

The Newsletter of THE AMERICAN INSTITUTE OF STRESS

Number 8, 1988

Aging, Alzheimer's, and Abnormal Responses To Stress

Although aged animals often show normal adrenocortical responses to stress, those who were subjected to chronic stress exhibited impairment in this ability. Chronic stress accelerates the aging process in experimental animals and also causes an increase in age-related lesions in the hippocampus. The hippocampus is thought to be involved in regulating glucocorticoid secretion by inhibiting the production or release of these hormones during stress. When hippocampal function is impaired, a vicious cycle of adrenal hormone release and neural damage ensue. Stress increases glucocorticoid levels and cerebral blood flow but reduces the utilization of glucose in the brain, making it more susceptible to a variety of lesions. In Alzheimer's disease, similar hippocampal degeneration also occurs, and there is a corresponding decrease in cerebral glucose utilization and blood flow similar to that observed following chronic stress. Further support comes from recent research in patients with moderately severe Alzheimer's disease. Following the administration of intravenous glucose, there was a significantly higher increase in cortisol levels in the Alzheimer's patients when compared to matched controls. Computerized tomog-

raphy studies confirmed a significant correlation between hippocampal atrophy and related cortisol levels. It was suggested that patients with dementia and cognitive deterioration may be more likely to show abnormal stress-related cortisol responses and that these are due to changes in the hippocampus. Patients with mental deterioration due to small strokes rather than Alzheimer's did not demonstrate such abnormal cortisol responses unless there was evidence of lesions in the hippocampus. Since experimental lesions in the hippocampus can be induced in the laboratory by chronic stress, strategies that might prevent or reverse such changes might offer promise for patients with Alzheimer's.

AIDS, Emotions, And Immunity

Evidence is accumulating that appears to confirm strong links between stress, emotions, and the clinical course of AIDS. Much of the information that has been gathered suggests that the same psychological factors associated with better survival among cancer patients also apply to those infected with the HIV virus. This appears to be particularly true in homosexual men in the early stages of infection. Immune system function is better in those who are able to openly express their anger and emotions and have a strong sense of denial about their condition. As in many cancer patients, maintaining an aggressive, fighting spirit also appears to be associated with longer survival. A University of Miami School of Medicine team of
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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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Aids, Emotions, and Immunity (Continued from page one)

researchers studied 39 homosexual men who had recently been diagnosed as having the AIDS virus. Immune system function, as assessed by the activity of natural killer cells, and the response of white cells to chemical stimulation, were poorest in those who reported more depression, anxiety, and loneliness. Individuals who were rated as having more vigor, anger, venting of emotions and denial had the best immune system responses. In addition, in this latter group, levels of immunoglobulins, which are frequently abnormally high in AIDS infection, tended to be lower. A variety of anecdotal reports note instances where AIDS victims with complications of Kaposi's sarcoma and pneumocystis lung disease have had spontaneous remission from these usually progressive and fatal disorders simply by changing and controlling their lifestyles to reduce stress.

As a consequence, there has been considerable interest in exploring the effects of a stress reduction program as an adjunct to conventional treatment. In one such attempt, 64 recently diagnosed HIV-positive males attended eight two-hour weekly sessions as well as an all day retreat. They learned relaxation techniques (yoga and meditation), received instruction and training in nutrition and exercise, and additional information on how to recognize and manage stress. The results were somewhat disappointing in that no improvement in immune function was detected in terms of an increase in the number of T-helper cells or in the ratio of T-helper to T-suppressor cells. However, those who were in the training group reduced the number of their sexual partners from 1.37 at the start of the program to

0.50 at the conclusion. In contrast, the control group, who did not attend the stress reduction educational sessions, increased their average number of sexual partners from 1.09 to 2.29 during the same period. The reasons for this dramatic change in sexual behavior needs to be explored further. The researchers suggested that "stress management techniques may substitute for frequent sex as a way of reducing stress among these men." In another unrelated study, early findings suggest that newly diagnosed HIV-positive men who engage in a ten-week exercise program do show improvements in immune system function similar to those that have been observed with the use of the AIDS drug zidovudine (AZT).

"The farther backward you can look, the farther forward you are likely to see."

— Sir Winston Churchill

Listening for Stress In Plants?

