The Newsletter of
THE AMERICAN INSTITUTE OF
STRESS

Volume 2 Number 9, 1989

2nd International Montreux Congress on Stress November 19-21, Hotel Excelsior, Montreux, Switzerland

State of the art presentations on Stress and Cardiovascular Disease include the Pathogenesis of Mitral Valve Prolapse in Anxiety Disorders and Stress, The Stress Connection to Sudden Death, Stress-Related Cardiovascular Hyperreactivity in the Pathogenesis of Atherosclerosis and Coronary Heart Disease, The Role of Stress and the Sympathetic Nervous System in the Pathogenesis of Hypertension, and Hypertension as a Disorder of Communication. Other sessions are devoted to Stress, Emotions, Personality and Health, and include an update on Personality Traits As Predictors of Mortality from Cardiovascular Disease and Cancer and the Beneficial Effects of Stress Reduction Strategies. Other segments are devoted to the Stress Reduction Effects of Spa Therapy, How to Design and Deliver an Effective Stress Reduction Program, Psychophysiologic Stress Assessment Techniques, etc. The concluding presentations are devoted to the Biobehavioral Effects of Low Emission Electromagnetic Energy and their use in the treatment of insomnia, depression, anxiety and addictive disorders.

In response to a number of requests, we will be devoting certain issues of the Newsletter to specific topics. The format will include an introductory general overview followed by summary articles reporting on recent relevant research reports. This issue focuses on *Stress and Sweets*.

Stress and Sweets

It's a common belief that obese people, especially females, often reach for something sweet when they are upset or under stress. To explore this, forty-six women and forty-four men, all nonsmokers, sat in easy chairs watching a television program. Half saw a "disturbing, stressful video about bloody workshop accidents, while a comparison group viewed a pleasant travel video." On a table within easy reach were bowls of M & M candies, salted peanuts, and bland rice crackers. Following the video presentation, the participants filled out a questionnaire designed to measure their levels of concern about weight, dieting, and overeating. The bowls of food were weighed before and after each viewing. It was found that men actually ate fewer candies during the stressful video than during the travelogue, and sweet consumption showed no pattern of relationship to self-reported concern about diet. Similarly, women who cared little about weight and dieting, also ate less sweets during the stressful video. Increased candy consumption was noted only among females who had reported being concerned about their diet or weight.

Neither videotape appeared to affect appetite for salty or bland snacks in either sex. It has been shown that stress can elevate the blood sugar and lower insulin levels in normal individuals which might reduce craving for sweets. The researchers are conducting further studies to clarify the connections between appetite and mental state, stating that "if we can figure out what role stress is playing in eating disorders it may highlight an important aspect of therapy for everything from bulimia and anorexia."

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.

ALSO INCLUDED IN THIS ISSUE

The Newsletter of THE AMERICAN INSTITUTE OF STRESS NEWSLETTER is published monthly by The American Institute of Stress. Subscription rates: $35.00 annually.

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

Are There Stress-Reducing Foods and Diets?

A recent newspaper article reported that one individual who needs occasional relief from stress relies on fresh pineapple in his refrigerator. "It makes me relaxed . . . I discovered about three to four years ago that when I'm stressed, pineapple does the trick. I don't know if it's because I like it that it automatically makes me feel good or if it is something physical. It's probably something purely psychological." He's probably correct since pineapple might provide a combination of both psychological and physiological benefits. Research studies increasingly hint at relationships between certain diets or foods which affect energy, mood, motivation and creativity. Individuals suffering from hypoglycemia or low blood sugar often obtain transitory relief from their stress-related symptoms of fatigue, anxiety and depression by quick consumption of sugar rich foods. However, this often sets up a vicious cycle that perpetuates their problem and the long-term solution lies in adhering to a low carbohydrate, high protein diet with frequent feedings.

Stress is a highly personalized phenomenon that differs for each of us. Consequently there is no single "stress reduction" diet or "stress formula" vitamin preparation that can reasonably be expected to be effective for everyone. It is true that the requirements for certain vitamins and nutrients may be increased during certain types of stress. One of the earliest methods of evaluating the response to stress was by measuring the degree of depletion of ascorbic acid (Vitamin C) in the adrenal cortex. Pineapples may be a good source of Vitamin C, but there is no good evidence that Vitamin C supplementation bestows any stress-reduction benefits. A few years ago a major pharmaceutical company manufactured a brand of vitamins with a name and associated advertising which clearly implied "anti-stress" benefits. It was subsequently prohibited by the FDA from making such representations. Nevertheless, a variety of comparable claims are still being suggested in promotional efforts for similar products as well as certain foods and diets.

