HEALTH AND STRESS

The Newsletter of
The American Institute of Stress

FEBRUARY 2001

MEDICAL MYTHS, MYSTERIES AND MISCONCEPTIONS

KEYWORDS: Alcohol, hypertension, salt restriction, beta blockers, LDL, CRP (C reactive protein), statin drugs, chlamydia, homocysteine, exercise, depression, anxiety, hostility, ginseng, Ginkgo biloba, fiber supplements.

The impetus for this Newsletter came from our recent Eleventh International Congress on Stress in Hawaii. I had asked Dr. Ray Rosenman to give an after dinner talk dealing with popular misconceptions and myths about cardiovascular disease and Dr. Vera Price to provide a similar presentation dealing with common hair and dermatologic delusions. At our previous Montreux Congresses, these were usually 20-minute informal presentations designed to appeal to Registrants, their spouses and others.

Unfortunately, we could not corral everybody at the same time because of different dining arrangements and schedules at our new venue. The only alternative was to somehow fit all of the five planned after dinner talks into the already saturated scientific sessions.

ALSO INCLUDED IN THIS ISSUE

I was unaware that Dr. Rosenman had prepared a 45-minute presentation for which only 20 minutes had been allowed. As a result, more than half of his fascinating discussion had to be discarded. While we will be reporting on this Congress in a future Newsletter, I asked Ray to provide an outline of his talk so that his thoughts could be included in this issue. What I received was so stimulating that it seemed like a good idea to paraphrase his views along with some commentary, and add examples of other common medical misconceptions. In preparing this, I was reminded of the following observations:

"Nothing is easier than self-deceit. For what each man wishes, that he also believes to be true."

Demosthenes

"There is something fascinating about science. One gets such wholesome returns of conjectures out of such trifling investments of fact"

Mark Twain

"The great tragedy of Science is the slaying of a beautiful hypothesis by an ugly fact."

Thomas Henry Huxley

I also remembered the Dean of Harvard Medical School's warning a few decades ago to the graduating class: ***"Half***

of what you are taught as medical students will in ten years have been shown to be wrong, and the trouble is that none of your teachers knows which half."

Sidney Burwell

The Paradox Of The J-Shaped Curve

Dr. Rosenman started out by complaining that I had only given him "two hours" to cover the multitude of cardiovascular and related health misconceptions and myths. He began with the common belief in "*the lower the better*" and the importance of the J-shaped curve.

For example, we all know that being overweight contributes to hypertension, heart attacks and premature death. Therefore many people have come to the conclusion that being underweight is good and will help you live longer. **Wrong!** Mortality rates follow a J-shaped curve so that lowering your weight is associated with a steady decline in mortality. However, after a certain level it starts to rise again so that a diagram of this relationship would look like the mirror image of a J. Death rates are higher at either end of the scale.

This also applies to patients with elevated blood pressures who are told to lose weight to reduce the strain on their cardiovascular system. If you are obese, losing weight can help lower blood pressure. However, lean hypertensives actually have higher death rates compared to others whose weight is average. The reason for this particular J-shaped mortality curve is not clear.

Since hypertension is a significant health hazard, many believe that the lower your blood pressure is the healthier you would be. In point of fact, authorities once proposed guidelines to lower systolic pressure under 100 and diastolic pressure below 70, and some even treated patients with high normal values. Such recommendations were discarded after several large clinical trials showed progressively higher death rates due to cardiovascular disease in patients whose diastolic pressure had been reduced to under 80.

This was particularly disturbing since we had all been taught that an elevated diastolic blood pressure was the real villain. A high systolic pressure was simply a reflection of the hardening of the arteries that occurred due to aging in everyone. The general rule was that normal systolic pressure was 100 plus your age. We now recognize that isolated high systolic pressures can also be dangerous and may actually predict cardiovascular complications better than diastolic measurements.

Alcohol related mortality rates follow a similar pattern. Heavy boozers die at younger ages so teetotalers should live longer. **Wrong again!** It's the same old J-shaped curve. **Both boozers and those who abstain have higher death rates than normal, and moderate drinkers have the lowest** in studies conducted in 25 countries. This consistent finding has been a great disappointment to prohibitionists and nay sayers whose recipe for staying healthy is "Don't eat this and don't do that".

