

The Newsletter of THE AMERICAN INSTITUTE OF STRESS

Number 10

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MIND OVER CANCER: SOME CAVEATS

Significant associations between stress and the development of malignancy have been recognized for over 2000 years. Nineteenth century British physicians believed that emotional distress was the most powerful cause of cancer, and increased rates of the disease were subsequently correlated with the progressive psychosocial stresses of modern civilization. Numerous laboratory and clinical research studies over the past five decades have convincingly demonstrated the profound effects stress can exert with respect to accelerating the development and

growth of different malignancies. Similarly, stress reduction strategies have been shown to retard tumors in laboratory animals and prolong life in cancer patients. Other studies suggest that stress can also diminish experimental tumor growth, depending on its nature and timing. Advances in psychoneuroimmunology and neuroendocrinology have uncovered possible pathways and mechanisms that may explain these paradoxical findings.

Additional insight is afforded by viewing cancer as a "Disease of Adaptation". As one descends the phylogenetic scale, cancer becomes progressively rarer, and is not seen in primitive forms of life. However, the ability to regenerate parts of the organism that have been injured or lost increases in an incremental and proportional fashion. This capability must involve the participation of higher Central

(Continued on page 2)

ALSO INCLUDED IN THIS ISSUE

Treating Type A Time Urgency.....	2
Can You "Catch" A Heart Attack?.....	3
Helping Stressed Out Pigs And Smokers.....	4
Anger, Arteriosclerosis And Strokes.....	4
Stress And Impotence: Use It Or Lose It.....	5
Does Exercise Reduce Stress?.....	5
Do Dogs Have ESP?.....	6
Golf Stress Is Killing The Japanese.....	6
Scents, Stress And Mother's Milk.....	7

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

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(Continued from page 1)

Nervous System (CNS) centers that coordinate neuroendocrine and immune mechanisms. In humans, it has been observed that tissue injury and loss of important emotional relationships are associated with a greater likelihood of developing cancer. It is proposed that these invoke atavistic responses that were once reparative and purposeful, but now result in new growth or neoplasia that is uncontrollable and therefore malignant. However, all of the integrating mechanisms in the body that act to preserve homeostasis operate on a system of opposing checks and balances. Clinical reports suggest that positive emotions such as a strong faith, social support and other stress reduction strategies can retard or even reverse malignant growth, as in studies of patients with spontaneous remission. These observations are best explained or comprehended within the framework of Selye's "*General Adaptation Syndrome*", and his concepts of "*Diseases Of Adaptation*", and the salubrious effects of "*eustress*". They imply that cancer patients may have some control over the course of their illness, and have spawned a plethora of self-help approaches based on visual imagery, biofeedback, social support and other seemingly harmless stress reducing strategies. Nevertheless, there is a real danger in going

overboard in this direction. Patients may reject life saving chemotherapy and radiation therapies to pursue less toxic and naturopathic approaches. In addition, nothing could be crueler than adding to the existing guilt many experience, by suggesting that the cause of their malignancy and/or its progression is their own fault because of some deficiency in character, temperament, or ability to cope with stress.

Paul J. Rosch, M.D., F.A.C.P.
 Editor

Treating Type A Time Urgency

Type A Behavior has been aptly referred to as "The Hurry Sickness". Such individuals tend to eat, walk, and talk faster than others, and generally exhibit an accelerated pace of all their activities because of a persistent sense of time urgency. As a result, they are impatient and restless when they don't have anything to do, and become irritated if they have to stand in line or follow a slower moving car traveling at a normal rate of speed, even when they have no deadline to meet, simply because they feel they are wasting time. They usually work, read, or watch TV while they are eating, and tend to feel guilty if they are relaxing or on vacation.

