

# The Newsletter of THE AMERICAN INSTITUTE OF STRESS

Number 7, 1988

## The Influence of Aerobic Exercise on Cardiovascular Responses to Psychological Stress

Individuals who engage in regular aerobic exercise such as running, tend to have lower heart rates and resting blood pressures as a result of cardiovascular conditioning. In addition, increases in these measures of cardiovascular arousal are also decreased during the physical stress of exercise. Prior research has demonstrated that cardiovascular responses during emotional stress in aerobically conditioned individuals are not altered as assessed by prompt increases in heart rate and blood pressure while engaged in public speaking. In one recent study, over 100 males were separated into intense, moderate, and nonexercisers. They completed a life stress questionnaire, personality assessment tests, and a physical examination. Pulse rate, finger pulse volume, and skin resistance were measured while they participated in two emotionally stressful laboratory procedures involving a difficult "intelligence test" and an electric shock experiment. While the exercisers tended to have less physiological reactivity, there was no statistically significant difference between the two groups. The results of this research and

others, such as the effect of the Relaxation Response on cardiovascular changes during exercise, suggest the following: Stress reduction strategies may be effective in reducing cardiovascular responses to emotional but not physical stress. Aerobic conditioning appears to reduce cardiovascular responses to physical but not emotional stress. This implies that the increase in heart rate and blood pressure resulting from physical and emotional stress are mediated by different mechanisms.

## Cost Effectiveness of Biofeedback and Stress Reduction

A recent review of the literature examined a variety of studies that utilized biofeedback, relaxation training, and stress management in the treatment of stress-related illness and pain. The cost effectiveness of such approaches were measured in terms of reduction in physician visits and/or medication use, decrease in medical care costs to patients, reduced hospital stays and rehospitalization, lowered mortality, and improved quality of life. The authors concluded that multicomponent behavioral medicine approaches were cost effective in all of these areas. Cost/benefit ratios ranged between 1:2 and 1:5 with a median of 1:4. Indications are that further refinements in this type of approach could provide even more impressive results.

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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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## Religious Faith and Heart Attack Risk

A recent study of 3,250 Israeli men reveals that those who said they were orthodox or ultra-orthodox had significantly less heart disease than others who described themselves as secular or traditional in their religious practices. It was suggested that the major factor which might account for the difference between the two groups was related to stress reduction benefits provided by strong social support and the order and predictability of activities within the religious group. In addition, there may be some stress-relieving features of orthodox religious observance which include "long hours in active prayer, which frequently involves a rhythmic meditative rocking; weekly spiritual purification by immersion up to the neck in a ritual bath; or the regular, end-of-week total rest from the affairs of the world." In addition, adherence to the community Rabbi's advice and judgments, rather than personally having to make major life decisions, may also provide some benefits. Studies are now underway comparing religious and secular kibbutzim, both of which have strong social support systems to further explore such distinctions. This report confirms an earlier study and the researchers are now investigating whether there are other findings to support the notion that strong religious observance can prolong life by other mechanisms.

## Stress Reduction Effective For Low Back Pain

A University of Washington School of Medicine study investigated the use of both cognitive and operant-behavioral interventions for chronic low back pain. The patients ranged in age from 20-65 with an average history of low back pain for slightly more than six years. They met weekly for two-hour group sessions with a clinical psychologist over an eight-week period. Evaluations were made before treatment and six and twelve months later using self report questionnaires, activity diaries, and spouse reports. Videotapes were made at each evaluation with the participants sitting, standing, walking, and reclining. Their activities and responses were coded for overt pain behavior such as guarding, bracing, and rubbing.

Operant-behavioral therapy focused on reducing social attention that might potentially reinforce pain behaviors. Spouses were trained to ignore pain behavior and to reinforce patient participation in the treatment. Cognitive-behavioral therapy was directed at identifying and reducing "maladaptive thoughts" with respect to pain problems and instruction in coping skills such as relaxation training. Both treatment groups showed improvement in physical and psychosocial complaints and had decreased pain both on self report and spousal evaluation. The operant-behavioral group demonstrated significantly greater improvement in some areas at six month follow-up, but both groups had similar gains at the 12-month evaluation.