"The sad thing about most diets is they do so much for the will power and so little for the waistline."
— Grand Ole Opry, NBC

The Carbohydrate-Depression Connection

Patients with hypoglycemia, or low blood sugar, frequently complain of fatigue, depression and a craving for carbohydrates. These symptoms are most apt to occur or intensify in the late afternoon or evening, when there is less sunlight, or during the premenstrual period. In some instances, this results in intermittent increases in weight due to overeating. Similar symptoms occur at monthly intervals in patients suffering from premenstrual syndrome (PMS) and annually in seasonal affective disorder (SAD) during late fall and winter months. Lack of exposure to bright light is responsible for SAD in susceptible individuals and symptoms can be alleviated by exposure to prolonged periods of ultraviolet light during the winter months or moving to a latitude where daylight lasts longer. It's of interest that the symptoms of PMS are also often worse in winter months and that carbohydrate craving is common in this condition as well as SAD, with intensification when sunlight hours are less.

Researchers now suspect that all three of these cyclic disorders may have a common origin related to altered melatonin and serotonin secretion. Melatonin levels are about five times higher late at night when compared to measurements obtained during a bright day since sunlight inhibits secretion. In certain patients deprived of adequate sunlight, melatonin levels rise producing symptoms similar to those seen in SAD, in PMS, and patients with carbohydrate craving-obesity. Injections of melatonin in healthy subjects reportedly can cause sleepiness and difficulty in concentration as well as depression. In SAD patients, they increase symptoms of depression. In Tromso, Norway, there is no sunlight from November 25 until January 21. This two-month sunless period is called by the local inhabitants "the murky time." During this period almost a quarter of the population have complaints related to insomnia, depression, and fatigue. All

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The Carbohydrate-Depression Connection

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of these seem to be a consequence of altered melatonin secretion.

Serotonin is a brain neurotransmitter which also has important effects on mood and sleep and is influenced by carbohydrate intake and blood sugar levels. In normal individuals, when serotonin levels rise, the desire for carbohydrate consumption and sweets is suppressed. Rats injected with serotonin-releasing drugs avoid carbohydrates. One of these, fenfluramine, which stimulates serotonin, has been found to be useful in relieving symptoms of all three disorders in reducing carbohydrate craving and depression. Conversely, antidepressant and other serotonin blocking medications often promote carbohydrate consumption and weight gain. The prevalence of these various disorders is not known, but may be higher than suspected. SAD was considered to be relatively rare, but a recent survey of New Yorkers revealed that almost half reported weight gain and a third required extra sleep during winter months. Manic depressive problems also may be related to length of exposure to sunlight. One study of manic behavior occurred during days when there was maximal sunlight. Lithium, which is used to treat manic depressives, may owe its efficacy to its ability to decrease sensitivity to light.

The close links between carbohydrate craving, premenstrual syndrome, and seasonal affective disorder are intriguing in view of their similar symptomatology and favorable response to the same therapeutic approaches, including antidepressants and dietary changes. It is quite likely that other brain neurotransmitters also play an important role in these complex and apparently interrelated disorders.

"Most men hope that their lean years are behind them; women hope that theirs are ahead."

— Anonymous

Stress, Heart Attacks And Sudden Death

Most sudden deaths occur in patients who have had a prior heart attack. In many of these, emotional stress appears to be the precipitating factor. Studies have also been conducted in survivors of initial heart attacks to determine whether they had experienced "an acute emotional disturbance" during the 24 hours preceding the event. Extensive interviews of 117 such patients revealed tht more than one out of five admitted having been in an "intense emotional state" before the onset of symptoms. The majority had been in this condition for less than an hour, but some had been in a state of panic for up to 24 hours. None of the victims had any history of previous heart problems, strongly suggesting that emotional stress triggered the event. The most commonly reported symptoms were anger, acute depression, fear, anticipatory excitement, and grief. These emotional states were ususally the result of interpersonal conflicts, public humiliation, threat of or actual marital separation, bereavement, or business failure. One hospitalized patient experienced a life-threatening disturbance in heart rhythm whenever his wife left after visiting him because he feared that she would be mugged on her way home.