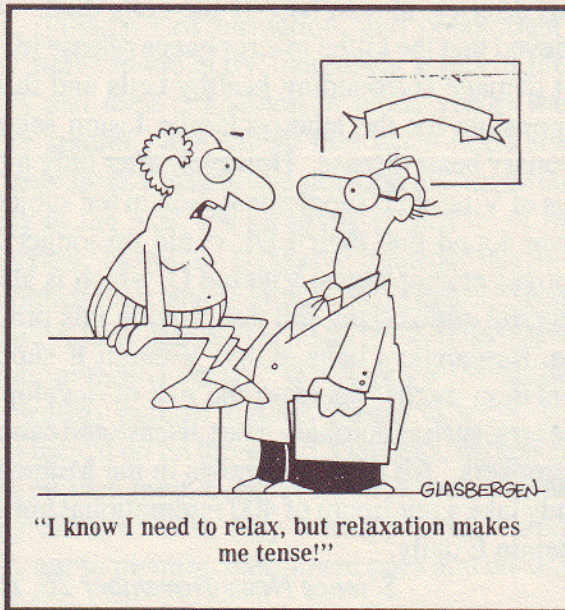
Type A behavior modification programs often focus on time management strategies by encouraging individuals to learn to say no, instead of automatically agreeing to take on extra assignments. Such individuals are often preoccupied with the quantity, rather than the quality of their work. Other useful tactics are to take a book along to read if you expect you may have to stand in long lines, or a favorite cassette or instructional audio tape to play when stuck in traffic jams. One of the most useful techniques is to set firm limits and boundaries on the time that must be devoted to work, and to develop non work related activities and personal relationships that have nothing to do with your occupation. Regular exercise often provides a useful outlet to relieve stress, and it can also afford some private time for personal contemplation and reappraising priorities. However, jogging or long distance running could backfire for those competi-

(Continued on page 3)

(Continued from page 2)

tive Type A's who constantly strive to improve time and distance goals. They may view such activities as wasted hours, rather than an opportunity to smell the roses and otherwise enjoy their surroundings and quality personal time.

Palm Beach Post-July 10th, 1993



Can You "Catch" A Heart Attack?

Although diabetes, hypertension, cigarette smoking, high cholesterol, and obesity are popular and common risk factors for heart attacks, such problems are seen in less than half of patients with coronaries. There are close to 300 different risk factors that may be "associated" with heart attacks, although clearly these are not the cause of the problem. One of the difficulties is that very different pathological processes may all be referred to as a "heart attack", including coronary atherosclerosis, myocardial infarction, and sudden death due to arrhythmia, all of which involve separate mechanisms. In general, the term usually implies a coronary occlusion due to atherosclerosis which results in myocardial damage. However, the composition of the atherosclerotic plaque that causes occlusion is different than the deposits resulting from excess cholesterol in that it has inflammatory components not dissimilar to those seen with infections.

It has been suggested that in some patients, various microorganisms might cause heart attacks by promoting the development of inflammatory atherosclerotic lesions. Indeed, some authorities view atherosclerosis as a chronic, low-grade arterial infection which is aggravated by hypercholesterolemia and other recognized risk factors. There are probably multiple potential infective pathogens and routes of transmission that might initiate atherosclerosis, such as ubiquitous viruses that produce clinically unapparent infections in animals. Pathways for their transmission to humans might be via food, which could account for the parallel increases of meat consumption and mortality from coronary heart disease seen in the United States during the middle third of this century. Similarly, improved sanitation, food hygiene and medical care may be partially responsible for the subsequent surprising reversal of climbing heart disease mortality rates.

A recent report suggests that a variety of chlamydia may also be involved. Chlamydia is usually thought of as a cause of venereal infection, but this is a different strain that is usually encountered in common upper respiratory afflictions such as bronchitis and sinus inflammation. They are spread from person to person by respiratory droplet infection. A report from Finland revealed that 60% of heart attack patients had antibodies to this strain of chlamydia, compared to only 20% in a control group. However, whether chlamydia infection contributed to the atherosclerosis responsible for the heart attack is not clear. Smoking might be a factor, since this is associated with increased susceptibility to both lung infections and heart attacks. Nevertheless, recent studies confirm increased chlamydia antibodies in non smokers as well as smokers. Since this infection is transmitted by droplets much like a cold, the notion of "catching" a heart attack or developing a vaccine to prevent coronary atherosclerosis may not be so far fetched.

