

The Newsletter of THE AMERICAN INSTITUTE OF STRESS

Number 3

1991

4th International Montreux Congress on Stress February 16-20, 1992

These are the dates for next year's meeting, and we are in the process of planning the program and selecting appropriate authorities to serve on the Faculty. Sessions will again be devoted to Stress and Cardiovascular Disease, (Stress and Sudden Death), Psychosocial Stress, (Effects of Rapid Socio-cultural Change), Stress and Immune System, Biobehavioral Effects of Low Emission and Subtle Energies, etc. Particular emphasis in the latter and other sessions will be devoted to reviewing Eastern approaches, in an attempt to scientifically explore and validate how meditation, acupuncture and other non-traditional therapies achieve their benefits. Non-invited presentations will be considered based on the appropriateness of the subject matter and its contribution to a specific session or workshop.

Dr. Yujiro Ikemi has been selected as the recipient of next year's Hans Selye Award. A distinguished researcher in various aspects of psychosomatic medicine for several decades, including the role of a strong faith in spontaneous remission from cancer. He is being honored for his contributions to integrating Oriental and Western approaches into the biopsychosocial model. Further details about the program and Faculty will follow in future issues of the Newsletter.

Increased Stress-Related Casualties from Gulf Crisis

Based upon the Vietnam War experience, military psychiatrists are changing the way they treat battle fatigue and other consequences of war stress. The phenomenal increase in Post Traumatic Stress Disorder (PTSD) in Vietnam Veterans has prompted numerous refinements in psychological approaches to the treatment of soldiers involved in active combat. Newer concerns are surfacing because of the anticipated problems of dealing with fighting in chemical warfare garb, which is expected to increase the rate

of psychiatric casualties. Many efforts are aimed at minimizing psychiatric symptoms by concentrating on treating soldiers near the battlefield and returning them to their units rapidly, sometimes after a day or only a few hours of rest. The use of the term "battle fatigue" may help reduce "both immediate symptoms and the long-term anguish that comes up when soldiers begin to think of themselves as mentally disabled."

In this new approach, soldiers with battle fatigue will be viewed as not suffering from a psychological disorder, but rather showing a perfectly normal response to a stressful situation. Consequently, potential sufferers will be reassured that they do not have a psychiatric disorder, but merely need some rest, according to one of the psychiatrists who is coordinating Defense Department plans for handling casualties in the Persian Gulf. Symptoms are frequently precipitated by seeing a comrade killed suddenly, (continued on page 2)

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For further information on the original source of abstracts and other reprints available on similar subjects, please send a self-addressed stamped envelope to: Reprint Division, American Institute of Stress, 124 Park Avenue, Yonkers, NY 10703.

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The Newsletter of
**THE AMERICAN INSTITUTE OF
 STRESS**

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Increased Stress-Related Casualties from Gulf Crisis

(continued from page 1)

but they can also arise from chronic problems due to protracted activities. "The more terrifying the weapons, the greater number of rounds fired, the more troops wounded, the greater the psychiatric casualties," according to one experienced Israeli stress expert. Rather than panic attacks or extreme anxiety, some of the earliest signs of psychological stress are apt to be apathy and sloppiness, or failure to perform routine self-protective measures. Commanding officers in the Persian Gulf theater have been alerted to recognize these early signs of battle fatigue and to give troops who start to exhibit them a few hours or even a day's respite. This is especially important for soldiers who complain "that their hands will not do what they want them to, or who stare vacantly into space, or make repeated mistakes in routine activities."

Potential new weapons have induced a great deal of terror, and some believe that having to wear chemical warfare gear may increase psychiatric casualties by as much as 20%. To combat this, drills have been devised to make the unexpected less of a surprise and more routine. Troops are now trained wearing protective suits during simulated chemical attacks, to reassure them that their gear will protect them from tear gas and nerve injuring chemicals. The new treatment approach is to find a protected area near the front which will provide adequate rest and recreation, so that suitable candidates can be returned to combat as rapidly as possible. This is in sharp contrast to World War II policies, when such individuals were evacuated to distant hospitals, and very few ever returned to

battle. Often this type of approach intensifies, rather than mitigates, the stressful psychological consequences of battle fatigue. Now, battle fatigue victims will be encouraged to engage in group activities that will enable them to talk over what has happened to them and to share their feelings with others, either spontaneously in groups, or by informal debriefing. According to prior Israeli studies, returning such soldiers promptly to the front, cut subsequent PTSD complaints in half.