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*"This is the true joy of life, the being used for a purpose recognized by yourself as a mighty one; the being thoroughly worn out before you are thrown on the scrap heap; the being of a force of nature instead of a feverish little clod of ailments and grievances complaining that the world will not devote itself to making you happy."*

— George Bernard Shaw

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## First International Congress on Stress Montreux, Switzerland. Nov. 3 - Dec. 4, 1988

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

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## **The Effect of the Relaxation Response on Blood Pressure And Heart Rate During Exercise**

Eleven male coronary artery disease patients received training in the Benson Relaxation Response and practiced the technique both at rest and during exercise over a two-week period. Following this period of time, all of the subjects had reduced their heart rate and blood pressure at rest by practicing the technique. However, during submaximal (4METs) cycle ergometer exercise, there was no significant difference between systolic blood pressure, diastolic blood pressure, or heart rate that could be demonstrated as a consequence of practicing this meditative response. The findings confirm the fact that the Benson Relaxation Response is an easily learned technique that reduces various aspects of cardiovascular activity at rest and possibly emotional but not physical stress.

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## **Stressful Workplace And Hypertension**

Almost three hundred middle-aged male, blue-collar factory workers participated in a study designed to investigate the possible relationship between job stress and hypertension. The workers were recruited from two different plants, one of which was rated by the workers as having good working conditions and the other as having a poor quality and noisy work environment. A detailed medical history was taken and overall job dissatisfaction was assessed by questionnaire. There was a significant relationship between an elevated diastolic blood pressure and job dissatisfaction independent of any other hypertension risk factor. Job insecurity was the most important independent predictor of blood pressure. A separate analysis revealed that a relationship between job satisfaction and blood pressure was apparent only in the well-rated factory. In the high-stress environment, workers had hypertension, regardless of their level of job satisfaction.

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*"Men occasionally stumble across the truth, but most of them pick themselves up and hurry off as if nothing had happened."*

— Winston Churchill

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## **How Long Does Type A Behavior Modification Last?**

Three hundred heart attack patients received Type A behavioral counseling for 4½ years during which they were found to have a relatively low recurrent heart attack rate as compared to controls. A recent follow-up study which re-evaluated this group one year after Type A reduction activities had been discontinued revealed that their intensity of Type A behavior continued to be suppressed and that protection from a recurrent heart attack appeared to persist. One hundred and fourteen of the control patients volunteered to receive Type A behavioral counseling for a year. At the end of this period of time, this group also demonstrated a reduction in intensity of Type A behavior, as well as a significant decrease in cardiac mortality and morbidity. The researchers concluded that the efficacy of Type A reduction efforts and their cardioprotective benefits persist for at least one year after the cessation of such counseling. The significance of these findings has recently been challenged by others who reported that Type A behavior in itself appears to protect against a second or recurrent heart attack.

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## **The Effect of Acute and Chronic Stress on Sexual Arousal in Men**

In this study, ten unemployed men (high chronic stress) were exposed to two erotic videotapes and their arousal responses were compared to a matched group of normal controls reporting no unusual stress. Acute stress was induced by telling the men that they would have to give a public talk on their own sexual behavior and fantasies and the stressful nature of this task was confirmed by their cardiovascular responses. Sexual arousal was evaluated by measuring penile tumescence. Half the men were told about the talk before seeing either tape and the other half were told in between the two erotic tapes. The results showed that the unemployed (high chronic stress men) had significantly less sexual arousal when acutely stressed prior to viewing the videotapes. There was no difference between the two groups when the acute stress of having to give a talk on personal sexual fantasy was presented between the two tapes. The authors thus concluded that impairment of erection occurred as a result of a combination of both chronic and acute stress.

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## Stress and Burnout Associated with Health Care

Burnout rates are known to be higher in nurses in high-stress locations such as intensive care units. This is understandable in view of the constant likelihood of unexpected emergencies, the need to make life and death decisions in a few seconds, and other constantly changing time urgent pressures. At the other end of the spectrum, health care professionals and family members who have to deal with chronic, progressively deteriorating problems, such as caring for those with Alzheimer's disease, also have high burnout rates because of the insidious and unrelenting frustration of being in a no win situation. Now similar problems are being seen in those providing care to AIDS patients. This is related to the increased demand for such services, the lack of any proven effective treatment and concern about transmission of infection. Many health professionals refuse or avoid providing care to AIDS patients, and some doctors and dentists are concerned that such activities will turn other patients away. There are special problems dealing with drug addicts, prostitutes, homosexuals, and the particularly heart rending problems associated with AIDS in children or innocent recipients of blood transfusions. Because most AIDS patients are young, heterosexual doctors are prone to the psychological hazard of patient identification.