More than one out of four sudden deaths occur on Monday, the day most people return to work after a presumably relaxed weekend. In some surveys, sudden death and heart attacks on Monday were as high as 43 percent of those occurring during other days of the week. Saturday tends to be the next most frequent day. Both of these days represent periods of time that are characterized by abrupt changes in work and personal activities that would be associated with increased emotional arousal. If such factors were not involved, one would expect a more even distribution of heart attacks and sudden death throughout the week.

"Stress is really an integral part of life. We set our whole pattern of life by our stress end-point. If we hit it exactly we live dynamic, purposeful, useful, happy lives. If we go over, we break. If we stay too far under, we vegetate."

— Dr. Howard A. Rusk

Sudden Death During Exercise

The current exercise craze to prevent heart attacks probably started as a result of a study reported 25 years ago of 31,000 London bus drivers and conductors. It was noted that the conductors had a lower incidence of heart attacks and this was attributed to their relative increased physical activity. However, a subsequent review of the data suggested that they were probably a healthier group to begin with. Although a variety of reports suggest that sedentary men are at greater risk for heart attacks, regular exercisers die suddenly much more frequently during short periods of vigorous activity than the remainder of the time when they are less active. In one study of 18 cases of death associated with running, fourteen had been regular exercisers for at least a year. Cigarette smoking, hypertension, and elevated blood cholesterol seemed to be more important related factors than a sedentary lifestyle. Emotional stress and extreme Type A behavior are also important influences.

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Sudden Death During Exercise

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One compelling example of the role of stress may be found in the report of a young executive who died suddenly while jogging, although he had been running almost daily for ten years. He had annual checkups and periodically saw a cardiologist for exercise stress testing, all of which confirmed a very healthy heart and excellent exercise tolerance. The evening before, he had received a call from his estranged wife who told him that she wanted a divorce. He was quite upset and had little sleep that night. It was only natural for him to go on his long morning run, which he viewed as an effective stress-reduction measure. Neither his previous exercise habits nor his excellent stress test performances protected him from a cardiac arrest at the age of 27, on a track he had faithfully pounded for years.

In such situations, sudden death appears to be due to an excessive release of adrenalin and similar stress-provoked hormones which produce lethal disturbances in heart rhythm such as ventricular fibrillation. Adrenalin can also lower blood potassium which facilitates the development of these arrythmias. Studies of sudden death in healthy, non-smoking squash players, suggest that even a sudden reduction in blood potassium may be a factor, despite normal levels. Although there is evidence that regular running may have cardio-protective effects, this does not appear to be entirely due to aerobic conditioning. Psychological and behavioral alterations that accompany such activities also play an important role. Most of the benefits of jogging can be reduplicated by simply taking a brisk walk for 45 minutes, three or four times a week. For the intense Type A individual who constantly strives to improve performance records, running could prove lethal, since competitive Type A's appear to be particularly prone to sudden death.

"Always behave like a duck — keep calm and unruffled on the surface but paddle like the devil underneath."

— London Daily Express

Stress and Low Back Pain

Most of us have been led to believe that low back distress stems from some structural abnormality of the spine. A herniated disc, arthritic spur, or perhaps incorrect alignment of the vertebral bodies presumably "pinches" a nerve. This can produce pain and muscle spasm, which further perpetuates the problem in a vicious cycle by causing further pressure on the nerve. The logical cure would seemingly be surgery or possibly physical manipulation to relieve the pressure. However, this conventional concept has come under increasing attack for numerous reasons.

New research suggests that most low back pain is primarily a stress-related "Disease of Civilization." Support for this comes from numerous studies demonstrating that relief is much more apt to come from exercise and stress-reduction approaches, rather than the usual recommendations of bed rest and surgery.

"Not every end is the goal. The end of the melody is not its goal, and yet if a melody has not reached its end, it has not reached its goal." (a parable)

— Nietszche

What Is Type A Behavior

Type A behavior is a complex, overt behavioral pattern that is best identified or measured by personal observation of the individual. Some of the characteristic activity patterns include:

