

The Newsletter of THE AMERICAN INSTITUTE OF STRESS

Volume 2 Number 5, 1989

Mental Stress Tests And Prediction of Cardiovascular Disease

The exercise or treadmill stress test is routinely used for the detection and evaluation of coronary heart disease. However, since emotional, rather than physical stress appears to play a more common and important causative role in real life, numerous attempts have been made to develop "psychological" or "emotional" provocative stress tests that could provide similar predictive benefits. A number of these have been devised, including mental arithmetic problems performed under pressure, playing progressively difficult, competitive video games, creating publicly embarrassing situations, or exposure to disturbing physical stimuli, such as the cold pressor test. The availability of continuous ambulatory monitoring techniques to record blood pressure, pulse, and electrocardiographic changes, has facilitated measurement criteria in a daily life setting. In the laboratory, these and other stress-related parameters such as galvanic skin responses and impedance electrocardiograms have also been employed. Despite the logic and attractiveness of such approaches, there is considerable question about the clinical significance of the results. A recent report confirms earlier studies suggesting that cardiovascular hyperreactivity in the laboratory

shows rather poor correlation with responses seen in everyday life. In this study, both laboratory and ambulatory assessment of cardiovascular reactivity had low test-retest reliability. Month to month changes in test reactivity which were observed in the laboratory were not associated with corresponding changes in the natural environment and the reverse was also noted. For these reasons, many authorities feel that testing for cardiovascular hyperresponsiveness in the laboratory setting should be discontinued since it apparently has no practical or prognostic significance.

(Psychosomatic Medicine, Jan./Feb. 1989)

PET Scanning Produces Portrait of Stress

Unlike CAT and MRI scans, which reveal structural changes in the brain, PET scanning provides a picture of functional alterations. This is accomplished by the injection of radioactive isotopes of oxygen and glucose which are involved in brain metabolism and whose activity and location can be readily detected. Healthy volunteers were studied before, during, and after anticipation of a painful electric shock. It has previously been shown that severe anxiety, such as that seen in panic disorder, is associated with increased activity in certain portions of the temporal lobes of the brain. In this experiment, the subjects were told that they would receive a shock within two minutes of receiving the radioactive tracer and that the longer it took for the shock to come, the more painful it would be. Anxiety was measured by self assessment, changes (continued on page 2)

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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PET Scanning Produces Portrait of Stress

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in heart rate, and galvanic skin response. Corresponding with these indications of a stressful reaction, there was also clear evidence of a concomitant increase in the rate of blood flow to the temporal lobes. These findings appear to confirm that this area of the brain is involved both with normal and pathological anxiety states. Further support comes from other research demonstrating that stimulation of these same sites in apes produces an anxiety state characterized by hypervigilance and altered facial expressions which seem to reflect "arousal, attention, or anxiety." Similarly, patients with temporal lobe seizures often report feelings of fear and anxiety during their attacks.

(*Science News*, 2/25/89)

"There are two classes of disease — bodily and mental. Each arises from the other, and neither exists without the other. Mental disorders arise from physical ones and likewise physical disorders arise from mental ones."

— Mahabharata (Indian sage 2000 B.C.
 quoted by Eysenck)

The Effect of Menstrual Cycle on Mood in Women And Their Husbands

Marked variation in mood and behavior has been reported in females during different phases of the menstrual cycle. Such changes are most marked in women suffering from premenstrual symptoms,

and considerable discussion has been devoted to characterizing the signs and symptoms of the Premenstrual Syndrome (PMS) and their causes. In some instances, violent antisocial behavior has been reported, including murder. Temporary insanity due to premenstrual behavioral changes has been used as a defense. One recent study examined the relationship between the menstrual cycle, social variables (day of the week), and psychological and physical events in nine women and their spouses over a three-month period. All the subjects were evaluated on a daily basis for both negative mood and arousal or irritability. A daily check list was designed to report changes in mood, behavior and physical findings including depression, sadness, irritability, nervousness, friendliness, degree of sensuality, tiredness, fatigue, headache, backache, and various common physical premenstrual complaints, such as breast pain, weight gain, bloating, cramps, etc. The results seemed to support the findings of other menstrual cycle researchers which have questioned the magnitude of the relationship between the hormonal cycle and women's psychological and physical experiences. Unexpectedly, men exhibited significantly higher irritability tendencies during their wives' menstrual periods than the females themselves. Day of the week proved to be a more important factor than the phase of the menstrual cycle with respect to both negative moods and arousal. Feelings of negativity consistently decreased over the weekend for both men and women, indicating the importance of social factors such as job stress. These findings suggest that research, attempting to demonstrate relationships between the menstrual cycle and mood and behavior, must take into account concomitant psychosocial environmental variables which may have a powerful influence.