Stress is an unavoidable consequence of life on earth. Thus, it is not surprising to learn that it can be detected in flora, as well as fauna. Scientists have now reported that the stress of prolonged drought may cause plants to emit high pitched sounds as their cell structure breaks down due to a lack of water traveling from the roots to the leaves. While the frequencies of these emissions are well above the range of human appreciation, researchers from the Department of Agriculture have been using electronic devices for more than four years to detect the effects of such stress in corn and other plants. When adequate moisture is present in the soil, it flows upwards carrying other nutrients through internal water conduits because of osmotic pressure differences. If the soil lacks enough water, the tension becomes excessive causing these tubes to fracture. This produces certain characteristic high pitched emissions. Some scientists believe that there may be a connection between such noises and the flocking of some insects such as beetles to drought damaged trees and plants. Humans cannot detect sound more than 20 kilohertz and these values are in the 100 kilohertz range. It is known that insects may be attracted by certain influences unappreciated by humans dealing with very minute changes in color and scent. Whether or not they are also sensitive to these high frequency sounds seems likely but has not been proven conclusively. However, experiments are now under way with plant and tree seedlings deprived of water to record their sounds and determine whether or not they are capable of attracting various insects.

Decibeldome Stress

The 1987 World Series between Minnesota and St. Louis directed attention to the possible stressful effects of excessive levels of spectator noise. Peak levels of 118 dB have been reported in the Hubert H. Humphrey Metrodome — home field of the Minnesota Twins. To investigate this further, a recent *Journal of the American Medical Association* article reported on the second game of the World Series during which a calibrated measuring device recorded noise levels throughout the 3½-hour game. The stadium was at capacity with more than 55,000 spectators and the noise exposure was measured from the center field upper deck, about ten rows from the top. The roof of the Metrodome is covered with fabric and Teflon and is designed to absorb some of the noise generated in the 70 million cubic feet below. However, the monitoring showed average levels of close to 100 dB, with a range from 80 to 125dB. Long-term hearing loss may result from repeated exposure of this nature. In addition, since reports have linked exposure to noise, hypertension, and fatty diets with heart attacks, the senior author, a physician, suggested that those at particular risk should consider some hearing protection when attending sporting events at facilities such as this.

"You are no more to concern yourself how the world talks of you, but how you are to talk to yourself."

— Michael De Montaigne

More on Computerized Psychotherapy

As noted in prior issues of the Newsletter, interactive computerized programs have been developed to help patients deal with "stress" and its associated problems. Critics point out the possible inherent dangers of such an approach which may not be able to distinguish between a potentially dangerous psychotic individual and one suffering from a simple anxiety neurosis. Many feel that the most important aspect of treatment involves the therapist's empathy and personal rapport with the patient which a computer could never duplicate. However, others claim that the benefits of intimacy do not necessarily have to come from another human being but also can be provided by pets and possibly even something inanimate, like a computer that could provide an interactive relationship.

In one approach developed by Harvard psychotherapists, the patient records unstructured self-talk for an hour or so, much as would be done in a psychotherapy session. Subsequently, the tape is played back by the subject who then begins to type

what are considered the most significant parts of the "conversation" into a computer terminal. The program is specifically designed to recognize emotionally charged words and phrases and will interrupt at appropriate points to ask "would you like to talk more about this?" If the reply is "Yes," the subject is instructed to continue talking into the tape recorder which is then automatically activated. Every attempt is made to simulate the presence of a concerned and caring therapist. Thus, if the individual talks of being sad, the video monitor will display the message, "GOOD. WE ARE LISTENING TO YOU TALK ABOUT YOUR SADNESS."

In studies where patients received half of their therapy from one of the developers of the program and half from the computer, reaction to the program was quite favorable and many actually preferred it. "Two patients who had recently lost someone close to them even confided this fact to the computer . . . but not to its human counterpart." Other studies also confirm that many individuals prefer machines to humans when it comes to confiding. Much more accurate and extensive information may be obtained about sexual problems, gynecological health, and alcohol intake because of less personal embarrassment. In one hospital study in Scotland, alcoholics admitted to drinking 50% more alcohol to the computer than they had reported to their human therapists.

Another area in which computers may excel is in the ability to predict suicide. Often, such ideations and tendencies are repressed or not expressed in a live interview, but an interactive computerized interview can skillfully ferret out such information by making appropriate but oblique inquiries that produce a more accurate picture. Future advances in computer technology may provide still further enhancements. Advances in voice recognition and vocal synthesis suggest that it will soon be quite feasible for audible conversations to take place between patients and computers. It will also be possible to allow patients to choose between a male or female therapist, and select one with an American, English, Southern, Spanish, or Eastern European accent, etc.