The first explanation was that alcohol boosts "good" HDL cholesterol but this is more of an associated finding than a causative influence. Any kind of alcohol in moderation seemed to provide rewards but then there was a flurry of "French Paradox" publicity. Despite high saturated fat intake, especially in the Lyon section of France, heart attacks were rare and many locals lived well into their nineties. This was attributed to liberal intake of red wine rich in antioxidants and white wine makers quickly claimed similar benefits. **Although it was the amount of wine consumed that proved most important, an excess is obviously harmful.**

Beer, Blood Pressure, Salt And Calcium

While wine may be good, reports from all over now suggest that beer may be better. Oregon chemists found that beer hops contain an antioxidant that's much more powerful than any found in red wine, green tea, citrus fruits, or tofu. At the recent International Chemical Congress in Hawaii, a UCLA graduate student and her Canadian chemist father reported that dark beer is "chock full of antioxidants" that "reduce aging and slow down age-related problems with heart disease." Their research, funded partly by Labatt Brewing Company, was originally designed to determine if these antioxidants could slow

down cataract formation, especially in diabetics. They found that the lenses of rats and cows normally damaged by high glucose levels were protected by dark beer's antioxidants, which appear to be particularly effective in neutralizing the free radicals that attack cell membranes and proteins in the lens. However, Pennsylvania researchers reported that light beer could also reduce heart disease in laboratory animals and might even be superior. They fed hamsters a very high-cholesterol, high-fat diet until they developed atherosclerosis. In a controlled experiment, they then repeated this and added the human equivalent of a large glass daily of either light or dark beer. The light beer won, with a 50 percent reduction in fatty deposits.

"Shaken not stirred" was how James Bond wanted his martinis and researchers wondered if he was on to something, since he was in superb health and didn't have either cataracts or heart disease. As they reported in the prestigious *British Medical Journal*, bioanalytic tests showed that shaking a martini released more antioxidants than stirring.

Why, where and how you drink may also be important. A dehydrogenase-3 gene that increases HDL regulates ethanol metabolism, and slow metabolizers may receive more benefits. **The bottom line is that a daily drink or two of any alcoholic beverage is healthy, especially if you take your time.** More than five or six could cause problems. Those rich in cardio-protective antioxidants (beer, wine, scotch) may have some additional advantages.

Salt is also much maligned. Many believe that everyone should sharply restrict their salt intake regardless of age, sex, or physical activity. Hypertensives are routinely told to avoid salt and to follow a low sodium diet and if that fails, diuretics are prescribed to increase sodium excretion. Despite numerous scientific articles demonstrating the futility and dangers of this routine, only recently has there been some return to sanity.

We now know that only a third of hypertensives are salt-sensitive and that normal kidneys have an infinite ability to excrete dietary sodium. Patients who are salt sensitive do benefit from restricting sodium but when diuretics are added to a strict low sodium diet you are looking for trouble. When sodium levels drop too low powerful conservation mechanisms are automatically invoked in an attempt to maintain homeostasis. The resultant increase in sympathetic nervous stimulation and secretion of catecholamines contributes to hardening of the aorta and other blood vessels and left ventricular hypertrophy. This might explain the higher mortality rates of both underweight and overweight patients with left ventricular hypertrophy.

Some studies show that elevated blood pressures return to normal when supplemental calcium is given suggesting that some hypertensives may require more calcium. The major sources of dietary calcium are found in dairy products like milk and cheese that are sharply restricted in low salt diets because of their high sodium content. Consequently, **hypertensive patients who need more calcium often get worse when they follow a strict low sodium diet**, which can be frustrating. Calcium supplementation can produce dramatic results in such instances. In other patients, supplementing magnesium rather than restricting salt results in better control.

Hypertensives are frequently overtreated, which can also boomerang. Significant sodium depletion can lower blood volume and cause catecholamine releases that make blood pressures soar. Doctors who blame this on "stress" may prescribe even more diuretics and medications that often worsen the problem.

