

The Newsletter of THE AMERICAN INSTITUTE OF STRESS

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HOW DOES STRESS AFFECT THE QUALITY OF LIFE?



Sitting at center is the Hans Selye Award Recipient for 1995, Dr. Ray Rosenman. From left to right are Dr. Bjorn Folkow, Dr. James Henry, Dr. Lennart Levi, and Dr. Stewart Wolf, distinguished Hans Selye Award Recipients of past years.

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The Seventh International Montreux Congress on Stress featured a Round Table Session among Hans Selye Award Recipients dealing with the effect of stress on the quality of life. Two of the presentations which are abstracted in this issue approach this topic from different aspects, but reach similar conclusions. As Bjorn Folkow notes, our man-made "Brave New World" more than satisfies our physical needs, but despite the fact that many "never had it so good", we seem to suffer from an increasing number of psychosomatic ills due to stress induced defense and/or defeat reactions. The same theme is echoed by Stewart Wolf, and is supported by a personal experience in World War II that illustrates this.

Many people perceive quality of life in terms of creature comforts, wealth and social status. However, these are clearly not as important as developing meaningful commitments, or deriving the personal fulfillment that comes from being able to be of service to others. Unfortunately, modern lifestyles and societal pressures tend to promote the pursuit of material possessions, prestige, and power as higher priorities.

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The Newsletter of
**THE AMERICAN INSTITUTE OF
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Quality Of Life:

Does "New" Always Mean "Better"?

The million-year old paleocortical mechanisms of human brains were designed for the preservation of self and species in primitive hunter-gatherer life. However, they now seem to be increasingly in conflict with one of man's most formidable neocortical achievements, the computerized, competitive and hectic modern society. Our man-made "Brave New World" has certainly been successful in providing affluence when it comes to satisfying most real — and quite a few imagined — physical needs. This is often accomplished to such an extent that the ancient adage, "The Best Things in Life are Free", often seems to have been forgotten. The dominating technologic-economic forces that have fostered this achievement, have failed to take into consideration that the mental constitution and abilities of the human brain have not changed dramatically since primitive civilizations, and for natural reasons, exhibit the same biological variability as all other physiological processes. As a consequence, a considerable portion of Western populations, who in some respects "never had it so good", suffer from a variety of psychosomatic disturbances due to stress-

induced defense and/or defeat reactions. These originate from the previously mentioned paleocortical "emotional" centers, and contribute strongly to the disturbed behaviors that underlie many of our present-day "disorders of civilization". Over the long run, they can also have powerful influences on physical health.

Another, perhaps even more serious consequence of our steadily more complex and competitive society, is that rapidly growing numbers of people, who only a few years ago would have found their natural place in occupational life, are excluded from meaningful participation. A major cause of this is that they find that they cannot emotionally or intellectually cope with increasingly specialized and hectic work environments that have incompatible goals and values. It is hardly strange that such imposed "defeat situations" are experienced as challenges to very basic emotional needs such as safety, continuity, mental support, attachment, etc. This leads to frustration, despair and hatred, all of which breed violence. Unfortunately, such circumstances promote the development of a vicious circle, both by perpetuating such psychosocial disturbances to the next generation from early life on, and by spreading fear and animosity in widening circles in society.

"Quality of life" is certainly not what it should be and could be for large segments of our society. Severe poverty, famine, and suppression of freedom and civil rights prevail in parts of the world. However, even in "civilized" countries, many citizens feel isolated, excluded and abandoned, all of which tends to breed rebellion. New is not necessarily better. The resultant built in stresses of modern society are clearly evident in many living in large cities, who fear walking alone on the street where they live, and feel forced to carry weapons for their personal protection.