Computotherapy is likely to ride the crest of the tremendous tidal wave of self-help activities currently flooding the United States. Admittedly, the thought of a suffering human being sitting alone somewhere, spilling his or her heart out to a little metal box may seem bizarre. However, the cost effectiveness and growing acceptability of such an approach suggest that it may become commonplace in the very near future.

"An intellectual is someone whose mind watches itself."

— A. Camus

Finding a Different Name For Stress Management

In many instances, the term stress is employed as a euphemism. It's a lot more palatable or socially acceptable to talk about a "stress related" problem than alcoholism or drug addiction. On the other hand, one large corporation discovered that offering employee assistance under the heading of Stress Management Training was really not particularly attractive to workers. The coordinator of health and fitness at Conoco found that those who would be most likely to benefit from stress management programs were the ones least likely to attend such weekly sessions. "We started out with the standard stress-management classes on topics such as relaxation techniques, identifying stressors, and stress-risk factors; but frankly, we found that they were not very palatable to our population. People are so busy that they barely have time to cook for their families, let alone attend a stress-management class once a week. Also, people hear so much about stress from the media that the whole concept of stress management has become boring." To get around this problem, major stress-producing areas in peoples' lives were identified, and classes were developed to specifically address such areas as "Disciplining Children," "Time Management," "Assertiveness Training," and "Communicating With Spouses." One hundred and fifty people registered for the class on Assertiveness Training, whereas previously an average of 30 had signed up for stress management and only about half of these actually showed up. "People would go home after our traditional stress-management class and still feel as if they hadn't made any progress . . . Let's face it, stress-management techniques work in theory, but in contemporary society we don't have time to do deep breathing when we come home." Providing employees with specific practical suggestions on how to deal with everyday situations that produce stress seemed to generate much more interest and better results. These included tips on how to communicate more effectively on the job and at home, dealing with the pressures and problems of single parenthood, or learning how to manage time more effectively. Most of the classes were held during lunch periods, or as two-hour weekend workshops, so that little time was lost from work. For the session dealing with the problems of parenthood, the company provided child care to facilitate employee attendance without worrying about arranging for a babysitter. A specific series was designed for working women with topics such as "Job Burnout," "The Superwoman Syndrome," "Osteoporosis," and "Image and Self Esteem." As the coordinator commented, "this works a lot better than telling people to go home and lay on the floor."

Is Stress Similar In Baboons and Bosses?

According to a Wall Street Journal article, when you call your boss a big baboon, "you may have been closer to the mark than you realized." Researchers in Texas studying stress in baboons have found striking similarities with the stress human bosses and workers undergo when a business takeover threatens. "Senior male baboons move from group to group very much like ambitious executives, trying to oust the ruling leader and upsetting established chains of command. When the interloper appears, the community becomes rife with uncertainty, and baboon stress increases." The level of stress appears to be related to the baboons' place in the pecking order. Those at the highest and lowest echelons tend to cope better with the stress of a takeover than Type A, mid-level baboons. Baboon stress is easy to recognize by experienced workers because of characteristic body language responses. "The baboon that scratches in certain places, wipes his brow and yawns needs to sign up for a coping with stress workshop." Just as in humans, the baboons that cope best with stress are the ones that seek emotional backup from other baboons (support groups?). Some top-level baboons manage to fend off raiders by recruiting the assistance of other leaders (white knights?). The study involves about 3,000 baboons located at a 500-acre research site. The researchers also noted that just like humans, some baboons seem to thrive under stress which they view as providing "opportunity and challenge" (entrepreneurs?). There are many other similarities to the stress responses observed in baboons confronted with a rival takeover with those seen when corporate officers are faced with a similar threat. In fact, the author of the article wonders whether corporate raiders might possibly improve their image by passing out bananas.

"If you think you are above other people, you may really be standing all alone." — Anonymous

FINAL REMINDER
First International Congress
on Stress
Montreux, Switzerland.
Nov. 30 - Dec. 4, 1988

Contact American Institute of Stress:
1-800-24RELAX; in NY (914) 963-1200.