Many AIDS patients do not have a stable living environment, sufficient financial resources, or any real ability to take responsibility for their health and require unusual emotional support. Social workers have to deal with addressing the problems of continued drug use, physicians must weigh the risk/benefit ratio of prescribing narcotics to avoid cold turkey withdrawal symptoms, and cope with decisions related to the need for hospitalization.

Hospitals are beginning to recognize this. In one hospital AIDS unit, the nurses work a three-day week followed by four days off in an attempt to remove them from the situation long enough to "achieve some emotional distance." Health care workers who have become very attached to their patients and families are given time off to attend funerals or otherwise deal with their grief and arrangements are made to rotate them through other parts of the hospital periodically. Voluntary efforts by lay individuals is encouraged and may be particularly successful in homosexual groups or

parents with hemophiliacs and children with AIDS. Because the drug-addicted community has a "fringe" status, this support is not likely to be available. The answer to the problem lies in educational efforts and increased funding for outpatient management support.

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*"Ignorance, like faith and love, often blinds men."*

— Michael Uhrin

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## Stress and Coronaries In the Clergy

The traditional view of the clerical life is apt to be that of a fairly serene existence, characterized by strong stress buffers that are provided by social support activities. In general, the clergy is assumed to have low adverse health risks because as a class their life styles are slower paced and there is apt to be a relative absence of smoking, alcoholism, substance abuse and other psychosocial contributors to the illness. Some new findings, however, challenge these assumptions and conclusions. Eighty-four white male ministers of the Assemblies of God were studied by researchers from the University of Tennessee. Although none of them smoked, and there was no indication of higher levels of other standard risk factors, these ministers exhibited a significant increase in cardiovascular disease when compared to the general population. "Physiological measurements supported the ministers' expressed belief that their vocation placed them under significant stress." Of particular interest was the observation that while they perceived themselves as being able to manage stress effectively, the data indicated otherwise. Thus, stress seemed to be the prime culprit causing cardiovascular problems. As the authors concluded, "The clergy provides an ideal vocation for study of the complex relationship of traditional organic diseases and risk factors with psychological stress."

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*"Nature gave man two ends, one to sit on and one to think with. Ever since then man's success or failure has been dependent on the one he used most."*

— George R. Kirkpatrick

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## More on the Health Effects of Attitude

A variety of reports supporting the important role of attitude in determining health and illness patterns was presented at the most recent annual meeting of the American Psychological Association. Several confirmed that a strong sense of control was closely linked to better health, presumably because of its ability to reduce the harmful effects of stress. Angry, hostile, suspicious individuals, particularly those under 50, exhibited poorer health records than those who were more trusting. Those who had a strong commitment to their daily work activities and interpreted change as a constructive challenge were healthier than those who lacked such responses.

Heart by-pass patients who were optimistic recovered more rapidly and had a better quality of life after surgery. A 20-year Duke University follow-up of more than 400 confirmed that those who were the most suspicious and hostile were least likely to have survived. Indeed, those judged to be extreme Type A's in terms of hostility had almost "self destructed." Individuals with the highest hostility rating scores were also more apt to smoke more and exercise less. A strong optimistic attitude was also associated with better immune system function in one study of AIDS-infected intravenous drug users. Similarly, in another report of HIV-positive gay males, those who exhibited a fighting attitude and a strong sense of control and were able to express their emotions had better immune defenses, while pessimism was associated with poor immune function. These effects are probably mediated through the release of hormones such as cortisol, adrenalin, and noradrenalin which are released under stress and influence immune system function. In another report, relaxation techniques were found to improve immune defenses.