1. Self-imposed standards that are often unrealistically ambitious and pursued in an inflexible fashion. Associated with this is a need to maintain productivity in order to be respected, a sense of guilt while on vacation or relaxing, an unrelenting urge for recognition or power, and a competitive attitude that often creates challenges even when none exist.
2. Certain thought and activity styles characterized by persistent vigilance and impulsiveness, usually resulting in the pursuit of several lines of thought or action simultaneously.
3. Hyperactive responsiveness often manifested by a tendency to interrupt or finish a sentence in conversation, usually in dramatic fashion, by varying the speech, volume, and and/or pitch, or by alternating rapid bursts of words with long pauses of hesitation for emphasis, indicating intensive thought. Type A persons often nod or mutter agreement or use short bursts of laughter to obliquely indicate to the speaker that the point being made has already been anticipated.
4. A tendency to have unsatisfactory interpersonal relationships due to the fact that Type A individuals are usually self-centered, poor listeners, often have an attitude of bravado about their own superiority, and are much more easily angered, frustrated, or hostile if their wishes are not respected or their goals are not achieved.
5. Increased muscular activity in the form of gestures, motions, and facial activities such as grimaces, gritting and grinding fo the teeth, or tensing jaw muscles. Ofter there is frequent clenching of the hand or perhaps pounding with a fist to emphasize a point. Fidgeting, tapping the feet, leg shaking, or playing with a pencil in some rhythmic fashion are also seen.

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What Is Type A Behavior

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6. Irregular or unusual breathing patterns with frequent sighing, produced by inhaling more air than needed during speaking and then releasing it explosively during the middle or end of a sentence for emphasis.

Type A individuals tend to be very competitive and are usually in a rush. Consequently they eat, talk, and do most other activities quickly. They generally try to do too many things at once, are frequently preoccupied with what they are going to do next, and tend to have few interests outside their work.

Identifying and rating the severity of Type A beha vior requires considerable expertise. It is best accomplished by a videotaped personal interview in which a trained investigator uses standardized challenges designed to provoke the activities noted above. The answers to the questions in the interview are not as important as the behavior which is exhibited in making the response, and this can be carefully reviewed and rated later on the videotape by a panel of experts. However, this makes large scale studies time consuming and costly. A variety of questionnaires have been devised to detect such aspects of Type A behavior as competitiveness, ambition, impatience, hostility, preoccupation with work, or a constant sense of time urgency. However, many Type A individuals are unaware of their behavioral excesses or will deny them. Thus, even the most elaborate questionnaires only have an accuracy of 60 or 70 percent when compared to the videotaped interview approach. However, they may be useful for screening purposes.

"There are two types of doers: those smart enough to know it can be done, and those too foolish to know it cannot."

— Anonymous

Do You Have Type A Behavior?

The following questionnaire was developed by Dr. Ray Rosenman, one of the co-originators of Type A concept:

1. I like to do things quickly, such as eating, walking, talking.

Yes _____ No _____

2, I am hard-driving and feel very competitive about almost everything, and don't really trust most people.

Yes _____ No _____

3. When others take too long to get to the point I usually jump in and finish their sentences to speed things up.

Yes _____ No _____

4. I like to be precisely on time and get irritated at delays or when others are late for appointments.

Yes _____ No _____

5. I often do two things at once, such as opening the mail while on the telephone, or reading or watching TV while eating.

Yes _____ No _____

6. I frequently think of other things ehen people talk to me.

Yes _____ No _____

7. I hate being interrupted and get irritated when waiting in lines or if slow drivers hold me up.

Yes _____ No _____

8. I usually bring conversations around to what interests me.

Yes _____ No _____

9. I am very aggressive about getting what I want.

Yes _____ No _____

10. Compared to my friends I lose my temper easily and usually show it.

Yes _____ No _____

To score this quiz, give yourself 1 point for every Yes answer. 4 points is about average and more than 5 or 6 suggests a tendency towards Type A behavior. This is especially true if you answered yes to questions 1, 2, 4, and 10.

It's important to remember, however, that the only accurate way to rate Type A behavior is by the interview technique, which is evaluated more on the exhibition of typical activities and traits during the question and answer period rather than the actual answers themselves. However, this quiz can provide a useful screening purpose since high scores might suggest the desirability of more specialized testing in persons who may be at increased risk.

"Don't be discouraged by a failure. It can be a positive experience. Failure is, in a sense, the highway to success, inasmuch as every discovery of what is false leads us to seek earnestly after what is true, and every fres experience points out some form of error which we afterwards carefully avoid."

— John Keats

Reducing Stress and Type A Behavior

You can learn to significantly reduce Type A behavior and its harmful consequences. However, this requires a willingness to acknowledge its presence, an awareness of how it affects you, and a determined commitment to make certain changes in your daily activities. Learning how to manage time is essential. Special attention should be directed to providing for "time out" and leisure pursuits rather than impulsively doing many things that have a low priority. This requires a great deal of self control and personal observation about ingrained habits such as always being in a rush and viewing everything as a challenge. You must also learn how to avoid people and situations that tend to provoke Type A reactions.