*Adapted from a presentation by Björn Folkow, M.D., Ph.D.,
 Seventh International Montreux Congress on Stress.*

*"O brave new world,
 That has such people in't."*

Shakespeare, *The Tempest*

Quality Of Life: Purpose And People vs Possessions

The elements that constitute a high quality of life probably do not include the acquisition of possessions, as implied in what is generally regarded as "the American Dream". The definition of quality of life has more to do with intangibles such as achieving a mutually supportive relationship with society, and with specific individuals including family members. Another important ingredient is career — that is for one's life to have a purpose and direction, a way to earn a living that allows for the exercise of one's talents and capabilities, and to be at the same time, enjoyable and emotionally fulfilling. Great wealth and notoriety are false images of a high quality of life. Real quality must include real sources of personal fulfillment, scientific, intellectual, artistic, social or religious commitments, or service to others. The depth and stability of these personal values appears to inversely determine the capacity of stressful life experiences to impair or dilute the quality of life.

It is well known that to some, stress can be a helpful stimulus toward fulfilling achievement, in the biblical sense of "rejoicing as a strong man to run a race". Others under stress may display a variety of adaptive physiological patterns, including Cannon's "fight or flight response", or, on the other hand, may present a physiological pattern characteristic of defeat, despair, and often death. Depending on the circumstances, most of us will respond to stress at various points along the continuum between the two.

During World War II, as a physician in a general hospital in New Guinea, I had an opportunity to observe human behavior along that continuum among American prisoners of war held by the Japanese for nearly three years. When the prisoners arrived by air-lift at our hospital, they were emaciated, weak and suffering from a variety of nutritional deficiencies. That was not surprising; but what puzzled us was our impression of them as people, with respect to their personalities and attitudes. Somehow, in the way they related to us, they

did not seem like a sample of average Americans. After long conversations with them, it became apparent that the average human beings were those, who for one reason or another, had not survived the imprisonment. We soon realized that we were talking to the third that had survived. It included, on the one hand, those with extraordinarily well-integrated personalities, who had been able to maintain their former standards of behavior and their sense of dignity and self-esteem despite the degrading efforts of their captors.

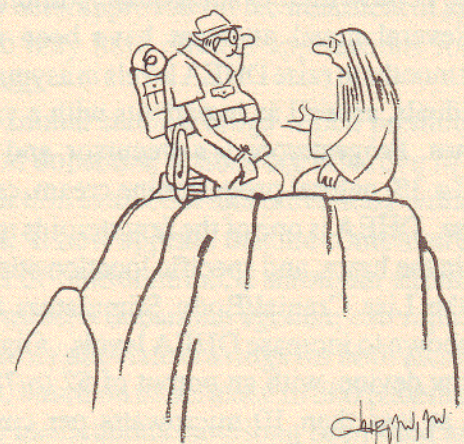
On the other hand, we found ourselves talking to some survivors who seemed to have never developed strong ethical standards. These were individuals who, free of a sense of guilt, stole bare subsistence rations from their comrades during captivity, and to obtain special favors from their captors, reported without remorse other prisoner's infractions of the rules. We learned that the majority of prisoners who had died in captivity were those who had agonized over having occasionally yielded to such temptations in order to obtain food and small comforts. According to their surviving comrades, these men had experienced a sense of worthlessness and hopelessness prior to their death.

This striking observation recalls a couplet by Ogden Nash:

"There is only one way to achieve happiness on this terrestrial ball,

And that is to have either a clear conscience, or none at all."

Adapted from a presentation by Stewart Wolf, M.D., Seventh International Montreux Congress on Stress.



"If I knew how to get rich quick, would I be sitting on a mountaintop all day?"

Pumping Up The Fountain Of Youth

DHEA (Dehydroepiandrosterone) is the most abundant steroid hormone found in the body and blood stream. DHEA is the precursor for both testosterone and estrogen, and may be responsible for the sex specific cardiovascular protection now attributed to these steroids. In addition, high DHEA levels are associated with much lower rates of heart attacks and cardiovascular mortality. Natural DHEA levels are also predictive of longevity, independent of age, smoking, obesity, family history of heart disease, and plasma glucose and lipid patterns. In animal studies, the administration of DHEA delays aging, prevents obesity, lowers cholesterol, retards the development of atherosclerosis, and in general, appears to have remarkable rejuvenation properties similar to some elixir of youth.