As one researcher noted, "we have enough hard evidence to say there's no doubt stress can alter immune function." However, there is a danger in going overboard. Many investigators are concerned that individuals may avoid or discontinue conventional therapy because of a belief that they can cure themselves of cancer, AIDS, or some other serious illness. It would seem that the most practical benefit from this new round of research on mind-body relationships lies in prevention. A 35-year study of 99 Harvard University graduates clearly demonstrated that having a pessimistic attitude at age 25 was closely correlated with poor health two decades later. In view of this, efforts should be made to identify such attitudes early in life and try to correct them. In fact, it was suggested that by the year 2001, a personality

profile will become just as routine a part of the physical examination as taking blood pressures.

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## Job Stress Due to Computer Spying

In Denmark, a restaurant labor dispute arose over whether computers could determine which waiters were pushing the daily special energetically enough to make their quota and award a bonus to the top seller. Computerized access control systems placed on rest room doors in France, forcing workers to punch in with a machine readable card, led to a strike. Such computer watchdog technology can essentially account for every second of a worker's time, including number of minutes taken for lunch or coffee breaks, or number of minutes his machine is "down" without explanation. Computers monitor the foreman who must arrive at the faulty machine within a specified number of minutes, unlock a panel and punch in a code indicating the cause of the failure. If employees don't report for work at the correct time, the computer notifies the foreman, lists prior records of tardiness and absenteeism and will even determine what the punishment should be based on this information. Computerized switchboards can track local and long distance calls each employee makes, listing the number or numbers called and length of each call. Privacy has all but disappeared in some workplaces. Even the contents of a telecommunication system can be examined. Several years ago, a New Mexico firm found that one of its employees had been using office computers to conduct a large bookmaking operation. Further investigation revealed that other workers had been using the system to store everything from bowling scores and recipes to personal correspondence. Some workers complained that the investigation made them feel as though someone was picking the locks on their private desks. Perhaps Henry David Thoreau was right when he wrote:

"Lo! Men have become the tools of their tools."

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*"Worrying is the most natural and spontaneous of all human functions. It is time to acknowledge this, perhaps even to learn to do it better."*

— Lewis Thomas

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## The Health Effects Of Bereavement

Most attempts to rate stressful life events place loss of a spouse or a close family relative at the top of the list. It is a common belief that the death of a loved one contributes significantly to the subsequent morbidity and mortality of the survivor. This appears to be supported by a variety of statistics indicating that widowed individuals die at rates three to ten times higher than married controls from all the leading causes of death. Careful analysis of some research studies reveals that the increase in deaths among widowers during the first six months of bereavement was primarily the result of coronary heart disease. However, deaths due to infectious disease, accidents, and suicide were significantly higher than expected. In women, death due to cirrhosis was more prominent. Men seem to be more at risk than women, especially if they do not remarry. Deaths due to cancer are also increased in widowed individuals and in females is usually due to malignancy of the reproductive organs.

There are a variety of possible explanations. Cardiac deaths following a disturbingly stressful event would most likely result from ventricular arrhythmia due to a sudden surge of adrenalin, especially in patients with underlying heart disease. Malignancy and infection may result from depressed immune system function which has been clearly demonstrated following death of a spouse. The stress of bereavement can lead to psychological problems, alcohol or substance abuse, nutritional disturbances, and other aberrant social behaviors that could contribute to morbidity and mortality over a longer period of time. While these hypothetical considerations are plausible and attractive, they really do not constitute proof. A recent *New England Journal of Medicine* article dealing with mortality rates among bereaved parents suggests that a variety of other factors also need to be considered. Particular attention needs to be devoted to those influences which negate or diminish the stress of bereavement. An Israeli study reviewed mortality rates in parents of over 2,500 soldiers aged 18 to 40 who were killed in the 1973 War and parents of over 1,000 men aged 18 to 30 who died in accidents between 1971 and 1975. Both groups were followed through 1983 and were compared with a large control group of the population in general. Mortality rates were higher among fathers whose sons died in accidents rather than during the War but there was no difference between the two groups of mothers. More importantly, there was no excess mortality among the bereaved parents as a group when compared with the general population. Specifically, there was no consistent evidence of an elevated risk of death early

or late after the loss. Widowed and divorced parents who lost a son did have increased mortality which reached statistical significance only in mothers who were not married at the time of their loss. The results of this study suggest that the stress of bereavement is not necessarily significantly harmful and again emphasizes the importance of social support systems as a strong buffer.