MVP, Stress And Anxiety Disorders

Significant salt depletion can also cause problems in healthy people, including cold fingers and feet, low blood pressure, skipped beats, and can lead to MVP. MVP, which here refers to mitral valve prolapse rather than Most Valuable Player, is one of the most common cardiac disorders and has a fascinating history. Over the past 150 years it has been known as "soldier's heart", "effort" or "DaCosta's" syndrome and neurocirculatory asthenia. MVP was mistakenly assumed to be a "functional" disorder since there was no detectable pathology to explain the varied symptoms of

vague chest distress, palpitations, dizziness, fatigue, exhaustion, shortness of breath on exertion and certain vasomotor phenomena.

This was originally of interest mainly to the military and it was not until 1968 that the true nature of the disorder was delineated due to Barlow's investigations and improvements in echocardiographic imaging. These made it possible to visualize the mitral valve leaflets and the degree of their uneven closure. MVP then began to be called Barlow's syndrome, billowing mitral valve syndrome, ballooned valve syndrome and systolic click murmur syndrome. Unfortunately, mitral valve "prolapse" became the accepted term to describe this disorder. **In retrospect, "floppy mitral valve" would probably have been a more accurate description** of this condition.

The mitral valve controls the flow of blood from the left atrium to the left ventricle and in MVP does not close evenly with each ventricular contraction. This may be due to one or both of the two flaps of the valve being too large or a weakening of the muscles and structures that pull on them. This uneven closure of the valve gives rise to the systolic click that was recognized by early investigators, especially when patients laid on their left side, but was thought not to emanate from the heart. It is important to recognize that even perfectly normal mitral valves can prolapse into the left atrium when left ventricular volume is reduced due to lowered blood volume. This results from rigorous and of ten inappropriate sodium restriction and can be readily rectified by salt repletion.

MVP is found more frequently in females under 40 (including about half of all ballet dancers), and is not uncommon in professional basketball players. Mitral valve prolapse is a structural defect that is often a normal variant in thin, tall people with small chests, straight backs or whose arm span exceeds their height. Although there is often a family history, no specific gene has yet been identified.

MVP and anxiety are clearly quite independent disorders, although some symptoms such as palpitations and chest distress can be common to both. However, it is remarkable and also regrettable how frequently unnecessary echocardiograms, stress tests, and Holter monitoring are done in healthy young women with MVP. Excess noradrenergic activity in anxiety disorders increases cardiac contractility and vaso-constriction, and lowers blood volume. This combination can eventually result in functional anatomic leaflet prolapse. **Mitral valve prolapse in otherwise healthy young individuals is not a life threatening disorder and usually requires no treatment other than reassurance and liberal salt intake** to correct hypovolemia. Numerous consultations with specialists and sophisticated studies that show no evidence of significant cardiovascular problems might satisfy some patients. For others, they are equally apt to increase their stress and constant fear or contribute to a cardiac neurosis that can be difficult to overcome.

For example, MVP patients used to be warned that they required antibiotics before any dental procedure to prevent potentially fatal subacute bacterial endocarditis, which was pretty scary. This recommendation was discontinued in 1997 and only MVP with valvular regurgitation is currently considered to be an indication for prophylactic antibiotics. Most people with MVP syndrome have mitral valve floppiness caused by autonomic nervous system abnormalities rather than any structural deformity and the majority has few if any symptoms or health problems. Echocardiograms may be normal if patients are in the horizontal position so that the disorder is often missed, even in patients with the typical mid-systolic click.

Researchers have documented increased activity of the sympathetic nervous system and exaggerated responses to adrenergic, pain and pressure stimuli in MVP syndrome, as well as impaired regulation of blood pressure and plasma volume. Why symptoms seem to be more severe and frequent in young females is unclear but could be related to hormonal fluctuations during the menstrual cycle. Migraine, irritable bowel syndrome, fibromyalgia, hyperthyroidism and sleep disorders also seem to be more common in this group.

Feelings of severe fatigue are frequent, especially following unusual physical activity, an illness, or stressful situation. Exercise intolerance is quite likely related to reduced plasma volume and poor

conditioning since chest pain and palpitations may limit significant exertion. In other instances **fatigue can come on suddenly for no apparent reason and cause complete exhaustion**. Low blood pressure, especially when standing up, and labile hypertension can also contribute to complaints of dizziness and weakness.