Associated Press-May 24 1993

Health and disease, thought and emotion, are communicable, contagious.

Claude Bragdon

Helping Stressed Out Pigs And Smokers

Pigs are unusually sensitive to emotional stress in terms of their cardiovascular responses, as has been demonstrated by the elegant work of James Skinner, previously reported on in the Newsletter. European hogs appear to have a particular genetic susceptibility to stress induced sudden death, which costs farmers an estimated 560 million dollars annually. According to one report, up to 9 out of 10 pigs in West Germany and Belgium may suffer from fatal stress attacks as a result of excitement due to crowded feeding conditions, being transported to market, or even the exhilaration experienced during mating. These terminal episodes are characterized by a very rapid heart beat, hyperventilation, localized areas of skin discoloration, and a progressive increase in body temperature that ultimately proves fatal. It now appears that the basic problem stems from an unusual sensitivity to oxidative stress resulting from unopposed free radical activity.

European pig farmers serendipitously discovered that dietary supplements of Vitamin E, appeared to provide some protection, and researchers reasoned that this was because of its anti-oxidant activity and ability to scavenge free radicals. Further examination of pigs prone to succumb to stress attacks confirmed that their cell membranes were genetically more susceptible to free radical damage. Red blood cells of stress susceptible pigs were almost 6 times more subject to oxidative problems than those without this genetic trait, and this could be corrected by administering Vitamin E. A Swiss study in humans also showed that low plasma levels of Vitamin E was a better predictor of death from heart attack than either hypertension or elevated cholesterol.

Smoking causes increased oxidative stress, and Vitamin E appears to provide similar benefits with respect to reducing this. In one study, smokers were given either 1000 units of Vitamin E or a placebo for two weeks, and oxidative damage was compared in these two groups as well as a control

group of non smokers. Red blood cells from unsupplemented smokers had 3 times more oxidative damage than those from smokers who had received 1,000 units of Vitamin E or non-smokers. In a recent University of Minnesota study, it was shown that when oxidized low density lipoproteins were placed in contact with macrophages lining heart arteries, almost half of the cells died. It is believed that the killed macrophages release toxins that damage surrounding healthy cells and this is responsible for the atherosclerotic lesion seen in coronary heart disease. However, after only a few days of Vitamin E supplementation in ten subjects, it was found that their LDL could no longer kill exposed macrophages. Vitamin C, which is also a powerful antioxidant, did not provide this protection. Researchers believe that Vitamin E supplementation might "decrease the risk of developing diseases, such as coronary heart disease and cancer" in smokers. All of the scientists in the Minnesota Study take a minimum of 400 international units of Vitamin E daily.

Science News-November 26, 1988

Am. Journal of Clinical Nutrition-April, 1991

Medical Tribune-July 27, 1993

Anger, Arteriosclerosis And Strokes

Chronic anger and hostility, especially when suppressed, appear to be associated with a higher incidence of heart attacks. The mechanisms involved may be related to higher secretion of stress related hormones which cause cardiac injury and accelerate blood clotting and atherosclerosis. If that were true, one would suspect that increased anger would also increase the likelihood of atherosclerotic stroke, and a recent Japanese study supports this. Researchers assessed the personality characteristics of 34 individuals and determined the likelihood of stroke by measuring the degree of atherosclerosis in their carotid arteries. More than half the people with severe atherosclerosis rated high on anger scales. In comparison, only 16.7 % of

(Continued on page 5)

(Continued from page 4)

those who had no atherosclerosis were judged to be very angry.

It is still not clear whether chronic anger causes strokes, or whether hardening of the carotid arteries can make you cranky. However, most authorities believe that anger can result in an increase in adrenalin and other hormones that raise blood pressure, quicken clot formation, and breakdown of fatty stores in the body, increasing levels of blood lipids and their deposition in blood vessel walls. Other studies have shown that when heart attack patients simply visualize a situation that made them angry in the past, the pumping efficiency of their heart falls. However, if they are trained to learn how to control their anger as part of a stress reduction program, this cardiac function is much improved. As one authority noted, "When we give workshops on hostility control and ask people to write down what they'd do on the world's last day, no one ever tells us that they'd get even with their enemies. They always tell us they'd treat all their enemies well, not to mention their loved ones and co-workers."