(*Psychosomatic Medicine*, Vol. 51, 1989)

"If you are pained by any external thing, it is not the thing that disturbs you, but your judgment about it. And, it is in your power to wipe out this judgment now."

— Marcus Aurelius

Stress Reduction Therapy For Hypertension

As in previous reports, the latest national guidelines for the treatment of hypertension again emphasized that non-drug approaches should be the first step. These include weight reduction, salt restriction, and stress-reduction techniques such as meditation and biofeedback. The efficacy of stress-reduction approaches has been difficult to evaluate because of the inconsistency of reported results and the variability of methodologies. In a newly reported (continued on page 3)

Stress Reduction Therapy For Hypertension

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study, a standardized behavioral stepped care treatment for hypertension was evaluated in 51 patients whose blood pressures had been satisfactorily controlled with medication. They were compared with an equal number of matched controls who continued their usual drug therapy. All patients monitored their blood pressures at home and the accuracy of the recordings was confirmed by periodic simultaneous office measurements. Two weekly blood pressure readings were also obtained for a health professional other than the investigators. The behavioral treatment consisted first of systolic blood pressure feedback followed by standardized relaxation procedures. When deemed appropriate, drug dosages were progressively lowered. It was found that medication requirements for the behavioral approach patients declined to levels significantly lower than those receiving regular care. This persisted throughout the followup period for all drug groups combined, although it was most prominent in patients receiving diuretics and or beta-blockers. In addition, the cost of care for all drug groups combined was lower for the patients in the behavioral stress reduction program and these changes were also most evident in patients receiving diuretics and or beta-blockers. Blood pressure levels in all groups were maintained within normal limits throughout the 19-month study. The behavioral treatment approach was well accepted by almost all of the patients, and self-monitoring of blood pressure appeared to be reinforcing and facilitated compliance. These findings suggest that a biobehavioral approach to hypertension can reduce medication requirements without any loss of control of blood pressure regulation.

(*Psychosomatic Medicine*, Vol. 51, 1989)

"No one can make you feel inferior without your permission."

— Anonymous

Stress Increasing In Children

A survey of more than 4,000 Kansas elementary school (kindergarten through third grade) showed that almost half experienced "negative stress behavior." Among the symptoms reported were "headaches, inability to sleep, biting fingernails, worrying about doing poorly in school, stomach aches, and short tempers." According to the Associated Press report, "stress is turning kids into pencil-chewing, teeth-gritting bundles of nerves." Some experts believe that such problems in early elementary

school may lead to "increased teen drug use, sex, and suicide." It was particularly disturbing that these findings were observed in Kansas, a conservative, slow-paced area of the country and that a similar behavioral pattern was found through grade 12 in a survey of 18,000 additional Kansas students. As a leading investigator noted "my feeling is that in larger communities and more populated states, the stress levels of kids are much higher." In addition, "kids are more stressed out today because our society has more stress. It's a reflection of the society in which we live. A lot of people think stress is an adult condition. Well, it's not."

Most experts agree that the leading source of stress stems from problems at home because of domineering parents, broken or unsatisfactory marriages, and increased competitive demands. Many fear that these chronic and cumulative stresses may be responsible for higher rates of suicide, unwed pregnancy, substance abuse, and chronic health ailments such as heart disease and obesity. The problem appears to be intensifying because of "an increasingly competitive society and the growing number of single-parent families."

(*Palm Beach Post*, 4/14/89)

"Treat people as if they were what they ought to be and you help them to become what they are capable of being."