Regular exercise has long been known to help improve the capacity for physical exertion in MVP patients, and also seems to reduce disturbing symptoms due to autonomic nervous system dysfunction. **Liberal sodium supplementation can provide dramatic benefits**, especially since these individuals tend to be very health-conscious and often restrict their salt intake. Beta blockers may help improve fatigue and other symptoms but should be used cautiously in low doses. Significant sensitivity to these drugs is common and normal amounts can cause or worsen fatigue.

Regular reassurance by a knowledgeable and sympathetic physician who can explain why symptoms occur and minimize their significance can be crucial. Feelings of anxiety are often due to fears that symptoms will recur. The ability to allay apprehension can remarkably improve quality of life, especially in MVP patients mislabeled as having psychiatric problems. Periodic observation is advisable since 10 percent of patients, mostly men, will experience valvular problems two or three decades after the initial onset of symptoms.

Cholesterol Confusion And Craziness

We have addressed this topic numerous times in previous Newsletters and Dr. Rosenman expanded on several prevalent cholesterol myths and misconceptions. One of the most common and erroneous is the notion that high cholesterol is the cause of coronary artery disease and that consequently, the lower your cholesterol the longer you will live and the healthier you will be. **Wrong!** Many studies have found that people whose cholesterol is under 170 on a normal diet actually have higher mortality rates. This may be related to an increased incidence of depression and violent behaviors, including suicide. There is some evidence that lowering LDL (bad cholesterol) may decrease serotonin, which contributes to depression and newer antidepressant drugs like Prozac and Zoloft work by boosting serotonin levels. In some cholesterol lowering drug trials there has also been a significantly increased mortality due to malignancy and hemorrhagic stroke when LDL levels were lowered. For some reason, the depression and violent behavior seen with naturally occurring low total and LDL cholesterol does not occur when these are achieved through stringent diets or the new statin drugs.

There is little doubt that statins can help prevent heart attacks but it is widely assumed this is because they lower total and "bad" LDL cholesterol. **Wrong Again!** The striking speed with which coronary events decreased in clinical trials is far too fast to be due to regression of atherosclerosis. We now recognize that these drugs can have potent antioxidative and antiproliferative effects and reduce inflammation. **The reduction in heart attacks is due to the ability of statins to stabilize plaques and improve endothelial function rather than any lowering of LDL or total cholesterol.**

Statins reduce C-reactive protein (CRP) levels. **This index of inflammation appears to predict heart attacks better than cholesterol.** Statins also bolster immune system defenses that reduce inflammation and may be of benefit in other disorders. **In one recent report, taking statins reduced the development of dementia by a whopping 70 percent.**

Is Atherosclerosis Due To Inflammation?

What a preposterous proposition! Everybody knows that atherosclerosis and heart attacks are due to cholesterol deposits that dog up arteries. It is also commonly believed that this killer comes from consuming fatty foods and can be countered by avoiding red meat, drinking red wine and substituting margarine for butter. That's what the cholesterol cartel of manufacturers of low fat foods, cholesterol lowering drugs and others would like you to believe so they can continue to reap huge profits from the paranoia they perpetuate.

While a high LDL is associated with a greater incidence of coronary heart disease it does not result from an increased intake of fat. LDL is synthesized by liver cells that release it into the circulation attached to a protein but these same cells also have surface receptors that can extract LDL from the blood stream. LDL levels are determined primarily by the number of these removal receptors and this is inherited. Food has minimal influence and **normal people can consume huge amounts of cholesterol and saturated fats without causing any appreciable rise in LDL**. Conversely, strict and prolonged restriction results in only a slight fall. Even the NIH now concedes that drugs are required to achieve any significant reduction in total or LDL cholesterol.

As indicated, **statin drugs lower LDL but this is not why they help prevent heart attacks**. Atherosclerotic plaques cause problems not due to progression in size but rather their tendency to crack and contribute to thrombosis. This is more apt to occur if they have a soft lipid core that facilitates fissure formation. Statins stabilize plaques by depleting soft foam substrates and this best explains why they are effective in reducing coronary events.

Similarly, we give antioxidants to deter LDL entry into the intimal lining of blood vessels, aspirin and anticoagulants to prevent thrombosis and beta blockers to inhibit plaque disruption. All of the above have been demonstrated to reduce the incidence of coronary morbidity and mortality in clinical trials. However, strategies designed to reduce inflammation may be equally important.