These symptoms usually begin 6-12 months or more after the initial trauma, and are characterized by intense flashbacks in the form of nightmares, alternating rage and depression, apathy, etc., due to reexperiencing horrifying and traumatic war scenes. Unless such individuals receive immediate care they are four times more likely than others to suffer from PTSD years later. In the Vietnam conflict, the rapid return to combat of battle-fatigued soldiers proved to be quite effective. However, it is known that those who suffer battle fatigue and especially because of seeing grotesquely mutilated bodies or witnessing or participating in atrocities are at the greatest risk for developing PTSD. Individuals in this category should be followed very closely so that prompt intervention can be instituted when early warning signs of problems appear.

N.Y. Times 1-22-91

"War is hell."

William Tecumseh Sherman

PTSD in Children

Several years ago, a sniper using both an automatic rifle and shotgun, killed one girl and injured more than a dozen children and a staff member at a Los Angeles elementary school. Researchers recently conducted 14-month followup interviews on one hundred of the 159 students who had initially been screened shortly after the shooting incident. Nineteen of these had actually been on the playground at the time of the attack, while others were in the school building. They found that three out of four who had been on the playground were still suffering from Post Traumatic Stress Disorder (PTSD) more than a year later. A significant number reported greater stress six months after the attack than immediately following it, because of "survivor guilt." Those who were not on the playground when the sniper attacked but had been friends with the murdered girl, also exhibited evidence of persistent grief and depression.

The researchers postulated that PTSD may affect a child's psychological development at a very critical time in their life, "when attention, initiative, sexual interaction, outlook, personality style, self-esteem and impulse control are still forming." This can have important implications for both early intervention and prevention of subsequent problems.

Herald Gannett News Service - 2-12-91

Viral Heart Attacks — Another Link with Stress?

Some researchers believe that cytomegalovirus may be involved in causing arteriosclerosis and heart attacks. It is estimated that possibly four out of five Americans have been infected with this virus at some time in their lives. However, like all members of the herpes family, it can remain dormant in the cell for years, and there may be few or no clinical signs or symptoms of infection. Heart transplant recipients who test positive for cytomegalovirus develop a rapidly accelerated form of arteriosclerosis and occluded arteries in a matter of months. Uninfected heart transplant patients may eventually show similar changes, but not until many years after their operation. Atherosclerotic lesions elsewhere in patients with occlusive vascular problems have also been shown to contain this virus.

In animal studies, when chickens raised in a germ-free environment were infected with a herpes virus, they developed classic atherosclerotic changes despite the absence of any risk factors for coronary heart disease. If they were also fed a high fat diet, these changes appeared more rapidly. When protected from the virus, no such changes were found, despite dietary attempts to promote them by loading them with fats. When rats are infected with cytomegalovirus, the organism quickly localizes in the heart. As in humans, transplant studies confirm more rapid and extensive atherosclerotic lesions in recipients, than in uninfected controls.

While dietary cholesterol, hypertension, cigarette smoking, genetic and other risk factors are important, it is clear that no one really understands what starts the atherosclerotic process in the first place. It seems likely that atherosclerosis can have many causes, and that the earliest stages in the process are initiated by the accumulation of excess fats in certain cells lining the inner surface of blood vessels. This can cause the stimulation of various immune system, platelet and growth factor activities that produce a proliferative response. Eventually, it results in an atherosclerotic plaque, "like a non-cancerous tumor that grows inside arterial walls." Human arterial cells infected with herpes virus do contain more fat and cholesterol than uninfected ones, and it has been found that the virus can also stimulate endothelial cells to proliferate causing changes similar to those seen in atherosclerosis. These and other observations suggest that the presence of the virus in atherosclerotic lesions may be more in the role of

a perpetrator, rather than an innocent bystander.

Support for this comes from the prominent heart surgeon, Michael DeBakey, who stated that in his patients with severe atherosclerosis, only a third had high cholesterol, "which makes me think something else is going on." If viruses can play an early and critical role in the development of arteriosclerosis, it is possible that a vaccine, or anti-viral drugs, could prevent this hallmark of the aging process. Heart transplant recipients invariably receive drugs to suppress the immune system in order to prevent rejection of the donor organ. It is well known that such agents also markedly increase susceptibility to viral infections and cancer, because of lowered immune system defenses. These observations also provide strong support for the contributory role of stress to coronary heart disease and other arteriosclerotic disorders, in view of its similar ability to significantly suppress immune system resistance to viral infections.