— Goethe

Electrocardiogram Changes Associated with Physical And Mental Stress

Electrocardiographic changes during a standardized treadmill stress test are routinely used to diagnose and evaluate coronary heart disease. It is also generally acknowledged that emotional, as well as physical stress, can contribute to angina and heart attacks and produce typical electrocardiographic changes. In one recent report, 22 men and 6 women ranging in age from 45 to 75 years were studied. All had a history of stable angina and an abnormal exercise stress test with characteristic electrocardiographic findings or other bona fide evidence of coronary heart disease. Patients were asked to keep a diary of mental and physical activities throughout the day and all received continuous electrocardiographic monitoring. Physical activity was classified into six grades of severity and stressful mental activities had five gradations ranging from "most relaxed" to "most stressful." The results of the diaries were compared with the ambulatory electrocardiogram reports. 10% of ischemic episodes occurred during sleep, 36% during (continued on page 4)

Electrocardiogram Changes Associated with Physical And Mental Stress

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nonstressful mental and routine physical activities, 26% during nonstressful mental activity but more physical activity, and 22% during usual or stressful mental activity and low level physical activity. Both the intensity of physical activity and perceived mental stress were associated with electrocardiographic evidences of ischemia. Interestingly enough, the majority of ischemic changes occurred during daily routine activities, which showed great variation in the intensity level of both physical and mental stresses. There were no important differences in heart rate at the onset of ischemic events, suggesting that each patient had an individual threshold level. The study also demonstrated that experiencing emotional stress produced the greatest percentage of total duration of ischemic changes in the electrocardiogram.

(Cardiology Board Review, 2/89)

"We ought not to isolate ourselves, for we cannot remain in a state of isolation. Social intercourse makes us the more able to bear with ourselves and others."

— Goethe

Identifying Patients with Stress-Related Hypertension

Some surveys suggest that 25% of people in the United States between the ages of 30 and 69 have diastolic blood pressures greater than 90. While a blood pressure of 160 over 95 is usually considered the upper limit of normal, some studies have shown a significant increase in mortality at levels of 140 over 90, suggesting such patients should be treated. However, a significant number in this latter borderline group have stress-related "white coat hypertension." Their blood pressures are apt to be quite normal during daily activities, but surprisingly higher in the doctor's office, especially when taken by the physician rather than a nurse or assistant. In one study, 20% of patients had normal diastolic pressures during 24-hour ambulatory monitoring although readings consistently persisted to be over 90 on repeated office visits. In another report, ambulatory values averaged 134 over 85, home readings performed by the patients themselves averaged 140 over 86, but measurements obtained in the medical clinic setting were 158 over 93. In one Italian study, physicians and nurses each obtained blood pressures in a group of patients after their base line values had been established. The physicians'

readings averaged 22/14 millimeters of mercury greater than base line values and pressures remained elevated at a second examination 10 minutes later. The nurses' initial readings were only 12/7 millimeters higher than base line and repeat results after ten minutes were very close to base line values. Additional research suggests that out-of-office blood pressure readings are also much more closely related to the subsequent complications associated with hypertension than the customary one or few measurements usually made close together by physicians. Many authorities are concerned that a large number of patients are being treated unnecessarily with medications that may have harmful long-term effects. This is particularly true in the case of diuretic therapy which often causes potassium depletion, and associated with an increased incidence of arrhythmia and sudden death. In addition, blood pressures tend to fall during sleep, and patients receiving drugs for falsely diagnosed hypertension may be at risk for reduced cardiac blood flow and possibly a heart attack. Some studies report an increased incidence of heart attacks and cardiac mortality in patients receiving diuretics. The American Heart Association now advises that "three blood pressure readings be taken at each visit, with the patient seated in a comfortable chair or lying quietly for at least five minutes with the arm unobstructed. Extraneous factors that may influence blood pressures, such as smoking, anxiety, cold, and certain medications should be avoided if possible." The use of automated blood pressure measuring devices, which record blood pressures at 1 or 2-minute intervals without the presence of the physician or any other individual may provide more accurate assessment. This also prevents talking, which can significantly elevate the blood pressure, and may be particularly useful in identifying patients with stress-related "white coat hypertension."