Cholesterol is a large inert molecule and the atherosclerotic deposits achieved in experimental animals by force feeding high fat diets for months bear little resemblance to the inflammatory plaque lesions seen in humans. These reveal foam cells and other changes that are reminiscent of what one finds following an infection. There is mounting evidence that this is much more than a coincidence.

As explained in previous Newsletters, studies suggest that indolent and seemingly innocuous infections with chlamydia and other microorganisms can cause obstructive atherosclerotic plaque. Chlamydia has been cultured from such lesions and some preliminary studies suggest that antibiotics may prevent this from happening. **The epidemic of heart attacks seen after World War II started to decline in the 60's, long before vigorous reduction of cholesterol, cigarette smoking and hypertension or exercising became popular. This is the same pattern one sees in infectious epidemics** that peak as they spread through susceptible populations and then taper off as resistance develops. **The decline in heart attacks also coincided with the advent and widespread use of broad spectrum antibiotics. Studies now show that flu shots seem to reduce the incidence of coronary events.**

CRP may be better than lipid levels for predicting a heart attack and should be measured in all patients with evidence of coronary disease. The liver produces CRP in response to inflammation or injury and when these are absent, elevated levels most likely reflect some chronic inflammatory process.

Homocysteine, a naturally occurring amino acid, is also believed to be more important than cholesterol for predicting and preventing heart attacks. Increased levels are found in 20% to 40% of acute heart attack and stroke patients and the highest rates are in those with premature atherosclerosis who have no high cholesterol or any other traditional risk factors. Possible mechanisms of action include generation of free radicals, stimulating LDL oxidation, and endothelial cell injury. It seems to act like sandpaper on the inner lining of arterial walls.

Cardiovascular Misconceptions And Myths

Dr. Rosenman noted that since lack of exercise is a risk factor for heart attacks, obesity and possibly some malignancies, the more you exercise the better you will be. "No pain no gain." **Wrong!** From a cardiovascular perspective, 25 minutes of proper exercise three times weekly is about optimal for aerobic fitness. More vigorous exercise may improve endurance but will not provide any significant additional cardiac benefits and could increase the likelihood of bone and joint problems.

As usual, his presentation was peppered with humorous comments, including: "The advantage of daily exercise is that you die healthier." "You add one minute to your life for every mile jogged - which, at age 95, enables you to spend an additional five months in a nursing home at $5,000 per month." "My grandmother started walking five miles a day when she was 60. She's now 97 and we don't know where she is."

Herbal remedies can be good for your heart. **Wrong again!** Herbals are under attack for good reason, considering side and even fatal toxic effects. This $14 billion per year industry has powerful Congressional friends who have successfully blocked any FDA efforts to insure efficacy and safety. Controlled scientific studies negate most claims and independent investigations have found that some are actually health hazards. **Ginseng is one of the most popular herbals but 8 out of 21 brands were found to have high levels of pesticides and lead.** Only one in four bottles of Ginkgo biloba may contain the amount of active ingredients listed on the label. The "Natural Medicines Comprehensive Data Base" found that only **46 of 964 natural supplements were effective for advertised purposes and only 15% had been proven safe**. From the cardiovascular standpoint, **many interfere with blood clotting, digoxin, and other drugs** taken by patients with cardiac problems.

How carefully do you read labels on grocery shelf items? What is non-fat, low-fat, lean, extra-lean, light, reduced, high, good source or what is meant by "less"? And try to figure out how many mg. of salt or fat calories are in an "average" serving. Ray's advice was to "Bring a calculator and good luck."

He did not have enough time to discuss all the misconceptions about stress and heart disease, promising "That's for next year. But I will quote the anonymous person who responded to the question about when do you feel stress by saying - 'There are only two times that I feel stress - day and night'."

Is depression a risk factor for heart attacks? Studies suggest that it can predict some coronary events but the data are not consistent. There is some recent evidence that depression may predispose to secondary or recurrent events as opposed to an antecedent influence, and the same holds true for anxiety disorders. Anxiety and/or "stress" have long been known to precipitate anginal episodes in patients with existing ischemic disease and can aggravate congestive failure. Sudden, severe stress has also been incriminated in sudden death due to disturbed heart rhythms, but there is no good evidence that it causes coronary disease.