Cardiac Arrhythmias Due to Psychological Stress

Psychological and mental stress have been shown to result in elevation of blood pressure, as well as electrocardiographic and isotope imaging evidence of myocardial ischemia. In many instances, patients are unaware of these changes, despite their possible serious consequences. Psychological stress has also been reported to be a risk factor for sudden cardiac death, which usually occurs as a result of ventricular arrhythmia. These effects of stress are most apt to be seen in patients with underlying cardiovascular disease. However, a recent study now confirms that psychological stress can also cause potentially lethal ventricular arrhythmias in patients with no evidence of underlying heart disease. From a group of 80 patients who had life-threatening ventricular tachyarrhythmia, six were identified as having no evidence of underlying structural heart disease although they had been referred for workup because of cardiac arrest or loss of consciousness. Five of the six exhibited or complained of marked psychological stress. Each of the patients demonstrated a recurrent ventricular tachycardia during electrocardiographic monitoring but it was noted that these and other disturbances in cardiac rhythm were much less frequent while sleeping. Electrophysiological testing failed to produce significant changes but abnormalities could be provoked by either exercise or isoproterenol testing. This would appear to support the view that increased sympathetic tone and catecholamine secretion represent the mechanisms responsible for the disturbances in rhythm associated with psychological stress. Based on this, it seemed logical to treat these patients with beta blocker medication to reduce sympathetic tone and the adverse effects of adrenalin and noradrenalin. Beta blocker therapy resulted in a significant reduction in ventricular tachycardia during both ambulatory monitoring and exercise testing. There was a complete elimination of all rhythm disturbances during sleep. Symptoms of palpitations improved but promptly recurred when attempts were made to reduce the dosage of medication. Significant improvement was maintained over the follow-up period which ranged from 29 to 49 months. This report confirms that psychological stress can cause severe and even life-threatening disturbances in heart rhythm in patients without any evidence of cardiovascular disease. Such adverse responses can, however, be successfully reduced or even completely eliminated with beta blocker therapy.

"In an examination those who do not wish to know, ask questions of those who cannot tell." — Sir Walter Raleigh

Blue Collar Hypertension

Twenty-four-hour ambulatory blood pressure monitoring of 120 borderline hypertensives revealed that blue collar workers had higher systolic blood pressures than their professional counterparts, regardless of activity or emotional state. Eighty-two professionals and 43 nonprofessionals wore a monitoring device which recorded blood pressure measurements every 15 minutes during the day and at half hour intervals at night. Participants were instructed to log in a diary their emotional state and the activity they were performing at the time of each reading with a success rate of 50%. Average baseline pressures were 134/89 for the professionals and 136/87 for the nonprofessionals. When they were angry at work, blue collar blood pressures rose 19 mm. compared to an average of just 15 mm. for professionals. When blood pressures were recorded at home, while allegedly in a happy state, those of professionals dropped 6 mm. but there was a rise of 4 mm. in the nonprofessional group. This was interpreted as suggesting that mood may have more of an effect on blood pressure in individuals with relatively lower socioeconomic status. It was also suggested that the variation in blood pressure between the two groups noted when participants were relaxed and happy was related to the kinds of activities engaged in at home. "If you can afford a nice comfortable house to come home to rather than a noisy two-room flat, you may remain more relaxed."

"There is nothing permanent except change."

— Heraclitus

Measuring Type A Behavior In Children

A variety of research reports suggest that Type A behavior may start surprisingly in life and may be detected as early as grade school as evidenced by extreme competitiveness, time urgency, easily aroused hostility, etc. If there is some merit in reducing Type A behavior, then obviously such benefits would be greatest and presumably easier to achieve, the sooner they could be implemented. There are a number of ways of assessing Type A behavior in children, but the most commonly used is the Matthews Youth Test for Health (MYTH). This is a 17-item scale that is used by teachers to rate a child's competitiveness, aggressiveness, and impatience in the classroom. Compared to direct interviews, the advantages of this approach are cost effectiveness, time efficiency, and ease of administration in a standardized fashion. It also avoids self-report problems that may be influenced by age, sex, or (Continued on page 6)

Measuring Type A Behavior In Children (continued from page 5)

cultural and developmental differences. However, these same factors might possibly also influence the teachers' assessments and introduce an element of bias. To investigate this further, a recent research study examined the effect of gender on Type A assessment with the Matthews Youth Test for Health. Four vignettes were produced, each consisting of seven double-spaced typewritten pages depicting either Type A or type B behavior in a boy and in a girl. The vignettes were in the form of observational records of the children's behavior during one day in school and were identical except for the child's name and gender pronoun. Type A's were depicted as acting more aggressively, more competitively, and with more impatience than the Type B's. Overall higher MYTH scores were confirmed in Type A's when compared with Type B's. However, in the type A children, male teachers assigned significantly lower MYTH scores to girls than to boys while female teachers rated them equally. These findings suggest that although overall classification measurements accurately reflect observed behavior, the sex of the child and the teacher may influence specific rating assessments. In this particular study, both experienced and student teachers were recruited but it was not possible to distinguish differences in evaluation abilities based on actual classroom experience.

