friendly mouthwash without any harsh chemicals or alcohol, then simply pick up some baking soda and apple cider vinegar from your grocery store, and go to it!

Post: Do you floss before brushing? What else do you recommend?

Dr. Rams: Dental floss is helpful to break up material between teeth before brushing. However, in my clinical practice, I've also recommended to many patients that they add a highly diluted bleach solution into an oral irrigator to help disinfect periodontal pockets between and around teeth with severe periodontal disease. To do this, an oral irrigator is filled with warm water, and one-half teaspoon of regular household (such as Clorox®) bleach is added and mixed in. The diluted bleach solution is

irrigated between the teeth at a fairly high-pressure setting, followed by mouth rinsing with water. For persons with severe periodontal disease, this intensive home disinfection cleansing needs to be carried out on a daily basis to best control pathogenic dental plaque bacterial growth. For people who don't have significant periodontal problems, it could be done as a preventive procedure once or twice a week. After using this solution the irrigator should be rinsed with plain water.

Post: Is microscopic analysis still part of the process?

Dr. Rams: I use a phase-contrast microscope whenever I'm chair side to examine the microbiological profile of dental plaque from a patient's periodontal pockets. However, I'm an exception because of my microbiology background. Most periodontal specialists are unfamiliar

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with and don't use a phase-contrast microscope in their clinical practices. A phase-contrast microscope is an excellent tool to educate and motivate patients about the infectious nature of their periodontal disease. Untreated periodontal-disease patients will be full of highly active germ life in their dental plaque that is visible with a phase-contrast microscope.

In addition, we have today the ability to do sophisticated microbiological culturing and antibiotic sensitivity testing to more comprehensively analyze a patient's periodontal infection and select the best antibiotic to potentially use in treatment. A phase-contrast microscope can't give you that information. There are four licensed labs that can do this type of periodontal microbiology analysis in the United States, and I serve as the director of one located at Temple University School of Dentistry.

Post: Many people have bridges, implants, and crowns. Can they still use these same preventive methods?

Dr. Rams: Yes, oral irrigators in particular are extraordinarily valuable for people who have fixed bridges, because you can't get toothbrushes and floss around bridges very well.

Post: Using these preventive measures, can one reverse the disease process?

Dr. Rams: These measures are ideally used as prevention against onset of disease, but they're also used in treating people suffering with periodontal disease. If it's a simple case of gingivitis, which is less destructive, intensive home disinfection can generally reverse most of the disease process and restore healthy periodontal tissues. With more severe periodontal breakdown, home oral hygiene procedures alone are not good enough—you also need professional therapy performed in a dental office involving nonsurgical, and sometimes surgical, treatment procedures.

Post: Are interdental brushes helpful in cleaning between teeth?

Dr. Rams: Yes. But, if a person has good periodontal health and no periodontal disease, interdental brushes usually don't fit between teeth because the gum tissues are still pristine and there is not enough space. But in patients who have severe periodontal disease, interdental brushes

usually readily fit between teeth and can substitute entirely for dental floss. For older periodontal-diseased patients who have difficulties with manual dexterity, interdental brushes are quite useful.

Post: How is one supposed to brush their teeth—up and down, side to side?

Dr. Rams: Toothbrush techniques are not that critical. They all work to some extent. The most common is the Bass technique, where you direct the bristles toward the tooth-gum line interface and do a kind of elliptical pattern with the brush, as opposed to just pure back and forth or up and down movement. The idea is for the bristles to be directed near this interface between the tooth and gum tissue—the prime area where the periodontal disease infection takes hold. The reason we know different techniques work is that electric toothbrushes offer many different patterns of brush bristle rotation and movement, yet they are all successful in disrupting dental plaque and are FDA approved.

Post: What is the role of fluoride?

Dr. Rams: Fluoride's benefit is primarily in prevention of tooth decay, rather than periodontal disease. Fluoridated toothpaste is extremely useful and very effective in helping control dental decay, which is still quite prevalent in the American population. Tooth decay is caused by a different type of bacteria than in periodontal infections, and is highly influenced by consumption of sugar in the diet. People who eat a lot of high sugar-containing foods or drink high-sugar drinks can get an overgrowth of the decay-causing bacteria and develop tooth decay, particularly if they're not using a fluoride toothpaste.

Post: Is sugar consumption particularly problematic for dental health?

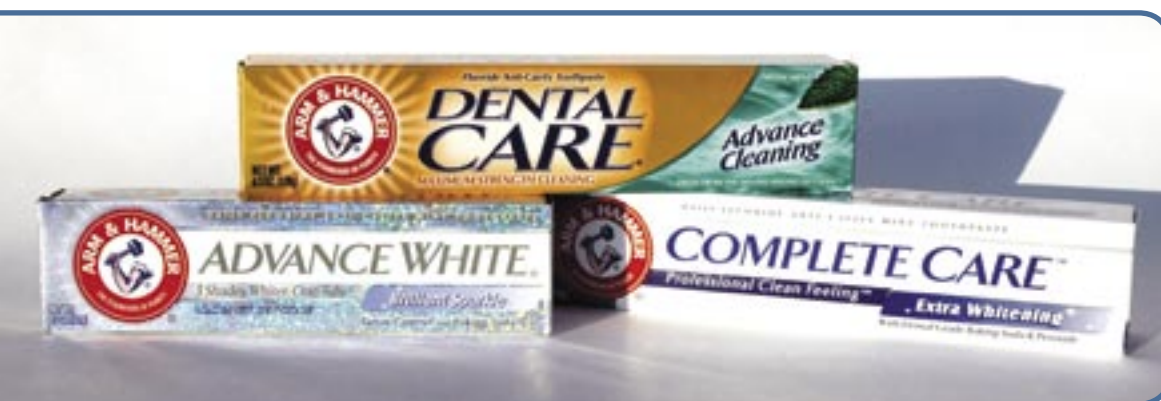
Dr. Rams: Relative to tooth decay, what really counts is how long the sugar stays in the mouth. If you consume a lot of sugar, but then brush your teeth to keep the oral sugar exposure time relatively short, then you markedly reduce the risk of tooth decay.

On the other hand, consuming a small amount of sugar, such as in hard candy over a long time, is the worst-case scenario because the sugar

is kept in the mouth for a long time. People who suck on hard candies all day long have a high sugar-exposure in the oral cavity for many hours and hours—it results in a horrendous tooth decay problem.

Post: What preventive regimen do you recommend to patients?

Dr. Rams: To prevent periodontal disease, it's a two-pronged approach: one, go after the dental plaque bacteria on tooth surfaces with intensive home tooth brushing, flossing and oral irrigation; and two, maintain healthy host resistance by eating a well-balanced, highly nutritional diet, exercising, not smoking, and reducing stress. Persons with poor oral hygiene who smoke, are overweight, deficient in vitamin C, and under excessive emotional and physical stress and distress are far more vulnerable to severe periodontal diseases and tooth loss. It is also essential to periodically undergo a thorough periodontal examination and diagnosis by a competent dental professional. It's a terrific public service to promote good periodontal health, because that will in turn help with good general health and promote a longer life span.



Today, consumers can choose from a wide variety of toothpastes that use baking soda as a primary cleaning agent to help keep the gums and teeth in a healthy state.