There are a variety of ways to learn how to develop a less hurried and competitive way of life. If you find yourself always passing a slower moving car (even when you're not in any hurry), punish yourself by making three right turns starting at the next block, so that you end up back where you were. If having to stand on line irritates you, practice going to a busy supermarket and get on the end of the longest line. Then try to find little ways to make the time pass in an enjoyable rather than irritating fashion, either by day dreaming, studying your surroundings more carefully, or striking up a pleasant conversation with a nearby stranger. By using such "stress inoculation" techniques you'll soon realize that many ingrained hurried, hostile and competitive activity patterns usually do not really serve any useful purpose.

Type A responses may be normal and even quite suitable for some situations. More often, however, they represent an inappropriate and persistent repetitive reaction pattern which could prove lethal.

Monitor Your Own Emotional and Physical Responses to Stress

It may also be helpful to be sensitive to and monitor your own emotional and physical responses to stress. These vary on an individual basis and include anxiety, depression, insomnia, rapid pulse, sweaty palms, increased muscle tension, headache, nervous fidgeting, digestive complaints, itching and rashes, etc. By developing an awareness of situations or peorple that tend to induce these reactions, one can attempt to prevent or avoid such factors. Appropriate medications can effectively diminish unpleasant stress-related symptoms, which are usually sources of furthr stress themselves, thus setting up a vicious cycle. Tranquilizers, sedatives, hypnotics, and antidepressants all may have specific indications in certain patients. In others, drugs which block the action of adrenalin (beta-blockers) prevent palpitations, public speaking and examination jitter and other stressful reactions. Stress management and relaxation techniques can also provide learning skills that provide similar benefits. For many individuals, regular running or aerobic exercise is a good way to work off Type A tensions and stress. Others find that short periods of meditation, practicing yoga, or watching a soothing videotape such as this, produces a feeling of inner calm and relaxation that can be recreated whenever needed to reduce harmful stress responses.

Stress is an unavoidable consequence of life. However, you can master it and make it work for you. You can learn how to be productive, rather than self-destructive. Too often we manufacture our own stress simply because it is not the external event but our perception of it and our inappropriate responses that are at fault. The solution lies in identifying and avoiding major sources of stress, becoming aware of their emotional and physical effects, and utilizing those stress-reduction strategies that work best for you.

"The most important thing I've learned through the years is that you'll never fully enjoy anything unless you share it with others less fortunate."

— Thomas J. Watson

What Is a Heart Attack?

The term "heart attack" is often used to refer to a variety of situations. Strictly speaking, the term denotes permanent damage or destruction of heart muscle tissue, (myocardial infarction). This is usually the result of an occlusion of a coronary artery by a clot (coronary thrombosis), causing an interruption of the flow of blood to the affected tissue. However, myocardial infarction can occur in the absence of coronary thrombosis, particularly during severe stress, because of the direct damaging effect of chemicals secreted at the endings of nerves which supply the heart muscle. Similarly, coronary thrombosis can occur without myocardial infarction, since nearby collateral vessels are often able to supply adequate nourishment to the injured area. The term "heart attack" is also used to describe sudden death due to a severe disturbance in heart rhythm. In such instances, there is a severe and protracted fall in blood pressure, depriving both the heart and vital centers in the brain from their blood supply. Although death may be of cardiac origin, there may be no specific evidence of myocardial infarction or cardiac damage. Many patients use the term "heart attack" to refer to episodes of severe chest distress

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What Is a Heart Attack

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or angina in which there is a temporary interference with the blood supply to the heart. This is due to prolonged spasm of the coronary vessels which causes a temporary reduction in the flow of blood to heart muscle, but does not result in any permanent tissue damage. In each of the above situations, however, it seems clear that stress can play a very significant causative or aggravating role.