(Internal Medicine News, Vol. 22, No. 6)

"You may be deceived if you trust too much, but you will live in torment if you do not trust enough."

— Frank Crane

— Correction —

A review of Joan Suval's cassette tape: **Coping Tapes: A Program for Mental Fitness** — 2 audiocassettes, total time two hours — appeared in our Newsletter, Vol. 2, No. 3. The price and telephone number were incorrect.

The cost for Ms. Suval's two audiocassettes: \$29.95 (discount for bulk orders) and can be obtained from: Coping Tapes, Inc., P.O. Box 1356, Riverdale, NY 10471, (212)884-8170.

Hostility and Cardiovascular Reaction to Stress In Men and Women

Fifty-six male and an equal number of female undergraduate psychology students were evaluated for hostility, and for cardiovascular responses to stress imposed by an impossible anagram task which had been described as "easy to solve." As noted previously, some critics have suggested that the Cook-Medley hostility or "Ho" scale utilized in this report, is primarily a measure of suspiciousness, resentment, and cynical mistrust, rather than overt, aggressive actions more characteristic of hostile behavior. In an effort to obtain greater quantitative information, the Cook-Medley responses were rated on a 4 point scale ranging from 1 equals "strongly disagree" to 4 equals "strongly agree," rather than mere true or false answers. The subjects were also asked to rate the difficulty of the experimental task and their feelings during the experiment in terms of frustration, helplessness, anger, and anxiety. The average Ho scores for men were greater than those for women but there was considerable overlap. Both males and females who scored high on the Ho scale tended to have significantly higher systolic and diastolic blood pressure responses. Those scoring high on Ho generally reported more anger in response to the task, although anger alone was not associated with evidence of exaggerated blood pressure reactivity. Women generally tended to have lower Ho ratings than men, and it was suggested that this may account for their overall lower risk for coronary heart disease. The absence of any significant correlation between anger scores and cardiovascular reactivity suggests that suspicion, mistrust or cynicism may represent the relationship between Ho ratings and coronary heart disease. However, it should be pointed out that other research supports the contention that anger and its expression are more powerful predictors or precursors of coronary heart disease. The lack of corroboration in this report may result from the likelihood that self-reports of anger may not provide accurate reflections of this complex emotion.

(*Psychosomatic Medicine*, Vol. 51, 1989)

Noise Stress and Helplessness

"Learned helplessness" is a behavioral theory which maintains that animals and humans can be conditioned into a state of extreme helplessness. Eventually, the individual becomes unable to respond to a stressful situation except by complete capitulation and despair. The result in animals and humans is a state of severe passivity and is thought to play

a significant role in the development of depression in some patients. Controllable and uncontrollable noise were used as stressors to further explore the mechanisms underlying the development of "learned helplessness" in a recent study. Mentally healthy individuals had to listen to a loud (100 decibel) tone for thirty minutes in two different settings. In the first, they were able to turn the tone off by pushing a button. In the second, pushing the button had no effect, although the subjects were unaware of this. Twice during the second session they were handed notes urging them to "continue to try hard." Before and after each session, the subjects were required to record their moods and feelings. There was a significant increase in reports of depression, helplessness, anxiety and tension. The researchers concluded that "lack of control over even a mildly aversive stimulus" can produce significant changes in healthy individuals. It seems likely that uncontrollable noise stress would have even more dramatic effects in those who were already depressed and preliminary studies seem to bear this out.

(*Brain Mind Bulletin*, Aug. '88)

"Idealism increases in direct proportion to one's distance from the problem."