DHEA levels steadily decline as we grow older, but regardless of age, individuals with higher baseline levels, have lower death rates and less cardiovascular disease. It is suggested that optimal concentrations of DHEA are 750 to 1250 ng/dl in men, and 550 to 980 in women. As levels fall to 180 in men, and 130 in women, there is a corresponding decreasing ability to adapt to stress. Every significant disease appears to be associated with low or deficient levels of DHEA, and no other single chemical is so universally deficient in illness. Unfortunately, as a recent textbook noted, "We do not know how to control the level of DHEA with medication or behavioral techniques." This may have to be rewritten in subsequent editions.

Several novel attempts have been made in recent months to raise DHEA levels in asymptomatic individuals, as well as in patients with a variety of illnesses. Progesterone is a precursor, and application of a 3% natural progesterone cream, can result in a rise. DHEA is one of the few steroids manufactured in the brain, and specific location stimulation with the Liss Cranial/Body Stimulators has also been shown to increase DHEA levels. Gigatens™ is a new device, with an output of 52 to 78 billion hertz, at less than 10 microwatts per cm². It is effective in improving the pain of rheumatoid arthritis in a majority of patients, and can markedly

reduce disability from diabetic neuropathy. Preliminary studies suggest that the Gigatens significantly elevates DHEA levels, as it provides these benefits.

Each of the three approaches noted above can raise DHEA levels 40 to 100%, and combining them appears to afford additive benefits.

Adapted from a presentation by C. Norman Shealy, M.D., Ph.D., Seventh International Montreux Congress on Stress.

"Every man desires to live long, but no man would be old."

Jonathan Swift

The Evolution Of Type A Coronary-Prone Behavior

So-called coronary "risk" factors represent increased associations gleaned from studies done in very large populations. Although they may be markers for an increased likelihood for having a heart attack or developing ischemic heart disease, they do not predict absolute levels of risk, explain individual specificity for risk, or account for historical changes of incidence. Numerous reports confirm the important modulating effects of psychosocial variables on biological factors, and one of the best studied is the Type A behavior pattern. The origin of this concept had its roots in the personal observation of heart attack patients. A significant percent had little apparent propensity, based on blood pressure, cholesterol, or smoking profiles. However, there did appear to be a preponderance of personality predispositions, such as impatience, competitiveness and aggressiveness, as well as specific behavioral traits, including increased alertness, muscle tension, rapid and emphatic vocal stylistics, and an overall accelerated pace of activities. Emotional characteristics tended to be characterized by covert hostility, and increased irritation and potential for anger.

The Type A behavior concept subsequently received strong construct validation, and it became apparent that environmental interactions were a predominant influence in the development of this action-emotion complex. It is the manner in which Type A's confront and respond to relevant milieu challenges that seems most important.

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In recent years, a great deal of publicity has been devoted to a so-called hostility component as the most important or predictive component of coronary-prone Type A behavior. However, this hypothesis ignores consistent factual studies that fail to provide support for this contention. There is considerable confusion concerning hostility measurements and ratings, and their significance.

Excessive and inappropriate behavioral competitiveness appears to have seminal importance for most Type A behaviors and is probably the most dominant characteristic of coronary-prone behavior. Its underlying cause may be a covert anxiety that is associated with a deep-seated insecurity and fear of failure.

Adapted from a presentation by Ray H. Rosenman, M.D., Seventh International Montreux Congress on Stress.

Can Hypnosis Influence The Immune System?

It is well known that certain aspects of the human immune system may be influenced by psychosocial factors, including both experimental and naturally occurring stressors. Despite popular belief that the human immune response can be controlled by the mind, there is little scientific evidence to indicate that this is possible and/or clinically relevant. A review of the literature from 1960 to 1994 yielded 57 studies investigating the effects of psychological intervention on immune and inflammatory processes. Several types of psychological intervention have been used, including relaxation techniques, guided imagery, hypnotic suggestion, as well as combinations of several cognitive-behavioral techniques. Also, a variety of *in vivo* and *in vitro* measures have been investigated, including functional measures such as immediate- and delayed- type hypersensitivity skin responses, immunoglobulins in saliva, and lymphocyte proliferative responses to mitogens, natural killer cell activity, and various quantitative measures such as lymphocyte cell counts.