Medical Tribune-July 22, 1993

Anger as soon as fed is dead. 'Tis starving makes it fat.

Emily Dickinson

Stress And Impotence: Use It Or Lose It

A significant per cent of impotency problems in middle aged men are believed to be of emotional origin or stress related. Fear of being able to perform is a major cause. As one comedian explained, the difference between anxiety and panic is, anxiety is when you find out you can't perform a second time, and panic is the second time you can't perform once. There are a variety of aphrodisiacs and purported boosters for middle aged virility, including rhinoceros horn, Spanish fly, ginseng root, Yohimbine, etc., but any success they achieve is most likely because of the psychological benefits they provide.

Israeli researchers think they may be able not only to explain how problems develop in some men, but also how they can be prevented. All the cells and tissues in the body require oxygen to survive, and when deprived of oxygen they deteriorate. Oxygen is brought to the tissue by red blood cells, and when blood flow is diminished, as during a heart attack, tissue injury occurs. The researchers analyzed penile blood oxygen levels in the flaccid and erect state, and were quite surprised to find that when flaccid, the penis is "probably the least well oxygenated organ in the body." In order to be healthy and functional, there must be a periodic influx of freshly oxygenated blood. Most men have 3-5 sustained erections while they are sleeping, and the purpose of this may well be to fulfill daily oxygen requirements. However, for older individuals with reduced blood flow due to arteriosclerosis, this may not be sufficient. Diabetics and cigarette smokers have higher rates of impotence because they are more likely to have diminished penile blood flow. This may also explain the so-called "widower's syndrome" in which previously sexually active men find themselves unable to have an erection after years of no sex. The researchers conclude that "it's prudent to have periodic erections during the waking hours", but refrain from advising how best to accomplish this.

Health-September 1993

Don't knock masturbation - it's sex with someone I love.

Woody Allen

Does Exercise Reduce Stress?

A variety of reports have claimed that regular jogging can reduce symptoms of anxiety and depression in many patients. Long distance runners and marathoners may sometimes experience a "runners high", during which they feel euphoric, and are oblivious to any pain or bodily discomfort, probably because of increased endorphin secretion. Although enthusiasts claim that jogging relieves their

(Continued on page 6)

(Continued from page 5)

stress, looking at the faces of some of them, it would appear that they subscribe to the "no pain, no gain" theory. The emotional and psychological rewards attributed to regular running may depend largely on the individual's expectations, and greater self-esteem because of improved physical fitness. While jogging undoubtedly can provide stress reduction benefits for many, if arbitrarily imposed, it might prove stressful for others.

A recent Dutch study found that for most people, although regular exercise has physical fitness rewards, it doesn't significantly improve mood or provide psychological benefits. Sedentary and mentally healthy men were entered into either an 8 month physical training program, a 4 month physical training program, or a no exercise control program. Mental health status and specific ratings for depression, self esteem, and other psychological traits were evaluated before and after the conclusion of the experiment. Both groups of exercisers showed a substantial improvement in cardiac conditioning, as evidenced by a lowering of heart rate and blood pressure. However, there was no evidence of significant change in the incidence or degree of depression and self esteem, nor any other psychological trend to suggest that exercise provided stress reduction benefits. Many joggers steadfastly maintain that they always feel better after a run, and that this provides an effective way to reduce stress. Part of that may be due to the fact that jogging improves their sense or feeling of control over their life. However, not everyone may respond in this fashion, especially if they are not in control, and jogging is engaged in not because they want to, but have been made to feel they have to.

Science News, Vol. 144, pg. 120, 1993

Dogs With ESP

Dogs and other animals are known to have much more sensitive hearing and vision than humans, and the development of other senses may also be superior. Various animals and even fish can apparently detect an imminent earthquake, or impending rapid changes in barometric pressure. Some

people also claim that their pets know exactly how they feel or what mood they are in, or can warn them about some forthcoming disaster.