"All philosophy lies in two words, sustain and abstain." — Epictetus

Noise Stress Raises Blood Pressure

Two separate studies presented at a European conference on hypertension verified that noisy surroundings can elevate the blood pressure. In one laboratory study conducted in Sweden, 13 mildly hypertensive individuals were exposed to broad band noise at 105 dB for 30 minutes. Cardiac output, mean arterial blood pressure, total peripheral resistance, and forearm blood flow were measured before, during, and after this simulation of noise stress. After only 10-30 minutes of exposure, there was a rise in mean arterial pressure and mean total peripheral resistance while cardiac output and forearm blood flow decreased. Some of these alterations persisted long after the noise machine was turned off, suggesting poor cardiovascular adaptive responses. It was suggested that "if repeated often enough, this response could possibly result in the development of structural cardiovascular changes

of importance in the development of essential hypertension." In another study from Italy, prolonged exposure to high noise levels among glass factory workers was found to be associated with increased concentrations of stress-related hormones such as norepinephrine and epinephrine. These same researchers had previously reported a high prevalence of diastolic hypertension among glass factory workers which was closely correlated with length of noise exposure. In the present study, one group of 60 healthy male workers were exposed to noise stress of 90 dBs and 52 to lower (78 dB) levels while at work. Patients with hypertension or cardiovascular disease were excluded. Stress hormone levels were significantly higher in the high noise group. For example, norepinephrine levels increased from a baseline of 1.35 to 2.41 in the high noise group, compared to only 1.49 in the low noise group. The author concluded that the results suggest "that increased stimulation of the sympatho-adrenal system by high and prolonged exposure to noise may lead to an abnormal response of the cardiovascular system which increases the arterial pressure values."

"One of the greatest pains to human nature is the pain of a new idea." — Walter Bagehot

More Compensation for Stress Related Problems

Worker's compensation benefits were originally established to protect workers from loss of wages due to physical injury sustained on the job. Death or disability claims based on emotional stress rising from job dissatisfaction, frustration, mismanagement, or boredom were usually not recognized. All of that has changed in the past few decades. As a recent article points out, even if an employee has a heart attack at home days after a stressful conversation with his boss, the surviving wife may be entitled to the same worker's compensation benefits that the decedent would have received had he lived.

In one Ohio case, an employee had worked for the same company for over 45 years. He was asked by his supervisor to attend a meeting with top management which he believed was for the purpose of discussing a promotion. Instead, he was told that management wanted him to take early retirement. When he inquired as to whether there were any other options, his superiors flatly declined to consider the matter further. However, he didn't like the retirement proposal and neither accepted or rejected it. The meeting ended in a rather abrupt and acrimonious fashion. Following this upsetting confrontation, his wife stated that he came home "under great (continued on page 7)

More Compensation for Stress Related Problems (continued from page 6)

stress, ashen and gray in color, upset and agitated, and subject to physical shaking and trembling." That night he was "unable to sleep," and on the following day was still "upset, agitated, and under stress." In the afternoon he suffered a fatal heart attack while trimming a few bushes around the house. The court joined the majority of other states in ruling that the employee suffered a stress-related heart attack and that his wife was eligible for worker's compensation death benefits. Obviously, "physical contact" injuries are more readily discernible than those which are "stress related" since causal relationships are easier to establish. Nevertheless, the overwhelming weight of authority now holds that "a physical injury occasioned solely by mental or emotional stress, both acute and chronic, received in the course of, and arising out of an injured employee's employment, is compensable under the Worker's Compensation Act."