N.Y. Times, 1-29-91

"The heart of a fool is in his mouth, but the mouth of the wise man is in his heart."

Benjamin Franklin

Is There Such a Thing As "Safe Sex"?

"Safe sex" may be an oxymoron, according to some studies performed at the National Institute of Mental Health. Anecdotally, male fighters, athletes and even prize bulls and horses have been prohibited from sexual intercourse prior to athletic competition. In one experiment, male hamsters were permitted regularly scheduled sexual mating activities, and then exposed to disease-causing organisms. It was found that their natural killer cell production declined for two hours and antibody production also decreased for up to one week after sexual activity. It has also been postulated that sexual activity can depress immune system function. However, one specialist in sexually transmitted diseases with the Center for Disease Control, has indicated that it would be "very difficult to test out how much of sexually transmitted disease is due to increased exposure, and how much is due to increased vulnerability."

Modern Medicine, 1-19-91

"Oh, what a tangled web we weave when first we practice to conceive."

Don Herold

More Complexities of The Immune System

In previous issues of the Newsletter we have pointed out that while various investigators report on the effects of stress on immune system function, such observations must be carefully scrutinized. The conclusions reached depend entirely on the nature, severity and duration of stress as well as the parameters of immune system function being measured. There is no global measure of immune system function and certain stressors may cause specific immune system markers to increase at the same time others decline or remain unchanged. The paradoxical aspects of such relationships become apparent when one reviews the literature dealing with respect to stress and cancer, and its possible mediation by immune system influences. All the agencies which are currently used to treat cancer, are also implicated in its causation or aggravation. This includes various steroids, x-irradiation and immunosuppressant drugs. When the latter are used to prevent rejection for kidney or other organ transplant recipients, there is a sharp increase in the incidence of cancer in the recipients of the donor organ. This is firmly supported by a new study indicating a documented case of primary hepatocellular carcinoma in a liver transplant patient suffering from liver failure due to hepatitis B. The malignancy developed after only four years in this patient who had been taking immunosuppressant drugs to prevent tissue rejection. Usually, primary liver cancer occurs in chronic hepatitis B patients after an average of twenty years of infection. Paradoxically, these are the same drugs which are frequently used to treat various malignancies.

Annals of Internal Medicine, 114:212-213, 1991

"A healthy body is a guest chamber for the soul; a sick body is a prison."
Francis Bacon

More on Stress in The Airline Industry

According to a recent *Wall Street Journal* article, airline unions have little chance of recouping lost wages and benefits. The industry, which lost a record two billion dollars in 1989, had another bad year, with some companies asking its employees to accept a one-year 10% pay cut, reduced benefits, and new work roles. At the same time, flight attendants have been pushing for mandatory limits on duty time, and have proposed legislation to limit work hours to 14 hours a day in the U.S., and 16 hours on overseas flights. Some attendants are currently working 18-hour stretches.

In other areas, there is a personnel surplus. Two years ago, there was a shortage of pilots and air-

craft mechanics, but Eastern's shutdown, layoffs at U.S. Air, Pan Am and TWA have produced a glut of out-of-work employees. Strikers have had a particularly difficult problem, and Delta has only recently dropped its policy of not hiring Eastern strikers. Overall, more than a thousand pilot-reservists have been called up because of the Persian Gulf crisis, and many airlines have sharply curtailed overseas flights. Recent crisis layoffs and bankruptcies have forced flight attendant unions to set up elaborate stress-reduction programs. "Peer counseling" proved particularly effective for attendants who survived the 1989 United incident, and their union is now holding sessions in several cities to help former Eastern attendants to deal with their job loss stress. The recent Los Angeles crash which killed 34 people occurred in a tower which was authorized to employ 38 controllers, but had hired only 34. One of the unfilled positions was for an assistant to alert controllers to such potential conflicts. Before the 1981 strike there were 13,302 "full performance level controllers" who were certified to work in the radar or tower position. This year there were 12 million more landings and takeoffs, but only 10,672 controllers who were certified to work all these positions.