Support for this comes from a veterinary researcher in England who studied 121 dogs who had reportedly given early warning that an epileptic seizure was about to occur. In most instances, they would suddenly start to bark, jump up and down, or nuzzle just prior to an attack, and in some instances, as much as 45 minutes before. Such capabilities are not as preposterous as they might seem. There is considerable evidence that there are receptor sites on cell membranes for subtle energies in the range of EEG activity, and disturbances in the owner's electrical field might be detectable. Other anecdotal reports suggest that some dogs have been able to detect impending hypoglycemic shock in their owners. Collies and other breeds of working dogs appear to be the most sensitive with respect to predicting forthcoming danger.

Longevity- July, 1993

The one absolutely unselfish friend that man can have in this selfish world, the one that never deserts him, the one that never proves ungrateful or treacherous, is his dog... When all other friends desert, he remains.

George Graham Vest

Golf Stress Is Killing The Japanese

"How To Die Early By Playing Golf". That's the title of a book by a Japanese sports doctor who noted "I've got a personal list of 64 people who died on the putting greens". He estimates that approximately 5,000 golfers die on the fairways each year because of the stressful nature of *gorufu*, as golf is often referred to in Japan. Even the Ministry of Health admits that golf is 8 more times likely than running to kill men over the age of 60, and is more lethal than tennis or mountain climbing. However, Japanese golfers are fanatic, and almost every one of the nearly 2,000 courses are packed beyond

(Continued on page 7)

(Continued from page 6)

belief. Ishihara Hills, a public club 2 hours from Tokyo, regularly books players up to 3 months ahead, and foursomes are spaced just 7 minutes apart. At other courses, it's not unusual for reservations to be made 6 months in advance, foursomes go out every 6 minutes, and if you miss your tee time, count on waiting another 3 months for an opening. One Tokyo enthusiast, who regularly crawls out of bed at 4 A.M. for an early morning game, states that "most of the other cars on the road at that time are golfers". Members of private clubs are not much better off. All are filled to capacity, with long waiting lists for applicants, despite initiation fees often in excess of a million dollars.

While getting a satisfactory tee time is difficult, it's hardly smooth sailing once you get on the course. In Japan, a golf match is an honor and a commitment, and you must play a full round regardless of conditions, including snow, dense fog, and night. Players usually arrive at the club an hour early to make sure they'll make their tee time, and to have one or two scotches before starting the ordeal. Caddies are obligatory, and are often antagonistic older women who constantly order you to speed up or slow down in order to stay in formation. Lunch is also apt to be mandatory, even at 10 A.M., and must be completed within 30 minutes. Complicated gambling is generally part of the ritual, frequently including bets for closest to the pin on all par threes, total number of putts each nine, lowest gross and net scores for each nine and total, etc.

Regardless of the size of the bet, it's really your honor that's at stake, since the quality of your performance can reflect on your foursome, an important client, your company, the client's company, etc. Playing "customer golf" is common since there is a great deal of pressure to keep clients happy, but it can be very tricky if it backfires. As one executive said "I feel like I ought to lose on purpose, but then there's a risk that they'll figure it out". According to custom, a hole-in-one obligates you to buy expensive gifts for everyone else in your group, free drinks for anybody who wants one, and planting a commemorative tree near the tee to celebrate your "joy". Since this can prove to be a pretty expensive proposition, some players buy hole-in-one insur-

ance for \$100 before starting out, which provides for about \$5000 to defray associated expenses.

Even after the round is complete, the ritual usually continues with more drinking in the clubhouse and further entertainment, often including a party and dinner in town and more drinking. One American executive complained that on one occasion, he had to get up at 4:00 A.M. and didn't get home until 1:00 A.M. the next day. The high Japanese death rate in golfers probably stems from the combination of alcohol, sleep deprivation, and continued stressful competitive pressures on the course. However, the golf craze is increasing, and there is no immediate relief in sight. Fanatical Japanese golfers spent \$33 BILLION for clubs, balls, clothes and other accessories last year.

The Wall Street Journal-June 16, 1993

Golf is a game whose aim is to hit a very small ball into an even smaller hole, with weapons singularly ill-designed for the purpose.