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*"Human life is but a series of footnotes to a vast obscure unfinished masterpiece."*

— V. Nabokov

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## Stress and Health Risks Of Modern Office Buildings

Sleek, modern office buildings with all of the latest electronic equipment may generate a false impression of providing safe and healthy work environments. Nonetheless, white collar workers frequently complain of chronic headache, nausea, fatigue, insomnia and breathing problems inside their high-tech offices. In some instances, test results reveal that the constantly recirculated air may be contaminated with toxic substances such as carbon monoxide, formaldehyde, asbestos, radon, polychlorinated biphenyls, and a variety of bacteria and other infectious agents. Energy-efficient ventilation systems require tightly sealed office buildings; they recycle fixed volumes of inside air and thus save money. The evidence is as yet inconclusive but it is believed by some investigators that this may lead to a hypersensitivity pneumonitis known as "humidifier lung," recurrent flu-like symptoms after spending a weekend in the fresh air ("Monday miseries") and even Legionnaires' disease. In some instances, exhaust fumes from loading docks and lower-floor garages may get into the air system. And in a few modern buildings, afternoon levels of carbon monoxide, sulfur dioxide, and other substances that irritate the eyes and nasal passages may be 10 to 20 times greater than Environmental Protection Agency standards.

Noise pollution is another common health hazard. Company cafeterias and other areas where the noise level exceeds 70 decibels for most of the eight-hour workday may cause irritability, impair concentration, and contribute to hypertension. Prolonged exposure to more than 75 decibels can cause extensive loss of hearing. Finally, there are some unresolved modern high-tech office health mysteries. Employees of airlines, utilities, news media, finance, and electronics report unusually high incidences of anemia and leukemia. However, no direct cause-and-effect relationships have been established.

## More on Job Stress And Heart Attacks

As noted in prior issues of the Newsletter, increased job stress is most apt to occur in those occupations characterized by high psychological demands or responsibilities, but little opportunity to be in control of one's duties. Not being able to express your emotions freely, or literally "get things off your chest," heavy workloads and having to work quickly are other factors. Typical examples might be customer service and complaint department personnel, sales clerks, and waiting on customers, and many of these jobs are filled predominantly by females, and have been linked to an increased incidence of cardiovascular disease. A new report reviewing heart attacks reported by two federal surveys analyzed the work records of 5000 men. Occupations were rated for stress based on the degree of psychological demand and lack of control. The researchers found that those whose jobs put them in the top 20 per cent for job strain had 2.48 and 3.28 times the risk of heart attack than other workers. Those who were in the top 10 percent for job stress had 3.8 and 4.79 more heart attacks than those in the lowest 10 per cent. High-risk jobs included cooks, waiters, computer operators, gas station attendants and some assembly line workers. Cashiers and waiters were in the top 10 percent and foresters, natural scientists and civil engineers seemed to be the least likely to have problems. In general, job stress appeared to account for 25 to 33 per cent of all heart attacks in the two surveys. Executive and professional jobs were not considered to be high on the stress list because such individuals usually have a relatively high degree of control over their activities. It is suggested that employers may take advantage of these findings to look at ways of redesigning high-risk jobs to reduce heart attacks and increase productivity.

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*"Life is a jigsaw puzzle with most of the pieces missing."*

— Anonymous

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## Why A Good Night's Sleep Keeps You Healthy

Scientists are discovering more and more links between sleep, stress, and the immune system. As noted previously in the Newsletter, individuals with severe infections often feel drowsy and sleep for longer periods of time. Scientists have previously

determined that this is related to the release of small proteins called muramyl peptides which are found in the cell walls of bacteria. It is postulated that as the bacteria are destroyed during the body's attempt to overcome infection, these substances are released in increased amounts. Prior research has also demonstrated that the administration of these compounds produce the most restful kind of dream-free, "slow-wave" sleep. Now investigators at the University of Tennessee have shown that these same muramyl peptides also trigger the production of interleukin 1, an important component of the body's immune system. Interleukin 1 also induces sleep and may contribute to the drowsiness associated with many infectious diseases. Common folk wisdom claims that lack of sleep contributes to a "run down" condition and for years bed rest was routinely prescribed as part of the treatment for almost any illness. More recently, there has been a trend away from this because of the lack of evidence that bed rest provided any benefits and other indications that prolonged inactivity of this nature could actually have deleterious effects emotionally and physically. Now it seems that there may be some scientific justification for spending one-third of our lives in bed. The sleep-wake cycle has strong links with circadian variations in cortisol levels and a variety of neurotransmitters such as serotonin which also play an important role in stress responses.