Dr. Rosenman did not get into Type A, which has been well established as a major risk factor for coronary heart disease, but noted that **the much hyped "hostility" hypothesis has fallen apart**. After the original two reports that used the MMPI's Ho Scale on which this was based, none of some dozen subsequent studies confirmed any relationship with coronary artery disease. It is of interest that a study of 2500 consecutive angiograms by this same group confirmed a highly significant relationship between Type A behavior and coronary heart disease but not hostility. (They now concede that the Ho Scale really doesn't measure hostility.) A recent *New England Journal of Medicine* review found no correlation between hostility, depression or anxiety with coronary disease.

We will include some additional debunkings by Dr. Rosenman and other speakers in a subsequent Newsletter. My prime purpose in this issue was to attempt to convey his views on the lack of any significant relationship between diet, cholesterol, atherosclerosis and coronary disease. These have been confirmed by other authorities, as will be vividly illustrated in the next section.

BOOK REVIEW:

The Cholesterol Myths: Exposing The Fallacy That Saturated Fat And Cholesterol Cause Heart Disease.

Uffe Ravnskov, MD, PhD
New Trends Publishing, Inc.
Washington, 2000, 297 pp., $20.00
(For updated information go to http://home.swipnet.se/~w-25775)

This meaty offering more than lives up to the promise of its title. It is a scholarly exposé of what one leading authority calls "the greatest scientific deception of our times." Chapters are devoted to the following:

Myth 1) High-fat foods cause heart disease. There is no evidence that excess animal fat or cholesterol in the diet promotes atherosclerosis or heart attacks. Over 20 studies confirm that heart attack patients have not consumed more fat than controls and that the degree of atherosclerosis at autopsy is unrelated to diet.

Myth 2) High cholesterol causes heart disease. Numerous studies also show that people with low blood cholesterol levels can be just as atherosclerotic at autopsy as others with elevated cholesterol levels

Myth 3) High-fat foods raise blood cholesterol. Your body produces three to four times more cholesterol compared to fat intake. Cholesterol production increases when you eat little cholesterol and decreases when you consume a lot. That's why low fat diets can't lower cholesterol to any significant degree.

Myth 4) Cholesterol blocks arteries. Cholesterol is a large, inert molecule and there is no such thing as "good" or "bad" cholesterol. Even LDL, the presumed villain that infiltrates vessel walls because it is smaller doesn't cause problems until it becomes oxidized and triggers an obstructive inflammatory reaction.

Myth 5) Animal studies prove the diet-heart notion. This is completely debunked. Atherosclerotic lesions in animals produced by force feeding fats bear little resemblance to the pathology seen in humans.

Myth 6) Lowering your cholesterol will lengthen your life. Over 75 pages are devoted to showing that there is not only no proof for this but that the evidence is overwhelming that the reverse is more likely.

Myth 7) Polyunsaturated oils are good for you. The diet-fat proponents suggest substituting these for saturated fats despite evidence that they can accelerate atherosclerosis and aging, can make you stupid by depleting vitamin E, and can cause cancer. Trans-fats in margarine and processed foods are the worst.

Myth 8) All scientists support the diet-heart hypothesis. Forget about this one. The public, doctors and most scientists have been misled because powerful vested interests have been able to suppress the dissemination of the above information despite publication of these facts in peer reviewed scientific publications over the past two decades. This includes not only the commercial cholesterol cartel but also proponents of the diet-heart hype who are funded by them and must preserve their reputations and income.

The author's credentials are impeccable. He has published numerous articles on varied aspects of this subject as well as *The Cholesterol Myths* in Sweden in 1991 and Finland the following year, where it was actually burned following a TV program that criticized diet-heart proponents. Highly recommended!! Many of the authorities cited have participated in our Montreux Congresses where a similar campaign has been waged for over a decade. When the dust settles, I feel certain that we will both be vindicated - so stay tuned.

Health and Stress
The Newsletter of
The American Institute of Stress
124 Park Avenue Yonkers, NY 10703

ANNUAL SUBSCRIPTION RATE:
E-Mail $25.00

ISSN # 1089-148X

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