

Source: Journal of Dental Hygiene, Vol. 80, No. 1, January 2006

Copyright by the American Dental Hygienists' Association

Upfront

Katie Barge

Katie S. Barge is staff editor of the Journal of Dental Hygiene and staff writer for Access

Periodontal Disease may be the Heart of Cardiovascular Problems

Brushing, flossing and regular dental checkups may help keep the heart healthy, reported experts in *Circulation*, the journal of the American Heart Association.

"People who have chronic infections-and gum disease is one of the major chronic infections-are at increased risk later in life for atherosclerosis [hardening of the arteries] and coronary heart disease," said Dr. Richard Stein, American Heart Association spokesman and director of preventive cardiology at Beth Israel Medical Center in New York City.

Why? Chronic periodontal disease, a persistent bacterial infection affecting the gums and bone supporting the teeth, sets off an inflammatory process that aggravates and contributes to the build-up of cholesterol-rich plaque on artery walls.

"What you are really talking about here is an inflammatory process. The body is an amazing machine that handles chronic inflammation, whether it is in the mouth or in the heart, in a similar manner," said JoAnn Gurenlian, RDH, PhD.

"Literature suggests that during periodontal inflammation, pathogens enter systemic tissue, invade the heart and coronary artery cells, induce platelet aggregation, and can cause thrombus formation. Therefore, the two diseases [periodontal diseases and cardiovascular disease] share common risks and etiologies," said Gurenlian.

According to Gurenlian, the infection that causes periodontal disease and sets up an inflammatory response leads to an increase in cellular mediators. One such mediator, C-reactive protein (CRP), is produced by the liver during periods of inflammation and causes inflammation of the arteries.

"Elevation of CRP damages the smooth muscles of the blood vessels, which can precipitate a cardiovascular event. When CRP is produced, the arterial walls that have cholesterol plaques deposited become unstable and some may rupture. If they do rupture, a clot can form leading to stroke or myocardial infarction," said Gurenlian.

Experts have known about the periodontal-cardiovascular link for about ten years, according to Stein. "It's become a bigger problem in general because we're having fewer cavities due to fluoride and we're living longer," said Stein. "So, more and more, what's making us lose our teeth is periodontal disease."

Fortunately, periodontal disease is preventable. Like exercising and eating healthy, Dr. Stein advises his patients who are worried about their risk for heart attack to incorporate good periodontal care into their everyday preventative strategy.

Gurenlian recommends that those who are at risk use a toothpaste with both antibacterial and anti-inflammatory properties. "The best and most simple things we can do it take care of our oral health. The goal is to reduce infection and inflammation as much as possible."

One lucky group of adults-those with dentures-do not have to worry about periodontal troubles. "In order to have an infection of your gums, you need to have teeth," said Stein.

"Taking care of your teeth is part of general good health and quality of life, and it may also have a protective role for your heart," said Stein.

Acetaminophen is Leading Cause of Acute Liver Failure

Liver toxicity from Acetaminophen poisoning is the number one cause of acute liver failure in the United States, according to researchers reporting in the December issue of *Hepatology*.

Most at risk are acetaminophen users with depression, chronic pain, alcohol/narcotic use, as well as those who take multiple acetaminophen-containing products at the same time, wrote the researchers.

"Education of patients, physicians, and pharmacists to limit high-risk [acetaminophen] use settings is recommended," wrote Anne M. Larson, MD, of the University of Washington, and colleagues at 21 other US Centers.

There is, however, no need to panic, because acetaminophen-associated liver toxicity is rare, and the drug itself is not toxic, wrote John G. O'Grady, MD, of the Institute of Liver Studies at King's College Hospital in London, in an accompanying editorial.

Rather than boycotting acetaminophen-containing products all together, O'Grady, like Larson and her colleagues, recommended an increase in education. "Education initiatives to highlight the range of preparations containing acetaminophen, together with reiteration of advice on maximum daily dosing, have potential benefits, especially with respect to unintentional overdosing."

Acetaminophen, the active ingredient in Tylenol and a variety of other pain killers is widely available in over-the-counter preparations for headaches, colds, allergies, osteoarthritis, and several other conditions.

Consistent use of as little as 7.5 grams of acetaminophen a day could lead to severe hepatic injury, wrote Dr. Larson and her colleagues. Be it intentional or accidental, consuming more than the package-recommended four grams per day is considered acetaminophen overdose, which has been associated with severe hepatic necrosis leading to acute liver failure.

Although some people deliberately take toxic doses of acetaminophen in an attempt to commit suicide, others have unintentionally accumulated high, toxic levels of acetaminophen when taking, for example, Tylenol for a headache and a second acetaminophen-containing product for cold symptoms.

According to the study's authors, *N*-acetylcysteine administered within 12 hours of ingestion of acetaminophen can prevent liver injury; however, many people are unaware of this course of action.

Both Larson et al and O'Grady suggest that a strategy restricting but not banning over-the-counter sales of medications containing acetaminophen may be necessary to prevent accidental overdose.

A similar approach in the United Kingdom led to a 30% reduction in patients with severe acetaminophen-induced acute liver failure after just four years.

Women, Protect Against Heart Disease and Osteoporosis BEFORE Menopause

Stress and fluctuating hormone levels can cause problems for women long before menopause, suggests a new study. Traditionally, it has been thought that a woman is protected from heart disease and osteoporosis until she goes through menopause. However, new research with monkeys questions that belief and suggests that the time for women to start protecting their heart and bones is during perimenopause, or preferably, even earlier.

"Most women think they don't have to worry much about chronic health problems until perimenopause or menopause," said Jay Kaplan, head of the section of comparative medicine at Wake Forest University School of Medicine. "But there's a high-risk trajectory that women can get on in their reproductive years that sets the stage for later problems."

During perimenopause, aka premenopause, which can start as early as age 35, a woman's body starts making less of the hormones estrogen and progesterone. In previous monkey studies, Kaplan found that stress reduced estrogen levels and initiated the buildup of plaque in the blood vessels.

According to Kaplan, the quality of ovarian function-the way in which the body produces estrogen and progesterone- in the premenopausal period can contribute to a woman's health status later in life. "Ovarian function varies quite a bit during the premenopausal years. And it turns out that reproductive function in both women and monkeys is easily impaired by stress," said Kaplan.

Many women never realize their ovarian function is impaired because they continue to cycle normally, said Kaplan. Unfortunately, this means that women are unknowingly being exposed to varying levels of estrogen, which can have a negative effect on both heart and bone health.

"The reality is a lot of heart health begins before menopause," said Dr. Steven Goldstein, an obstetrician/gynecologist at New York University Medical Center. "Perimenopause is an excellent opportunity to begin a self-assessment and medical report card. Develop a plan with your doctor for your overall health, diet and lifestyle for the second half of your life."

Until more research has been completed on the effects of premenopausal estrogen therapy, Kaplan recommends that women try to reduce stress wherever possible.

"Stress does matter. In fact, it matters in ways that women probably don't recognize. Try to learn new coping skills for stress, and extend your social networks," advised Kaplan.