While there seems to be evidence to suggest that a few measures, including immediate-type hypersensitivity (ITH) responses and salivary immu-

noglobulin A may be modifiable, the results are contradictory for most others. These inconsistent results may stem from several methodological differences, including variations in the antigens used, intervention types, and timing of blood samples. Difficulties may also arise from differences in subject characteristics. While the majority of studies have used normal, healthy subjects, a few studies have investigated different patient populations and subjects with a history of psychosomatic diseases. Differences in personality traits, including hypnotic susceptibility, may also play a role. These and other methodological issues including the difficulty of interpreting immune changes in healthy subjects were discussed.

Adapted from a presentation by Robert Zachariae, Ph.D., Seventh International Montreux Congress on Stress.

The Dopamine/Serotonin - Stress Connection

Over the past few decades, it has become increasingly apparent that a variety of brain neurotransmitters play a crucial role in the response to stress. In some instances, altered levels may be responsible for disturbances in mood and behavior, and an increased understanding of such relationships may lead to new and more effective treatment strategies. Thus, the endorphins have potent pain relieving properties, promote euphoria, and have other important influences on mood, and addictive tendencies. These effects can be readily blocked by opioid antagonists such as naltrexone, which has recently been approved for the treatment of alcoholism, and may have clinical applications for other addictions.

In animal studies, drugs which promote serotonin and dopamine actions are effective in reducing addiction to alcohol and preventing withdrawal seizures. It now appears that the combined administration of fenfluramine, a serotonin agonist, and phentermine, a dopamine agonist, can rapidly and consistently alleviate cravings for both alcohol and cocaine, based on experience in 300 patients. Both of these medications have long been used as appetite suppressants for the treatment of obesity. Their

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coupled use is not only effective in promoting weight loss, but can alleviate mood disturbances ranging from depression, anxiety and hostility, to obsessive compulsive disorder according to this report. While there is always the possibility of a placebo effect, this seems unlikely in view of the persistent improvement in depression and loss of craving reportedly maintained for 6 months in 80%.

In addition, this two pronged approach appears to have significant effects on immune system function that may have important clinical implications. Clinical studies report rapid relief of symptoms in sufferers from asthma, allergic rhinitis, urticaria, psoriasis, and inflammatory bowel disease. Most of these patients had been resistant to conventional treatment, with rather remarkable improvement in one such individual suffering from severe idiopathic anaphylaxis.

Obviously, these findings will have to be confirmed by other investigators in carefully controlled double blind studies. However, if corroborated, such a wide range of therapeutic benefits would suggest that many seemingly disparate disorders have some underlying basis involving serotonin and dopamine. Further exploration of this could lead to even more effective treatment approaches in these and other stress related disorders. Some conditions we now view as discrete disorders, may simply reflect different types of neurotransmitter disturbances that could be readily corrected with specific therapies.

Adapted from a presentation by Pietr Hitzig, M.D., Seventh International Montreux Congress on Stress.

The Rejuvenation Of Brain Biofeedback

After a decade and a half of relative inactivity, electroencephalographic (EEG) biofeedback training has resurfaced as a powerful clinical modality with multiple applications and important psychological implications. By increasing fast EEG (beta) rhythms, it has been possible to enhance alertness and improve attention focusing capabilities. This has now been shown to provide benefits in patients with attention-deficit disorders, and to

speed recovery from closed head injury and stroke.

At the other end of the spectrum, increasing slow EEG (alpha and theta) rhythms, facilitates deriving pleasure and satisfaction, and may be utilized to effectively treat a variety of addictions. This approach also helps to suppress the traumatic memories that can trigger episodes of post-traumatic stress disorder.