However, the term stress is considered by many to be too vague for legal application. Stress is an unavoidable consequence of life and is experienced by all of us on almost a daily basis. Therefore, it is necessary to clearly define what kind of mental or emotional stress may be sufficient from a legal viewpoint to justify a claim for compensable injury. Some work environments, like an operating room or air traffic control center are naturally stressful. The nexus between job and stress must be something *unusual* in order for a stress-related injury to be awarded. Although the facts in the Ohio case were clearly unusual, the courts are increasingly awarding compensation benefits for physical injury caused by less obvious or compelling examples of mental stress at work. In addition, there is also an increasing trend towards awards for emotional or mental disturbances (depression, anxiety, phobias, etc.) which result as a consequence of physical injury. In reviewing recent awards, it would appear that the courts are demonstrating greater latitude in acknowledging *unusual* circumstances to support pure mental or emotional stress as contributory causes of physical injury. According to the article, stress will become an even larger issue in the coming years, "not only in workers' compensation but also in negligence litigation against former employers."

"If we have keen vision and feeling of all ordinary human life, it would be like hearing the grass grow and the squirrel's heart beat and we should die of that roar which lies on the other side of silence."
— George Eliot

Stress, Ulcers and Pneumonia In Intensive Care Units

The vast majority of patients in Intensive Care Units show evidence of gastrointestinal bleeding based on sensitive stool tests. The incidence of stress ulcers and frank bleeding is also quite high, particularly in burn patients. As a consequence, prophylactic ulcer treatment is often routine in the Intensive Care Unit, especially since many patients are also receiving drugs that predispose to ulcers or gastrointestinal bleeding. The most popular form of drug therapy consists of antacids and/or histamine type 2 (H₂) blocking agents, (Tagamet, Zantac, Pepcid) which reduce the normal acid content of the stomach. However, this may allow pneumonia causing bacteria to grow in high concentrations.

A recent study found that pneumonia rates in ventilation-assisted patients treated with antacids of H₂ inhibitors was significantly elevated. The results were better in such patients given an anti-ulcer agent (Carafate) that does not significantly reduce gastric acid but works by providing local protection. Out of 130 Intensive Care Unit ventilation assisted patients receiving prophylactic treatment for stress ulcers, 69 were in the antacid and/or H₂ group and 61 were given only the locally acting (sulfacrate) medication. The groups were similar in age, underlying diseases, and severity of acute illness. Both of the drug regimens proved to be equally effective in preventing stress ulcers. However, the incidence of pneumonia was twice as high in the H₂/antacid group, pathogenic gram negative bacteria were isolated much more frequently from tracheal secretions and gastric acidity was comparably reduced. Mortality rates were also 1.6 times higher in these patients when compared to those receiving sulfacrate.

The authors concluded that "in patients receiving mechanical ventilation, the use of a prophylactic agent against stress-ulcer bleeding that preserves the natural gastric acid barrier against bacterial overgrowth may be preferable to antacids and H₂ blockers."

"The silly question is the first intimation of some totally new development." — Whitehead

40-MINUTE VIDEOTAPE AVAILABLE (Handy User's Guide Included)

Re: Stress and the Supervisor,
Advanced Information

See review on back page of this issue.

Book Reviews • Meetings and Items of Interest

Book Review

Mind, Brain, Body, Morton F. Reiser, Basic Books, Inc., New York, 1984, 219 pp. \$22.95.

