



Article 10*

The Non-Medicated Life: The Benefits of Stress Reduction

by Paul E. Lemanski, MD, MS, FACP

*Originally published in Adirondack Sports & Fitness Magazine (www.ADKSportsFitness.com)

This is the tenth in a series on optimal diet and lifestyle to help prevent disease and responsibly avoid an over reliance on medications. This complementary approach is based in the medical evidence of the most successful research trials and the best science available. Any planned change in diet, exercise or treatment should be discussed with and approved by your personal physician before implementation. Consultation with a registered dietitian is strongly advised.

Medicines are a mainstay of American life and the health care system not only because they are perceived to work by the individual taking them, but also because they can be shown to work by the objective assessment of scientific study. Clinical research trials have shown that some of the medicines of Western science may reduce heart attacks strokes and cardiovascular death. It is not always appreciated that informed diet and lifestyle may accomplish many, if not most of the benefits of medication. While sometimes difficult to measure, there is growing evidence that stress reduction reduces heart attacks and cardiovascular deaths and may even decrease disease incidence and progression, thereby scientifically establishing the healing link between the psyche and the heart.

Emotional stress is a part of daily life for most people and may be categorized as either acute or chronic. The body responds to emotional stress in much the same way it responds to a physical danger or threat - by the release of certain hormones that better prepare us to respond to the threat. Thus, the immediate threat of physical harm causes the release of 'fight or flight' hormones which increase blood flow to our large muscles, increase our heart rate, respirations and blood pressure, and decreases blood flow to the gastrointestinal tract including the saliva glands. Such a release of fight or flight hormones acutely may increase the risk of a heart attack in individuals who already have

heart disease. Acute mental stress can cause blood vessel constriction in heart arteries and may alter coagulation to make blood more able to clot.

Additionally, the acutely increased heart rate and blood pressure may cause disruption or cracking of a cholesterol plaque in the artery wall with a resultant superimposed blood clot which blocks the flow of blood downstream from the disrupted plaque (see *The Non-Medicated Life: A New Laboratory Test to Assess Heart Attack Risk*, August 2003). The observed increase in heart attack death in populations during hurricanes and earthquakes supports this mechanism.

While potentially lifesaving in the acute setting, fight or flight hormones may become detrimental to health when chronically stimulated or stimulated repeatedly unnecessarily. Becoming stuck in traffic or behind a slow moving driver is not usually life threatening, yet for many of us may elicit anger and a release of the fight or flight hormones. Indeed, anger and hostility may be linked to a higher incidence of coronary heart disease, heart attacks and total mortality.

Anger and hostility have been shown in some studies to be independent risk factors for the development of coronary artery disease. In one seven-year study, the relative risk for cardiac events for men with the greatest levels of anger

(continued on back)



CENTER FOR
PREVENTIVE MEDICINE
Prime Care Physicians, PLLC 

was 2.6 times the risk for men with the lowest levels of anger. In the Western Electric study, baseline hostility scores were predictive of coronary events over a ten-year period and in another study anger was significantly associated with coronary disease mortality in men with already established heart disease and with the incidence of re-stenosis after angioplasty.

Chronic stress may also influence blood pressure which when elevated may increase cardiovascular risk and when controlled will decrease cardiovascular risk. In 'essential' hypertension, which is the most common type of hypertension, blood pressure is elevated because of genetic factors often combined with unhealthy dietary and lifestyle practices. In a sense, essential hypertension is a resetting of the body's blood pressure set point to a higher, less healthful level. Individuals with essential hypertension have an elevation of their blood pressure even during sleep.

However, in a condition called 'labile' hypertension blood pressure may be elevated only in stressful circumstances and normal at other times. Until recently, labile hypertension was not felt to be as much of a concern as long as the pressure was shown to come back into the normal range. It is now recognized that even labile hypertension caused by stress may be serious depending on the amount of time one spends in a stressful setting. For example, spending eight to ten hours a day in a stressful job during which pressure is elevated may actually cause measurable detrimental changes in the heart similar to what is seen in uncontrolled essential hypertension.

The heart is a muscle and like any muscle it gets bigger when it works harder. When the heart muscle has to pump blood against the resistance of a high resting blood pressure, the wall of the main pumping chamber gets thicker and this can increase the risk of sudden death. If such heart muscle thickening is present in an individual with labile hypertension a blood pressure lowering medication needs to be considered even if the pressure comes down to normal in relaxed settings. Additionally, the stress underlying labile

hypertension needs to be equally addressed.

Stress reduction and relaxation techniques have been shown to lower blood pressure and in some studies have been shown to decrease the frequency of angina or exertional chest pain in individuals with existing heart disease, as well as decrease fatal and non-fatal heart attacks. Indeed, cardiac rehabilitation programs typically include stress management and relaxation training in their curriculum. Such programs encourage the participant to become aware of social and environmental stressors and develop new skills and strategies for dealing with stress, as well as improve the participant's awareness and use of social support to reduce stress.

Additionally, a number of relaxation techniques have shown promise in reducing blood pressure and even when used alone relaxation techniques have been shown to decrease fatal and non-fatal heart attack and improve heart function. Techniques that have been shown to reduce stress include aerobic exercise, prudent resistance training, progressive muscle relaxation, diaphragmatic breathing, focused attention, as well as the practice of transcendental meditation, yoga and tai chi.

In summary, there is growing evidence of the healing link between the psyche and the heart. Emotional stress, anger and hostility have been linked to increase risk for labile hypertension, coronary heart disease, heart attacks and total mortality. Stress reduction using a variety of techniques has been shown capable of reducing blood pressure, and the risk of fatal and non-fatal heart attacks. As such, stress reduction may be viewed as a prudent and viable non-medicated alternative to the proverbial bottle of pills to treat one of our most important health care problems.

Paul E. Lemanski, MD, MS, FACP is a board certified internist with a master's degree in human nutrition. He is director of the Center for Preventive Medicine, Albany Associates in Cardiology, Prime Care Physicians, P.C.

Dr. Lemanski is an assistant clinical professor of medicine at Albany Medical College and a fellow of the American College of Physicians. Medical College.