Powerful new training techniques employ feedback of EEG amplitude ratios, such as theta/beta and delta/beta. This not only facilitates learning how to achieve certain states more rapidly, but may simultaneously adjust the relative balance of cortico-limbic and/or cortico-brain stem events. The psychobiologic implications of neurofeedback-related brain plasticity are enormous, and offer great potential for the treatment of various behavioral and addictive disorders.

Adapted from a presentation by Steven L. Fahrion, Ph.D., Seventh International Montreux Congress on Stress.

Type A - Some Social And Spiritual Aspects

The concept of Type A behavior originally evolved in an effort to explain why a large percent of heart attack patients had none of the risk factors commonly believed to contribute to coronary morbidity and mortality. What they often did exhibit was an emotion-behavior complex characterized by a sense of increased time urgency, competitiveness, aggressiveness, and hostility. While interest in Type A behavior has focused on its medical and psychological aspects, there are larger social and spiritual issues.

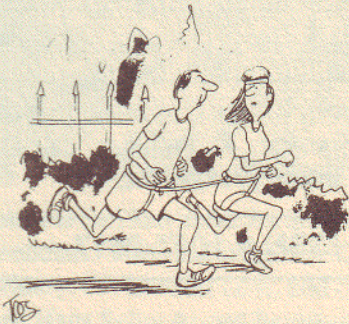
Type A really represents a problem about how we live our lives, and how that affects our health, happiness, and the ability to engage in friendly give-and-take with others. After decades of research into the reduction or modification of Type A behavior, it is clear that this can become a transforming experience for many individuals, regardless of whether they have coronary artery disease. Altering this constellation of behavioral habits can literally revolutionize one's life, if it leads to self-examination, and a change in the basic beliefs that underlie and constantly feed Type A behaviors.

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Such beliefs range from consciously held specific convictions about what it takes to live effectively in the information age, to more basic and often unconscious, self-limiting, "guiding beliefs" about oneself and the world. Often, this may revolve around how to achieve a sense of security in the world. It is suspected that these guiding beliefs are learned responses to the reward-punishment continuances experienced in early childhood. These often become reinforced socially and culturally throughout one's life, leading to certain specific "habits of attention", which, in turn, directly contribute to the development of the overt Type A behavior pattern. However, clinical approaches have been developed that have been effective in modifying not only observable Type A responses, but also their underlying cognitive causes. Although Type A behavior is not the same as stress, it serves as a dysfunctional stress management system. A greater knowledge of the dynamics involved may provide important clues to the distinctions between global Type A and coronary prone behavior.

Adapted from a presentation by Virginia Price, Ph.D., Seventh International Montreux Congress on Stress.



"Gee, Jack, you're not worried I'll beat you, are you?"

Does Psychoneuroimmunology Have Clinical Applications?

Since the concept of psychoneuroimmunology (PNI) was introduced a decade and a half ago, there has been an explosion of interest in this subject. Psychoneuroimmunology is increasingly being used as a buzzword by entrepreneurs to promote products and services with scant scientific underpin-

nings that are often worthless. Unfortunately, the large numbers of these spurious efforts may drown out any applications that might stem from legitimate research, and it is often difficult to separate the wheat from the chaff. It would therefore be useful to review the current status of PNI to better appreciate precisely what the term implies.

Psychoneuroimmunology generally refers to emotional or behaviorally-associated immunological changes, but also includes immunologically-associated behavioral alterations. There is abundant anecdotal evidence that psychosocial factors can influence susceptibility and/or responses to infectious, autoimmune, and malignant diseases, and carefully conducted clinical studies appear to confirm this. This presupposes that there are reciprocal interactions between the nervous, endocrine, and immune systems, and this is supported by the demonstration that immunologic reactivity can be influenced by "stress", hypnosis, Pavlovian conditioning, and other behavioral interventions. In addition, lymphoid tissues are richly innervated with sympathetic fibers, sympathectomy and hypothalamic lesions can alter immune responsiveness, and conversely, immune reactions can alter CNS activity. Moreover, changes in hormone and/or neuropeptide levels can alter immune responses, and *vice versa*. Lymphocytes and macrophages involved in immune activities bear receptor sites for a variety of stress related neuropeptide messengers, but can also produce a variety of hormones such as ACTH, TSH and LH in response to antigenic challenges.