"My life has no purpose, no direction, no aim, no meaning, and yet I'm happy. I can't figure it out. What am I doing right?" — Charles M. Schulz

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Stress and Heart Attacks

The appreciation that emotional factors could have a powerful influence on the heart is certainly not new. Aristotle and Virgil taught that the heart rather than the brain was the seat of the mind and the soul. Similar beliefs can also be found in ancient Hindu scriptures and other Eastern philosophies. 2000 years ago, the effect of stress on the heart was recognized by Celsus, who noted that "fear and anger and any other state of the mind may often be apt to excite the pulse." Similarly, Sir William Harvey, best known for his discovery of the function of the heart as a pump, wrote in 1628, "every affection of the mind that is attended either with pain or pleasure, hope or fear is the cause of an agitation whose influence extends to the heart." The conviction that emotional stress could cause a fatal heart attack was expressed by John Hunter, the 18th century physician whom many consider the father of modern surgery. He suffered from periodic attacks of angina, and being a keen observer, complained, "my life is in the hands of any rascal who chooses to annoy and tease me." That statement proved to be prophetic, since a heated argument with a colleague did cause a sudden fatal heart attack. Napoleon's physician, Corvisart, wrote that heart disease was due to the "passions of the mind," among which he included such forms of stress as anger, madness, fear, jealousy, terror, love, despair, joy, avarice, stupidity and ambition.

Our current recognition of the relationships between personality, stress and heart attacks stems almost entirely from the development of the concept of Type A behavior in the early 1950's. It had been observed that in Northern Italy four out of five heart attacks occurred in men, and in the United States, the ratio was two out of three. However, in Mexico and southern Italy, men and women had the same heart attack rates. These puzzling differences were obviously not due to dietary or other environmental influences. On further analysis, they appeared to be related more to social, cultural, and behavioral factors. Most of these characteristics or traits could best be described as having the attributes of "maleness." Coronary prone Type A behavior is now recognized to be as significant a risk factor for heart attacks as elevated cholesterol, cigarette smoking, and hypertension. Over the past few decades, numerous research findings have steadily uncovered the complex mechanisms involved in the stress/behavior-heart attack connection. As a result, it has been possible to develop effective strategies and drugs to both prevent and treat heart attacks due to stressful behavioral and environmental influences.

One hundred and twenty-five years ago, von Dusch, a German physician, first called attention to the fact that excessive involvement in work and similar types of behavioral patterns appeared to be the hallmark of heart attack victims. A decade or so later, Sir William Osler succinctly, but accurately, described the coronary prone individual as a "keen and ambitious man, the indicator of whose engines are set at "full speed ahead." In the 1930's psychiatrists noted that heart attack patients tended to have strongly aggressive behavioral patterns, or were often authoritarian with an intense drive to achieve unrealistic goals. The crucial role of environmental psychosocial stress became apparent after World War II and was thought to be responsible for the rising incidence of heart attacks in England. The current epidemic of coronary heart disease in the United States began about the same time and had a peculiar geographical distribution. Deaths from heart attacks were appreciably higher in the Northeast industrialized states. Furthermore, over the succeeding years, it was evident that shifting patterns of increased cardiac death rates throughout the country closely coincided with locations which had also experienced a similar increase in industrialized and manufacturing activities. We now have abundant evidence of the important causal links between job stress and heart attacks. That relationship is so well acknowledged, that in New York City or Los Angeles, any police officer who has a heart attack, *even while on vacation,* is assumed to be work-related and is compensated accordingly.

Thus, it increasingly appears that heart attacks are largely a "disease of civilization." Coronary heart disease can result from internally generated stress, as in Type A behavior, or stressful psychosocial environmental problems in the workplace and at home. However, it is the combination of the two that is particularly lethal. Often, each of these factors can significantly aggravate or contribute to the other, creating a vicious cycle. Our current fiercely competitive socioeconomic climate leads to an intensification of hostile, aggressive Type A behavioral characteristics. While such responses may provide survival advantages in the world of commerce, their associated increased harmful nervous system and hormonal effects often result in increased rates of hypertension, strokes, and heart attacks.

Book Reviews • Meetings and Items of Interest

Book Review

The Body in Time, Rose, K.J.R., John Wiley and Sons, N.Y., 1988, 237 pp. $19.95.