Wall Street Journal - 2-12-91

"It is not enough to be busy; so are the ants. The question is: What are we busy about?"
Henry David Thoreau

More on Black Hypertension and Racism

The stress of coping with racism, rather than genetics, may be the main reason blacks suffer more from hypertension than whites according to a recent comprehensive study. John Hopkins researchers examined blood pressures and skin colors among blacks in Savannah, Georgia; Hagerstown, Maryland; and Pueblo, Colorado, in an effort to determine whether heredity or social status could best predicate high blood pressure. Their findings reveal that hypertension was highest in dark-skinned blacks — but only if they ranked low in terms of socioeconomic status, or if they hadn't finished high school. Researchers have debated for the past two decades whether American blacks suffer from hypertension and die from strokes at much higher rates because of genetic or psychosocial influences.

Black hypertension was particularly prevalent in Savannah, where, on an average, the blacks had darker skin colors than in the other two cities. While diet might play a role, the major reason appeared to be that we "live in a color conscious society; that's a nice way of saying it's a racist society."

JAMA 2-8-91, Palm Beach Post 2-6-91

Is There A Happiness Hormone?

Oxytocin is a pituitary hormone that has long been known as a chemical which stimulates uterine contractions during delivery, and also helps to promote the secretion of milk after childbirth. Its presence or effects in males has not been intensively investigated, but new studies suggest that it may have far powerful effects in both sexes in acting as an aphrodisiac by encouraging males to seek mates more fervently, and, conversely, to cause females to invite such overtures more passionately. It also stimulates both the sensation of sexual arousal and climax, and the subsequent feeling of relaxed satisfaction, much like the proverbial cigarette. According to one recent report, it also encourages new mothers and fathers to be more likely to nurture their young. Even in those who are not parents, it can produce an overwhelming urge to cuddle. One researcher described it as nature's way of ushering in joy, noting, "it is the satisfactoral hormone . . . the hormone that mediates the good feelings animals have in all sorts of interactions." No one has yet suggested that this will prove to be an antidote for problems such as hostility and marital boredom, but these new findings have precipitated a rediscovery of this old evolutionary hormone, and it has now become a topic of intense scientific interest. Animal studies suggest that when male and female sex hormones prime the organism for reproduction, oxytocin sends the signal which both precipitates the act of copulation and makes it more pleasurable. Other research suggests that oxytocin also strengthens the bonds between parent and offspring. In addition, "oxytocin is an excellent candidate for hormones involved in the formation of social bonds . . . it facilitates tactile contact between animals, and that is an early step in the development of social attachment."

Mothers have reported feeling sexually stimulated while breast feeding, and some scientists believe that this may be due to the oxytocin produced, which also has the added effect of arousing the mother, since estrogen levels are high during nursing. Sheep farmers in New Zealand and Australia have long known that ewes can be encouraged to bond normally with a lamb, even when the two have been separated for days, simply by stimulating the mother sheep's genitals for five minutes. Usually, a mother sheep will take care of her lambs only if they spend the first six hours together. If there is some problem during birth, and the lamb is removed for longer than that, the ewe "will either run away or ignore it." Vaginal stimulation seems to produce and release oxytocin into the blood stream, and this is apparently all that is needed for the ewe to commence licking the lamb,

softly and, otherwise, behaving like a model mother.

N.Y. Times, 1-22-91

"Happiness isn't something you experience; it's something you remember."

Oscar Levant



**I THINK
I'M
HAVING
STRESS!**

Folk Wisdom and Taking Pills

In primitive cultures, folk beliefs and placebo effects play an important role in medical treatment. However, such factors also persist in Western medicine, especially with respect to helping or hindering compliance with a doctor's prescription. Frequently, this depends upon how the patient visualizes the illness or interprets the physician's description of it. A recent study demonstrated that these issues could have an important influence on patient compliance with prescriptions for anti-hypertensive drugs. Fifty-four black women in New Orleans being treated for hypertension were interviewed with respect to their beliefs about what high blood pressure represents. Their responses were compared to their willingness to take antihypertensive medication three times a day. This particular group was chosen because of the high incidence of hypertension in blacks, and the likelihood that such a segment would be more susceptible to influences from traditional "folk wisdom" sources.

As expected, those who were most likely to adhere to the prescribed regimen, were the ones who had accepted the medical explanation for the cause of their illness. In contrast, for those who retained folk beliefs or old wives' tales about the role of the circulatory system, compliance depended upon whether they thought the disease was caused by emotional or physical difficulties. Some, who described their problem as "high blood," meaning that the blood was either "too hot" or "too thick," felt that the problem was due to heredity or bad diet, and tended to try folk remedies such as drinking lemon juice. However, they were almost just as likely to have also taken the medication correctly, if they had also accepted the medical explanation, since they believed that the pills would also effectively address these problems. However, those women who thought of their disease as "high tension" due to nervousness, anxiety, or stress, were much more apt to stop the medication, once anxiety-producing problems at home were solved.