Sir Winston Churchill

GOLF - A day spent in a round of strenuous idleness.

William Wordsworth

Scents, Stress And Mother's Milk

The psychophysiological effects of various odors were evaluated using single photon emission computed tomography, evoked potentials, and sophisticated EEG studies. Some fragrances such as lavender, and orange produced a sedative effect, while jasmine and musk had stimulating properties. Other research also suggests that aromatherapy utilizing specific fragrances may be effective in reducing certain stress related symptoms. In Japan, aromatherapy is used in the workplace to either induce feelings of stimulation or relaxation, much as Muzak is programmed in the U.S.

EEG studies conducted in infants showed that there was a marked sensitivity to the odor of the mother's milk, but not samples of milk from others. These findings suggest that close parent-child bonding is probably enhanced by breast feeding.

Abstracted from *Effects Of Fragrance On Mental Function*, H. Sugano, Ph.D. - MOA Kyushu Life Science Institute, Fukuoka
Fifth International Montreux Congress On Stress

Book Reviews • Meetings and Items of Interest

Book Review

Insomnia: Psychological Assessment And Management, Charles M. Morin, Guilford Press, New York, 1993, 238 pages, \$26.95.

Insomnia is estimated to affect 20-40% of all adults, particularly women and the elderly. However, physicians rarely inquire about this during history taking, and generally pay surprisingly little attention to this complaint, even when it is volunteered. Most usually react by prescribing sleeping medication rather than attempting to determine the cause of the complaint. Few are aware that insomnia is associated with increased morbidity and mortality, and may be a marker for physical as well as emotional problems. Therefore, this book should be of interest to practicing physicians. The first of its 3 sections, entitled Evaluation, contains chapters dealing with the scope of the problem, basic facts about sleep mechanisms, different types and classifications of insomnia, and how to evaluate the significance of sleep complaints. The second section is devoted to treatment. It includes cognitive and behavioral approaches, and an extremely useful chapter on sleep hygiene which reviews the adverse effects of caffeine, nicotine, alcohol and environmental influences. There is only one chapter devoted to drug treatment, and this includes a program for withdrawal from sleep medication. The final section is devoted to evaluating treatment outcomes and clinical trials results. Practicing physicians are apt to find the Appendices of greatest value. These include an insomnia interview schedule, sleep impairment index, and sleep diary, all of which are useful in tracking the patient's progress.

The attractiveness and utility of this volume might have been significantly improved by including a list of commonly prescribed hypnotics, sedatives, antidepressants, and other medications used for the treatment of insomnia, listing generic and brand names, side effects,

and possible interactions. There was no discussion of the brouhaha over Halcion or the problem of "traveler's amnesia". No reference is made to newer approaches such as melatonin for the elderly, or Symtonic low energy emission therapy, which promises to be the most cost effective treatment for insomnia.

Nevertheless, this volume should be of value to many physicians. It contains useful instructions and charts for evaluating complaints and record keeping, and might well be recommended reading for many patients.

Meetings and Items of Interest

January 9-11 Mental Health, Substance Abuse, Managed Health Care, The Fontainebleau, Miami, FL (202) 778-3200

February 22-26 The Impact of Families, Friends, and Social Systems On Health, The Art and Science of Health Promotion Conference, The Broadmoor Resort, Colorado Springs, CO, (313) 650-9600

March 3-8 The Association for Applied Psychophysiology and Biofeedback, 25th Annual Meeting, Hyatt Regency, Atlanta, GA, for info (303) 422-8436

April 13-16 Fifteenth Anniversary Meeting, "Cross-Cutting Dimensions of Behavioral Medicine: Visions for the Future", Park Plaza Hotel, Boston, MA, Contact Laura Hayman (301) 251-2790

May 12-14 National Conference on Psychosocial and Behavioral Factors in Women's Health: Creating an Agenda for the 21st Century, Washington, DC, contact Gwendolyn Puryear Keita (202) 336-6044

July 6-9 Third International Congress of Behavioral Medicine: An Integration of Biomedical and Behavioral Research, Amsterdam, The Netherlands, for info +31-20-5252690

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