— John Galsworthy

Use of Beta Blockers in Stress-Induced Heart Disease

As noted previously, the increased incidence of heart attacks in Type A individuals or those under constant stress appears to be caused by excess release of adrenalin-like hormones. Beta blocker drugs blunt the effects of adrenalin and thus protect against heart attacks as well as a variety of other cardiovascular problems according to a recent review. Stress can cause an increase in abnormal and potentially lethal heart rhythms in susceptible individuals. Even ordinary activities, such as driving, public speaking, or being engaged in a stressful interview can produce significant abnormalities. Increased blood levels of adrenal hormones during stressful situations correlate directly with the degree of disturbance in heart rhythm but can be prevented by the administration of beta blockers. Patients with panic disorder and mitral valve prolapse also frequently complain of chest pain and palpitations. These symptoms similarly appear to be related to increased adrenal activity and can be markedly reduced by beta blocker therapy. It was noted that psychological stress is now conceded to be a significant risk factor not only for heart attacks, but also ischemia, arrhythmias, and even cardiomyopathy. There is increasing evidence that beta blockers may effectively reduce all of these complications.

(Reference: *Cardio*, May, 1989)

More on Physician Stress

A recent session on physicians' lifestyles, at the Annual Meeting of the California Medical Association, was devoted to the increasing problem of physician stress. Many young physicians entering practice have an idealistic vision that is quickly shattered because of "escalating lawsuits, hard to collect insurance claims, and patients who have high expectations as health-care consumers." Older physicians also are disillusioned as revealed in a video presentation of a middle-aged physician looking back over his career. "When I went into medicine, I wanted to do something for people, really do something for them. All those years and look where I am now. I sometimes spend 16 hours a day on this job, and I don't know what it even means. I rush people in and out of that office, one after another, and I don't know that I help anybody. . . I'm hardly ever home, I hardly ever see my wife and kids, and I don't have anything to say to them when I do. Unless I die, I don't see how I'm going to get off of this treadmill."

The practicing physician's prestige has steadily declined. There are few medical "heroes" in the practice setting, and physicians are now more apt to gain prominence as basic scientists involved in esoteric matters such as oncogenes and DNA splicing. Physicians also suggested techniques and strategies that they personally use to combat job stress. Some mentioned prayer, others indicated the need to say "enough is enough," and take a break, no matter what. Many similarly stressed the need to give personal time the same kind of priority assigned to office visits. Ideally, this should be spent in non-competitive hobbies like astronomy and fishing. Most agreed that "physicians who relax are more fun to be around, seem more human and less irritable to patients, and are generally less riled over little irritations."

(Reference: *Internal Medicine News*, May 1-14, 1989)

"I never met a man so ignorant that I couldn't learn something from him."

— Galileo Galilei

Dolphin Stress and Ulcers

Man's responses to stress have been developed over hundreds of thousands of years of evolution. While purposeful and even lifesaving for our primitive ancestors faced with a sudden physical threat, they are inappropriate reactions to modern psychosocial stress. A characteristic feature of the classical "fight or flight" response is the shunting of blood away from the stomach to the large muscles of the extremities to provide strength for combat or speedier removal from a scene of possible peril.

Ulcerations in the stomach were also one of the major findings noted by Selye in his initial description of the "Alarm Reaction." It's not hard to understand why ulcers develop in humans, confronted by a host of daily emotional stresses, but now it appears that porpoises may also be victims.

A recent Associated Press dispatch revealed that stomach ulcers had developed in three bottlenose dolphins shortly after they arrived at the National Aquarium in Baltimore in the fall of 1981. According to the Chief of Medicine at the aquarium, the ulcers were caused by the stress of being unable to escape the enormous crowds that came to watch the animals. Unfortunately, the farthest point they could retreat to in the tank was still within their "flight distance," the distance to which they would flee away from the crowds if they could. The dolphins were flown back to Florida where they recovered within six months. On their return to Baltimore in June of 1982 they were carefully studied for relationships between their behavior and possible stress factors. It was found that when the aquarium was crowded, 98 percent of the dolphins' activities took place in parts of the tank away from people. As the crowds increased, a variety of stress-related abnormal behaviors were increasingly noted. In addition to an attendance three times greater than had been anticipated, the building was open until 2 A.M. when it had to be cleaned, so that the lights never went out. Unfortunately, the point of the tank furthest away from the people to which the dolphins fled, was in a location where the noise from the pumping equipment was at an irritating maximum level. Officials subsequently spent over \$250,000 to reduce noise in the tank and limited visitors to a maximum of 850 an hour. Viewing times were also arranged so that the porpoises could be assured of at least eight hours of sleep a night, with a resultant marked improvement in their behavior and health.