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## First International Montreux Congress on Stress

11-30-12-4, 1988—Montreux, Switzerland

State of the art presentations on the role of stress in cardiovascular disease, immune system dysfunction, stress reduction techniques, social support systems as stress buffers, non-drug treatment of hypertension based on stress reduction, role of personality and attitude in mediation of stress-related illness, electromagnetic influences on behavior and stress-related symptoms and much more. Leading authorities from the U.S. and Europe. Attendance limited. Unusual opportunity for faculty-audience interaction and informal discussion, and to combine business with a pleasure trip and Christmas shopping abroad. For further information write to Conference Director, The American Institute of Stress, 124 Park Ave., Yonkers, NY 10703 or call 1-800-24RELAX; (914) 963-1200 in N.Y.).

# Book Reviews • Meetings and Items of Interest

## Book Reviews

**Stress and Coping in Time of War, Milgram, N.A. (ed.), Brunner/Mazel, New York, 1986, \$45.00.**

This is a collection of some 22 papers dealing with various war stress-related problems based on the Israeli experience. The subject matter had been previously covered at an International Conference in 1983 but has been extensively rewritten for this volume. Almost every conceivable aspect of this subject is covered in broad sections such as the effect of cognitive appraisal on coping ability in stressful situations, risk factors in combat stress and post-traumatic stress disorders and their treatment, factors affecting performance in highly stressful combat situations and the effect of war on civilian populations. The problems of combat stress reactions and their treatment in acute and chronic settings are covered in detail and emphasis is placed on how individuals, groups, and the nation in general cope with the variegated and unexpected stresses of war. The editor has done a superb job in writing integrated introductions for each of the five subdivisions of the book, as well as a closing chapter which summarizes the major concepts presented and discusses their practical application. It is difficult to think of any subject that has not been addressed including terrorism, prisoner of war complications, determination of risk factors for stress-related disorders, the role of individual and group psychotherapy, problems related to homelessness and uprooting, etc. This book will be of extreme value to researchers in the field of mental health and social and behavioral sciences who are interested not only in the effect of war-related stresses on civilian populations but also the problems posed by any large-scale and long-term crisis. It is particularly valuable because of the emphasis on the prophylactic and therapeutic applications of the findings.

**Post Traumatic Therapy and Victims of Violence, Ochberg, F.M. (ed.), Brunner/Mazel, New York, 1988, \$45.00.**

This is another valuable contribution to the Brunner/Mazel psychosocial stress series. The editor is a psychiatrist with an extensive experience and interest in the study of victims of violence. The seventeen chapters are divided into four sections dealing with the principles of post-traumatic therapy, profiles of violent crime victims (rape, incest, battered wives and children), problems related to war and atrocities based on experiences

in Vietnam and the Holocaust and a section devoted to support services for victims and the Crime Victims' Movement. The editor's Introduction provides an excellent overview of the problem and important insights into identifying and dealing with post-traumatic stress disorders. Psychological and pharmacological treatment approaches are discussed and workers in the field are urged to appraise the victim status in psychological terms such as shame, self blame, subjugation, morbid hatred, paradoxical gratitude, defilement, sexual inhibition, resignation, etc. On the other hand, post-traumatic stress disorder itself should be evaluated in physiologic terms. In treatment approaches, the therapists emphasize treating the victims with respect and dignity and to develop existing coping skills that integrate biological, psychological, and social resources. There was surprisingly little reduplication in a multiauthored work such as this dealing with a specific subject. The volume is extremely well organized and written and should prove a valuable resource to anyone interested in the psychosocial and therapeutic problems associated with post-traumatic stress disorder.

## Meetings and Items of Interest

**Oct. 13-15,** Psychobiology of Human Eating Disorders, New York, NY, New York Academy of Sciences, (212) 838-0230.

**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. 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.

**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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