This book is an attempt to find some common ground between psychoanalysis and neurobiology. Part of the problems that arise in such a project is that these two disciplines use different methodologies, criteria, and even language to evaluate and describe similar processes. The author, who is Chairman of the Department of Psychiatry at Yale University, has a background that is unusually suited for this task. As he points out, "the sheer pace and volume of progress in the basic sciences have overshadowed and overpowered work in the clinical area." This is particularly true in psychiatry where in the past few decades psychoanalysis has given way to drug therapy. It is intriguing to speculate on whether successful psychoanalytic efforts can be tracked by changes in objective neurochemical or neurophysiologic parameters. How are non-physical stimuli, such as meanings and symbols, translated into physiologic events in the brain and body? To be sure, there are obvious neuroendocrine correlates for extreme emotional states such as fear and anger which evoke sympathetic and adrenal responses. Yet, it is obvious that there are also varied patterns of small brain peptide alterations that are less well characterized but which may very well modulate other psychophysiological processes. Essentially, this book uses the stress response paradigm. The nature of the challenge is developed in Part I. Part II, entitled "Mind," reviews cognitive processes involved in the recognition and evaluation of both internal and external sources of stress. Part III, "Brain," deals with the biological realm and cortical and subcortical pathways involved in activation of the stress response. Part IV, "Body," explores the clinical sequelae of stress in various organs and tissues (psychosomatic medicine) and in the brain—psychiatric disorders). Essentially, what the author proposes is a model of major functional psychoses as representing another form of stress disorder in which the brain itself is the target organ. The book is quite pithy and does not lend itself to casual perusal. The diagrammatic material and figures are quite innovative and helpful, but at the same time are, of necessity, complicated as they attempt to delineate the intricate interrelationships between emotional and psychophysiological processes. The case histories provide a welcome relief from the constant concentration often required to follow the author's reasoning. This book provides many more questions than answers. However, some of those questions are intriguingly audacious and most are fascinating. As the author points out, after all, every cell in the body is derived from the same fertilized ovum and each is endowed with a complete set of genes. After differentiation, genes that will not be used by the mature cell are inactivated so that only those that will be involved in special functions (brain, liver, kidney, etc.) become operative. Thus, it is not inconceivable that a functional "dialogue" could exist between all the cells and organs in the body. Heavy stuff, but highly recommended for those with a special interest in the future of neurophysiology and psychiatry.

VIDEOTAPE

Stress and the Supervisor, Advanced Information, P.O. Box 691, Belmont, California 94002. (415) 595-4729, \$495. Worker's compensation claims for job stress have escalated dramatically in the past decade. Of particular concern has been the increase in awards

for mental-mental claims. A review of these cases suggests that they are more apt to involve younger workers, females, and result in higher settlements than non-stress related awards. In some parts of the country, stress management training has now become the leading priority for employee assistance programs. This video goes a long way in explaining this growing trend. It has been produced in a very professional manner and the actors are both credible and convincing. We see a "stressed-out" supervisor whose boss expects an unreasonable degree of performance. Unfortunately, these pressures are, in turn, transferred to the workers under him resulting in considerable resentment and a very stressful work environment for all concerned. There is also constant bombardment by radio commercials and newspaper advertisements, from lawyers who promise relief or at least financial restitution for "the yoke and tyranny of stress on the job." Ultimately, this unleashes a flurry of all sorts of stress-related compensation claims. The video correctly emphasizes the fact that very often management is completely unaware of mental and emotional stress on the job, or that much of it is their responsibility and within their power to correct. This explains why management uniformly denies stress claims more than 95% of the time. The nature of various stressors is discussed and their application to problems in the workplace are explained. The varied types of mental-mental stress claims are also reviewed. The video correctly emphasizes that recognition and awards for such claims vary considerably from state to state, although the trend is to be more liberal. It also emphasizes the increasing liability that now faces corporations which fail to take corrective action or neglect to provide adequate sensitivity training to increase awareness of potential problems. A handy user's guide is included in this very attractive and useful 40-minute presentation.

Meetings and Items of Interest

Nov. 7-11, Teaching Stress Management and Relaxation Skills. Sponsored by La Crosse Exercise and Health Program and the Wisconsin Heart Institute. Inquiries: Trish L. Hutchinson, Executive Director, La Crosse Exercise and Health Program, UW-La Crosse/221 Mitchell Hall, 1725 State Street, La Crosse, WI 54601. Tel. (608) 785-8686.

Nov. 17-20, 35th Annual Meeting of the Academy of Psychosomatic Medicine, "Assuring the Future of Fiscal Survival of Consultation-Liaison Psychiatry and Psychosomatic Medicine," New Orleans, LA. (312) 784-2025.

Nov. 30-Dec. 4, First International Congress on Stress, Montreux, Switzerland. Contact American Institute of Stress, 1-800-24 RELAX; in NY (914) 963-1200.

Dec. 5-11, Hypertension in the Community, International Symposium; Tel Aviv; Contact Kenes Ltd., P.O. Box 50006, Tel Aviv 61500.

Jan. 8-12, 1989, Fourth International Conference on Psychological Stress and Adjustment in Time of War and Peace. Tel Aviv, Israel. Sponsored by the Society for Traumatic Stress Studies. Contact The Secretariat, P.O. B. 50006, Tel Aviv 61500, Israel. Tel. (03) 654571.

Dec. 3-7, 1989, International Round Table on Silent Myocardial Ischemia. For detailed information contact the Congress Secretariat, POB 50006, Tel Aviv 61500, Israel.

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