The real question is, what is the practical significance of any of this? All of the above observations clearly demonstrate that psychoneuroimmunology is a legitimate and fertile field of investigation. Although a massive amount of research data has been accumulated, there have been few clinical applications with respect to diagnosis, prevention or treatment of relevant disorders. However, attempts to rectify this have been proposed, and some are already underway. Their status and findings will be reported on at next year's Congress.

Adapted from a presentation by Nicholas Cohen, Ph.D., Seventh International Montreux Congress on Stress.

Book Reviews • Meetings and Items of Interest

Book Review

Human Stress and Immunity, Glaser, R and Kiecolt-Glaser, J (eds.), Academic Press, New York, 1994, 402 pages, \$79.95

This volume provides a compact but comprehensive overview of psychoneuroimmunology. It is refreshingly different than most offerings in this genre since it does concentrate on clinical aspects. The editors have been pioneers in studying stress-immune system relationships in clinical situations varying from student anxiety test performance to loneliness and social isolation in elderly nursing home residents. The list of authors reads like a Who's Who in the field, and the fifteen chapters include such titles as: *The Effects of Stress on Autoimmune Disease, Stress, Immunity and Health, Stressful Events, Psychological Responses, and Progression of HIV Infection, HIV-1, Immunity and Behavior, Stressful Personal Relationships: Immune and Endocrine Function, Psychoneuroimmunologic Aspects of Aging.*

The concluding chapter, *Psychoeducational Interventions and Health Outcomes*, by Fawzy and Fawzy is particularly valuable, and demonstrates the importance of assessing individual baseline scores for both mood and coping as well as change over time. In addition, it demonstrates the ability of educational interventions to improve coping skills, lower stress levels, and promote survival. Similar results have been obtained by others, and more research is required to determine the possible mechanisms involved.

Additional chapters are devoted to the relationship between stress and viral infections, including colds, and herpes, and relevant animal studies and basic science information are also clearly presented in separate offerings. Charts and diagrams are clearly and attractively

presented, and the references in all the chapters are unusually complete and current. This offering probably provides the best summary to date of the complex effects of stress on immune system function, and their clinical implications, and is highly recommended.

Meetings and Items of Interest

June 23-26 ISSSEEM Fifth Annual Conference, "Integrating the Science and Art of Energy Medicine, Boulder, CO, call (303) 278-2228

July 3-7 Sixteenth Cape Cod Institute, Behavioral Medicine Applications, Speakers: H. Benson, A. Domar and A. Webster, call Dr. Gilbert Levin for more info at (718) 430-2307

July 15-21 20th Annual National Wellness Conference, The Theory, Practice, Spirit, and Connection of Wellness, University of Wisconsin-Stevens Point, Stevens Point, WI, call (800) 243-8694

July 17-21 Sixteenth Cape Cod Institute, Psychotherapy and Spirituality 6, Speakers: Agosin Group, call Dr. Gilbert Levin for more info at (718) 430-2307

Aug. 8-12 The 3rd World Congress of Medical Acupuncture and Natural Medicine, "Integrated Complementary Medicine for All in the 21st Century", Edmonton Convention Centre, Edmonton, Alberta, Canada, call (800) 815-1116 or (403) 424-2231

Aug. 12-16 Training in Mind Body Medicine & Ayurveda, Deepak Chopra, M.D., and David Simon, M.D., Boston, MA, call (800) 757-8897

Aug. 21-25 Sixteenth Cape Cod Institute, Sound Mind, Sound Body, Speaker: K. Pelletier, call Dr. Gilbert Levin for more info at (718) 430-2307

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