It has long been observed that the body is governed by a series of biological clocks. Some of these operate on a 24-hour basis and are referred to as circadian rhythms from the Latin words *circa* (about) and *dies* (a day). Predictable fluctuations in body temperature, heart rate, muscle strength, certain hormone levels and even mood and memory have been shown to follow a circadian or 24-hour rhythm. There are other rhythms that appear to follow a monthly pattern, such as the menstrual cycle, or have seasonal variation based on the number of daylight hours, as in Seasonal Affective Disorder or SAD syndrome. These have important clinical implications since it may influence the efficacy of drug therapy, severity of disease symptoms, allergic reactions, pain perception, etc. For example, it has been observed that heart attacks, stroke and sudden death are more likely to occur in the early morning hours between 6 and 10 a.m. than 7 to 11 p.m. This is thought to be related to an increased output of adrenalin and other stress-related hormones known to cause disturbances in heart rhythm, damage to heart muscle, and greater platelet "stickiness" and other factors that accelerate the clotting process and predispose to vascular occlusion and strokes.

Circadian and other rhythms also govern the activity of enzyme systems, bacterial growth and virulence, immune system function, and the absorption and metabolism of drugs, foods and nutrients. A knowledge of such oscillations can be important in deciding when to administer antibiotics or cardioprotective drugs so that they provide maximum benefits. This book discusses this and other issues in detail. It is written in a clear and attractive fashion, is very well referenced, and scientifically accurate.

It is regrettable that the author did not devote any discussion to the subject of "time urgency" which is such an important characteristic of Type A behavior (also known as "the hurry sickness"). Such individuals appear to have a distorted perception of time and space, and their self-imposed time urgent behavior may contribute to their increased production of harmful hormones that cause cardiac injury.

Actually, there is nothing new about this phenomenon, and as noted in *Ecclesiastes*: "To everything there is a season and a time to every purpose under the heavens."

Meetings and Items of Interest

Oct. 11-15, American Academy of Child and Adolescent Psychology, New York, NY. (202) 966-7300.
Oct. 23-25, The Ecology of Work: Improving Productivity and the Quality of Work Life. Toronto, Ontario. Contact Tom Chase, R.R. #2, Box 44a, Northwood, NH 03261.
Oct. 26-29, Academy of Psychosomatic Medicine, Las Vegas, NE. Academy of Psychosomatic Medicine, 5824 N. Magnolia, Chicago, IL 60660. (312) 784-2025.
Oct. 27-30, Fifth Annual Meeting of the Society for Traumatic Stress Studies "Learning from Victim/Survivors: Insights for Prevention, Intervention, and Care," San Francisco, CA. The Society for Traumatic Stress Studies, P.O. Box 1564, Lancaster, PA 17603.
Nov. 2-4, Cardiac Wellness and Rehabilitation, St. Thomas, VI. Medical Education Resources, (800) 421-3756.
Nov. 2-4, Neuroimmunology VI: The State of the Art, Chicago, IL. University of Chicago School of Medicine. (312) 702-1056.
Nov. 2-5, 1989 23rd Annual Convention of the Association for Advancement of Behavior Therapy, Washington, DC. (212) 279-7970.
Nov. 4-5, Teaching Humanistic Medicine: An Exploration of Goals, Techniques and Experiences, New York, NY, NYU Post Graduage School. (212) 340-5295.
Nov. 5-19, Topics in Psychopharmacology and Biological Psychiatry Moscow, Samarkand, Tashkent, Leningrad, USSR. Professional Seminar Consultants, Inc. (800) 365-5357.
Nov. 9-11, Addiction Medicine: State of the Art California Society for the Treatment of Alcoholism and Drug Addiction, San Diego, CA. (415) 428-9091.
Nov. 17-20, 26th Annual Psychiatric Institute on Group Behavior and Group Leadership, Peachtree City, GA, Emory University School of Medicine. (404) 727-5695.
Nov. 19-21, Second Annual International Montreux Congress on Stress, Montreux, Switzerland. American Institute of Stress (914) 963-1200.
Dec. 3-7, International Round Table on Silent Myocardial Ischemia. For detailed information contact the Congress Secretariat, Tel Aviv; contact Kenes Ltd., P.O. Box 50006, Tel Aviv 61500.
Dec. 7-9, Cardiac Wellness and Rehabilitation, Acapulco, Mexico. Medical Education Resources (see above for details—same as August 4.)
Dec. 10-30, Wellness and Its Relationship to Health Promotion, Protection and Disease Prevention (Cruise: Rio De Janeiro to Buenos Aires, Argentina). Seminars and Symposia Inc. (212) 517-7520.
Feb. 25-Mar 2, 1990, American Journal of Health Promotion, Cancun, Mexico. (313) 258-3754.
Mar. 29-Apr. 1, 1990, American Society of Contemporary Medicine and Surgery (Stress and Hypertension), Phoenix, Arizona.

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