(*Palm Beach Post*, 5/25/89)

Teenage Stress, Health And Behavior

A 1987 nationwide survey of health knowledge and behavior conducted by three national health organizations involved more than 11,400 8th and 10th grade students from schools in 20 different states. One quarter of adolescent boys and almost half of the girls indicated that they had seriously considered committing suicide at some point in their lives. 18% of the girls and 11% of the boys had actually attempted suicide. More than three out of four and almost 90% of 10th graders indicated that they had used alcohol. More than a quarter of the 8th graders (continued on page 7)

Teenage Stress, Health And Behavior

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and 40% of 10th graders admitted that they had "five or more drinks at least once during the preceding two weeks." Five percent of 8th graders and 15% of 10th graders also reported having used marijuana in the preceding month. Almost a third of the boys and half the girls said they hadn't eaten breakfast more than twice during the preceding week. 60 percent of the girls and 28 percent of boys had attempted dieting during the preceding year. The vast majority of both groups knew that condoms protected against AIDS through sexual intercourse. However, half also believed that donating blood increased the likelihood of infection, and were uncertain or believed that washing after sex would reduce the risk.

(Reference: *The Wall Street Journal*, 5/22/89)

"But there can hardly be a doubt that we are descended from barbarians."

— Charles Darwin

Drug Prevents Artery Damage During Social Stress

Psychosocial stress has been associated with an accelerated pattern of coronary artery disease and atherosclerosis. The mechanism of action involved usually cited is an increase in secretion of stress-related hormones known to contribute to these problems. Beta-blocker medication, which blunts the action of adrenalin-like hormones, has been found to reduce the rate of recurrent heart attacks in a number of trials. Research reports now suggest that these agents provide "protection against coronary artery disease among aggressive, dominant monkeys living in competitive, stressful social situations. In one report, such animals developed "more atherosclerosis than submissive, subordinate monkeys—but only if they live in unstable, stressful social groups." In a second study, half the monkeys received the beta-blocking drug, propranolol. In the treated group, "the excess atherosclerosis associated with social dominance was completely eliminated." The behavior of both groups of monkeys was identical and the only distinction appeared to be a marked reduction in the cardiovascular response to stress. Adult male monkeys from a strain with well documented susceptibility to diet induced coronary atherosclerosis were housed in identical pens in groups of five. Social stress was generated by interchanging members of the group monthly so that social relationships had to be restructured. Halfway through each month, a "hormone-stimulated sexual receptive female was added to each

group, putting the dominant males under constant stress."

It has also been observed that exercise training may have an effect similar to beta blockers in suppressing heart rate and blood pressure increases that occur during stress. Studies are now being conducted to determine whether monkeys who are forced to exercise for one hour, three times weekly, show less damage than those who are sedentary.

(Reference: *Cardiology Today*, March, 1988)

"Fight for your highest attainable aim but do not put up resistance in vain."

— Hans Selye

Social Isolation and Death In Patients with Coronary Heart Disease

A Scandinavian study was designed to determine the possible relationship between excess psychosocial stress and increased death rates. 150 middle-aged men with evidence of coronary heart disease responded to questionnaires providing information about their educational level, social class, marital status, and daily activities. The patients were also asked to assess their own general health status. Over the ten-year-follow-up period, there were thirty-seven deaths, and twenty of these were due to coronary heart disease. Further analysis of this latter group revealed that they tended to be older, had a lower educational level and social class, and exhibited more evidence of irritability of the heart. The three major factors which were associated with death due to heart diseases were "social isolation, a poor self-rated health status and ventricular irritability." The psychosocial mortality indicators were independent of predictions which were based on medical data alone, and proved to be equally significant. The investigators concluded that social isolation represents an independent risk factor for death in patients with ischemic heart disease, and suggested that "the social life of patients with heart disease could be used as a prognostic tool in the routine care of these patients."