New York Times, 10-22-90

Is There a New Stress or High Blood Pressure Hormone?

Certain East African tribes gather seeds from the *Strophanthus gratus* plant, and grind them up to extract a poison. They smear this on their arrow tips to kill their prey. The active lethal agent is ouabain, a steroid containing a substance which possibly is produced as an adaptive means of protection. Similar compounds can be found in a variety of other plants and animals, including the poisons of some toad species. Their chemical and physiological characteristics are similar to digitalis, which gets its name from the purple foxglove plant, *digitalis purpurea*. The cardiac effects of digitalis have been known since 1500 B.C. Its major effect is to increase the force of the heartbeat and also slow its rate. For over a hundred years, digitalis has been the leading drug used for treating or preventing heart failure. However, in large amounts, it causes irregularities in heart rhythm that can have serious consequences. Since digitalis is a steroid, it can have other effects in the body. Occasionally, males taking digitalis develop enlargement of the breasts, because of an estrogen-like activity. Ouabain is lethal because it can produce ventricular fibrillation, which, if untreated, rapidly causes sudden death.

Ouabain, or a very similar substance, has been isolated in tiny amounts in blood specimens from normal healthy people. It appears to be manufactured in the body, rather than coming from dietary sources. The same substance can be detected in rats and cows, which have very different diets, as well as in patients who have been fed solely by intravenous therapy devoid of any such steroid precursors. It has previously been reported that many hypertensive individuals have increased blood levels of a "sodium pump inhibitor." It is postulated that a protracted slowdown of sodium pump activity allows both sodium and calcium to accumulate within the endothelial cells on the inner lining of blood vessels. This leads to increased peripheral resistance and ultimately permanent hypertension. Recently, mass spectrometry scans using gallons of blood from hypertensive patients has revealed that this sodium pump inhibitor substance appears to be ouabain. That's not surprising, since ouabain has been used for years in laboratory experiments as a cellular sodium pump inhibitor.

Based on live assays and tissue culture studies, this human, ouabain-like hormone is manufactured in the adrenal cortex. This is also not surprising, in view of the prime role of the adrenal cortex in responses to stress, and its contributions to hyper-

tension. Of particular interest is the observation that "ouabain" levels are elevated in sustained hypertension, but not "white coat hypertension." It seems increasingly apparent that the mechanisms and hormones involved in "white coat," or transient stress-related blood pressure elevations, are quite different from those which contribute to fixed hypertension. Could ouabain be the answer in some patients?

If confirmed, this research could have important implications for prophylaxis and treatment. Children and others with a strong family history of hypertension could be monitored to detect rising levels of ouabain long before blood pressure becomes elevated. Since ouabain is a sodium pump inhibitor, sodium stimulates its secretion. Hypertension in such individuals might be forestalled or prevented by placing them on a low salt diet. This also helps to explain why salt restriction may be useful in selected hypertensive patients, but of little value in most. Adrenal hormones like adrenalin, nor-adrenalin, aldosterone and cortisol are known to increase blood pressure. It would appear likely that ouabain and perhaps others may soon be added to that list.

Science News, 12-1-90

"There was no respect for youth when I was young, and now that I am old, there is no respect for age—I missed it coming and going."

J.B. Priestly

Decreasing M.R.I. Stress

Magnetic resonance imaging (M.R.I.) is a widely used and highly sophisticated diagnostic procedure. The machines cost about 2-1/2 million dollars, and last year, about 5-1/2 million scans were ordered because they provide superior images of internal organs, particularly the brain and spinal cord. However, although painless, the experience can be so terrifying that more than 1,000 patients a day ask for their tests to be terminated prematurely, often because they feel that they have been "sealed alive in a coffin." Since M.R.I. scans cost about \$1,000, aborted tests exact a high price, which is passed along to other patients and insurance companies. As a result, a variety of approaches have been tried to reduce patient fears and discomfort. These range from piping music into the machine, to teaching various stress-reduction and relaxation techniques.