(Reference: *Acta Medica Scandinavica*, February, 1988)

*"Those who flow as life flows know they
need no other force:*

*They feel no wear, they feel no tear,
They need no mending, no repair."*

— Lao Tzu

Book Reviews • Meetings and Items of Interest

Book Reviews

Type A Behavior Pattern: Research and Intervention. Houston, B.K. and Snyder, C.R., eds., John Wiley and Sons, Inc., New York, 1988, 362 pp. \$39.95.

This volume is the outgrowth of a two-day conference held in 1986. The 13 chapters cover most of the controversial areas surrounding Type A, and the contributors are well known authorities in their respective areas of expertise. Rosenman et al.'s opening chapter, *Definition, Assessment and Evolution of the Type A Behavior Pattern* is a remarkable contribution which lives up to its title and sets the tone of this volume. It contains approximately 130 references and the other chapters are similarly extensively annotated. A variety of important issues are covered, such as the distinctions between global and type A coronary prone behavior, the role of hostility, Type A in children and adolescents, controversy concerning the treatment of Type A, etc. Unlike many multiauthored offerings of this nature, there is little reduplication of material and the index is surprisingly comprehensive. This book is highly recommended for those interested in any aspect of Type A behavior, but should also be valuable to cardiologists, pediatricians, psychiatrists, primary care physicians and psychologists.

Cross Cultural Anxiety, vol. 3, Spielberger, C.D., and Diaz-Guerrero, R., eds., Hemisphere Publishing Corporation, New York, 1986, 167 pp., \$39.95.

This small volume reports the research findings from 11 different countries using the state-trait anxiety inventory measures developed by Spielberger. Such information is important since it is obvious that psychosocial stresses vary tremendously both qualitatively and quantitatively in different cultures. Thus, life change events such as divorce, or a minor brush with the law, could result in different ratings in the Holmes-Rahe Scale, depending upon whether one lived in rural Japan, Moscow, or Las Vegas. Measurement of state and trait anxiety should not be expected to be as susceptible to such variation and this appears to be supported by the present volume. The first four chapters discuss the effects of stress and anxiety on performance of individuals of varying ages in Brazil, Hungary, India, and Poland. Succeeding chapters deal with the effects of anxiety on athletic performance. Here, the relationship seems analogous to optimal

results and the degree of tension in a violin string. In both instances, peak performance is not likely to be attained if tension or anxiety is too high or too low. The final chapters are of particular interest in that they report the construction and validation of new measures to assess anxiety in Arabic-speaking children and adults, Bengali and Korean students, and adults in rural New Zealand. These studies confirm that anxiety is a universal emotion and are a testimonial to the value and validity of Spielberger's measurement techniques in such widely different population groups and ages.

Meetings and Items of Interest

June 8-11, Creativity and Addiction, Cleveland (216) 494-4200, Ext. 225.

June 8-11, Healing, Change of Heart, June 8-11, Flat Rock, N. Carolina, (794) 258-0616.

June 23, Well-Being of Human Primates, Washington, D.C., (301) 654-6390.

June 26-Sept. 1, Tenth Cape Cod Institute (Daily morning series of lectures on Neuropsychology, The Relaxation Response, Diagnosis and Treatment of Sexual Problems, Children of Divorce, Adolescents in Trouble, Clinical Hypnosis, Marital Therapy, etc.) Cape Cod, MA. Contact Dr. Michael Peters, Albert Einstein College of Medicine, 1303 Belfer Bldg., Bronx, NY 10461 (212) 430-2307.

June 27-30, First International Congress of Behavioral Medicine, Uppsala, Sweden. Contact Ulla Wallin, Dept. of Clinical Psychology, Univ. of Uppsala, P.O. Box 1225, S-751 42 Uppsala, Sweden.

July 2-7, First European Congress of Psychology, Amsterdam. Tel. No. 020-5483851/5487361.

July 9-14, International Congress of Physiological Sciences, Helsinki. Tel. No. 358-31-551-740.

July 10-16, Laughter Therapy Trainings, Santa Barbara, CA, (805) 966-0025.

July 16-21, 14th National Wellness Conference, Stevens Point, Wisconsin. (718) 346-2172.

Aug. 7-13, Laughter Therapy Trainings, Santa Barbara, CA. (805) 966-0025.

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.

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.

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