A complete scan typically takes about 45 minutes, during which patients must lie absolutely still, since the slightest movement will blur images. Most tests also require patients to keep their heads and torsos in the center of the seven-foot long machine, with their face only 4 to 6 inches away from the inner walls of the cylinder, causing problems even in those who are not claustrophobic. "Music has charms to sooth a

savage breast," wrote William Congreve three centuries ago, and a recent Johns Hopkins study of MRI patients who listened to music during the procedure, confirmed that they experienced much less stress and discomfort.

The problem is, that despite premedication with mild sedatives, some patients, particularly children, have a tendency to move in time with the music, causing blurred images. In one innovative approach, an old M.R.I. machine, which was no longer working, was painted to resemble a spaceship on one side, with a backyard scene on the other. The machine was fitted with a device which measures the slightest movement of its occupants. It also had a television monitor inside, which showed cartoons as long as the patient is still. The cartoons stop as soon as there is any appreciable wiggle. Children quickly learn to lie absolutely still during the procedure. Although the real M.R.I. machine does not have cartoons, the soundtrack of the film that earlier had absorbed them is played, and even children with a short attention span have been able to lie still for more than 20 minutes during their brain scans.

Various manufacturers have tried to make the machines more comfortable by adding fans, soft lights, better padding, and in some models, mirrors that allow the patient to see into the room. However, one patient who looked at herself in the mirror, remarked, "so this is what I'll look like laid out in a coffin." *The N.Y. Times, 2-14-91*

"On mechanical slavery, on the slavery of the machine, the future of the world depends. *Oscar Wilde*

Can Stress-Related Vessel Spasm Cause a Coronary?

A recent article proposes "a spasm of resistance" theory of coronary heart disease and other ischemic disorders. It is hypothesized that "spasm of resistance" vessels can induce clinical symptoms as well as permanent pathologic changes. Such vessels maintain vascular homeostasis through autoregulatory mechanisms. Inappropriate activation of these mechanisms may represent an overlooked, but important cause of ischemia and heart attacks.

Conventional models of coronary heart disease tend to almost entirely ascribe this problem to arteriosclerotic blockage. Thus, the terms myocardial infarction and coronary thrombosis have been used almost interchangeably over the years by clinicians. Nevertheless, it is quite clear that patients with severe occlusive disease as determined by autopsy studies or angiography, have never had symptoms of angina or chest distress. Conversely, a significant number of patients with myocardial infarctions show no evidence of coronary thrombosis, or severe coronary atherosclerosis as the basis for their problem.

Many conventional risk factors for coronary heart disease might also operate through the spasm of resistance concept, including hypertension, smoking, cocaine use, and certainly stress. Other disorders such

as migraine and Raynaud's Disease could also fall within the spasm of resistance vessel theory. According to this paradigm, angina might essentially represent the coronary manifestation of an overall generalized vessel spasm disorder. Further support for this comes from clinical observations that emotional stress can significantly aggravate or precipitate ischemic chest pain as well as attacks of migraine and Raynaud's.

One of the most significant risk factors for heart attacks is fixed stenotic disease of the coronary vessels. However, this does not negate the spasm of resistance concept, but rather tends to support it. In experimental studies, there is often failure of restored flow, or reperfusion, after release of the obstruction, which could result from injury-induced spasm of resistance vessels. Ischemia itself might cause sufficient tissue necrosis to prolong perpetuation of spasm, especially in the presence of other risk factors. Obviously, such effects would be much more severe in vessels which had already been compromised by atherosclerotic lesions constricting the lumen.

Although the public clearly accepts the notion that "stress can give you a heart attack," and although there is mounting supportive scientific evidence, prophylactic and therapeutic efforts to address this it has met with relatively little support from cardiologists. Such approaches take a lot of non-reimbursed time, and also require skills that most physicians do not have. It's much easier to simply prescribe a diet and drugs. The current heavy and somewhat exclusive emphasis to conquer heart disease by lowering cholesterol levels is, as the author notes, "paradigm driven." This model attributes coronary heart disease solely to atherosclerosis, which in turn is based on a physical model of fatty foods causing elevated cholesterol, which then precipitates out as fatty plaques causing vascular obstruction.

There is little doubt that excessively high levels of cholesterol can be a vector for atherosclerosis. However, this relationship occurs at levels far higher than those presently considered to be abnormal. Furthermore, it is not generally appreciated that emotional stress has a far greater influence on cholesterol elevation than dietary fat intake. The author emphasizes that his concept is not a recommendation to change established treatment procedures for ischemic heart disease. However, he strongly believes that more research efforts should be directed towards the study and appreciation of the pathophysiology and potentially important role of the spasm of resistance vessel concept, and its relationship to this and other stress-related disorders.

Medical Hypotheses, Vol. 33:31 - 41, 1990

"Every noble acquisition is attended with its risks; he who fears to encounter the one must not expect to obtain the other."

Metastasio

Book Reviews • Meetings and Items of Interest

"Stress in the American Workplace: Alternatives for the Working Wounded," Donald T. Gruenfeld, Deborah H. Gruenfeld, LRP Publications, Fort Washington, PA, 192 pps., \$19.95

This is an excellent publication and the senior author is a well-recognized authority on workers compensation claims for job stress. This has become a skyrocketing problem and now threatens to bankrupt the system in some states. As noted, between 1980 and 1986, such mental stress claims jumped 531 percent in California, increasing 47 times faster than overall disabling injury claims. In 1987, employers in that state shelled out almost one billion dollars just for medical and legal fees alone, more than most states spend on actual benefits. It is important to recognize that workers compensation regulations for job stress vary considerably. Some states do not recognize them at all, whereas Michigan awards benefits to any employee who honestly, even if mistakenly, believes their emotional distress was caused by work pressures. A particularly valuable section of this book explains these variations, and cites relevant cases in each state that has set precedent. Sources of job stress are discussed in detail, and the effects of stress on worker health and productivity are also reviewed. As noted, "between 75 and 85 percent of all industrial accidents are stress related" and the authors also provide evidence that stress is "a catalyst if not a major cause . . . in stroke, cancer, and cardiovascular diseases." Suggestions and guidance are offered as to what should be done to alleviate job stress, emphasizing that the numerous "bandaid" approaches currently in place, seldom produce any lasting benefits. This book will be extremely valuable to anyone interested in the problem of job stress, and particularly its varied and complex relationships with workers compensation liability, and is highly recommended.

Apr. 6-7, Postgraduate Course in Practical Hypnosis, American Academy of Hypnosis, Detroit, MI (216) 867-6677.

Apr. 12, Psychiatry Update, Dalhousie University, Halifax, N.S., Canada (902) 494-1560.

Apr. 12-14, Recognition and Treatment of Problem Behavior in Long-Term Care, St. Louis University, Osage Beach, MO (314) 577-8167.

Apr. 15-19, American Society of Clinical Hypnosis, St. Louis, MO, (708) 297-3317.

Apr. 18, Ruth Fox Course for Addiction for Physicians, American Society of Addiction Medicine, Boston, MA (212) 206-6770.

Apr. 19-21, 4th Annual Conference on Professional Well-Being, Durham, NC (919) 419-0011.

Apr. 24, Day in Occupational Health, McMaster University, Hamilton, Ontario, Canada (406) 525-9140, Ext. 2219.

Apr. 25-28, Psychiatry, Psychology and Psychotherapy Topics, International Transactional Analysis Assoc., Inc., Stamford, CT (203) 322-1400.

May 11-12, Alcoholism and Drug Addiction, American Academy of Psychiatry in Alcoholism and Addiction, New Orleans, LA (301) 220-0951.

May 11-16, American Psychiatric Association, New Orleans, LA, (202) 682-6100.

May 19-22, NECAD '91 Conference of Alcoholism and Drug Dependence Edgehill Newport, Newport, RI (401) 849-5700, Ext. 252.

May 23-27, Association for Behavior Analysis, Atlanta, GA (616) 387-4495.

May 30-31, Occupational and Environmental Medicine U. of California School of Medicine, Sacramento, CA (916) 734-5390.

June 7-8, Psychological Trauma, Harvard Medical School, Boston, MA (617) 432-1525.

June 19-21, 2nd International Workshop on New Trends in Cardiovascular Therapy and Technology: Risk Factors, U. of Genoa, Genoa, Italy Fax: (39 010) 818246 or phone (39 010) 873106.

Aug. 16-20, American Psychological Association, San Francisco, CA (202) 955-7706.

Meetings and Items of Interest

Apr. 1-5, North Carolina Society of Clinical Hypnosis, The California Edge: Psychological Interventions in the 90's. Hypnosis, Family Systems, Mind-Body Healing, Monterey, CA (415) 531-2000.

Apr. 4-5, Univ. of CA Work and Mental Health, San Francisco, CA (415) 476-5208.

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