

HEALTH AND STRESS

The Newsletter of The American Institute of Stress

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NINTH INTERNATIONAL MONTREUX CONGRESS ON STRESS

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Dr. Richard H. Rahe was the recipient of the 1997 Hans Selye Award. He is best known as the co-author of the Holmes-Rahe or Social Readjustment Rating Scale, which was the first scientific attempt to quantify stressful life events, and objectively demonstrate that this could be used to predict the likelihood of future illness. Over the past 30 years, the validity of this approach has been verified by numerous investigators, and it has become the gold standard in the field of stress measurement. Since his original research was based on U.S. males in a fairly circumscribed demographic cohort, hundreds of versions have been devised for other groups and cultures. He has also revised and expanded the scale, and reported at our 1994 Congress that his latest version reveals that life has become 44% more stressful, compared to three decades ago.

Dr. Rahe has made numerous contributions to other areas of stress research, ranging from the influence of stress on serum cholesterol, and the effects of strenuous exertion on various stress related parameters, to the the treatment of prisoners-of-war and hostages, and the design of computer-assisted stress and coping instruments. Last year, he presented a revision of his Stress and Coping Inventory, which contains a new immunosuppression scale, done in conjunction with Dr. George Solomon. A Past President of the American Psychosomatic Society, he has been the recipient of numerous awards, including both the U.S. Navy Commendation and Meritorious Service Award Medals.



Drs. Rahe and Rosch with Hans Selye Award plaque.

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*The Newsletter of
The American Institute of Stress*

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Editor-in-Chief

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A Richard Rahe Mini-Festschrift

The Congress began with a session in honor of Dr. Rahe that included presentations from some of his many distinguished colleagues and students. Töres Theorell, who succeeded Lennart Levi as the Director of the National Institute for Psychosocial Factors and Health at Karolinska Institute, explained how Dr. Rahe's studies in Sweden three decades ago, had stimulated his own interest in the role of stress in coronary heart disease. At our 1992 Congress, he and Bob Karasek presented their research showing how increased job stress, as measured by evaluating the degree of increased responsibility, compared to the amount of control over occupational duties, could predict the likelihood of coronary heart disease and hypertension.

These findings have been confirmed by numerous other investigators, and their approach has now become the standard for measuring job stress. Dr. Theorell reported on a recent large scale study of 45-64 year old men, which showed that those who felt they had little control or decision making latitude over their work, were much more likely to suffer a heart attack, and this was particularly true for younger individuals. Since the perception of having little control in the workplace was often

apparent as much as five years prior to the event, early intervention could prove extremely effective in preventing heart attacks.

Dr. Stewart Wolf, our first Hans Selye Award recipient, with whom Dr. Rahe had worked under a National Institute of Mental Health Fellowship, discussed "The Elusive Secret Of Essential Hypertension". He emphasized that although the cause of most hypertension is still unknown, there is good reason to believe that it results from neuroendocrine and other physiologic adjustments to perceived stress that have developed over the course of evolution. Dr. Ray Rosenman, co-originator of the Type A Hypothesis, and another prior Hans Selye Award recipient with whom Dick also collaborated, debunked several popular myths. These included the lack of relationship between diet and both serum cholesterol and coronary heart disease, the very limited value of salt restriction in treating hypertension, the absence of any good evidence that hyperactive cardiovascular responses to stress can cause sustained hypertension, and the fallacy of the widespread belief that hostility is the component of Type A behavior responsible for the development of coronary heart disease.

Dr. George Solomon, who coined the term psychoimmunology over 30 years ago, entitled his presentation, "The Role of Psychiatry in Medicine". He lamented the increasing dehumanization of medical practice that has resulted from growing technologic advances, and an emphasis on cost containment. He pointed out that psychoneuroimmunologic research has now demonstrated a biologic role for humanism, especially in chronic disorders. He also argued that because of its roots in psychodynamics and neurophysiology, psychiatry should become an integral part of medical care. He feels confident that its proper utilization would not only save lives and actually cut costs, but also markedly improve the quality of life, by restoring the dwindling and essential ingredient of humanism. Finally, Dr. Tracy Veach, who is currently working with Dr. Rahe, outlined the development of the Stress and Coping Inventory. He also demonstrated how this is being applied in a clinical setting to teach individuals how to develop coping skills and reduce stress.

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Post-Traumatic Stress Disorder And Job Stress

A session on Post-Traumatic Stress Disorder was again organized by the International Critical Incident Stress Foundation. Appropriately enough, it began with a presentation by Dr. Rahe dealing with his past experiences and current investigations into the assessment and treatment of hostages and prisoners-of-war. Dr. Jeffrey Mitchell, President of the Foundation, reported on their experience with the recent TWA Flight 800 disaster. This situation was different than most of those usually encountered, since it necessitated dealing not with survivors, but relatives and close friends from diverse backgrounds and cultures. Group therapy sessions were difficult to coordinate, since most of those affected did not live in the New York area, and had never previously met any of the others involved. The absence of any explanation for what caused this catastrophe was also somewhat unique, and contributed to sustained stress levels. Other papers described the problem of Post-Traumatic Stress Disorder in mental health care providers working in war torn Yugoslavia, and adolescent Bosnian refugees living in shelters in Slovenia. A proposal was also outlined for the establishment of international standards for crisis intervention care.

Dr. Kenneth Pelletier chaired the session on advances in the detection and management of job stress. He provided an update of the ongoing Stanford Coronary Risk Intervention Project, and more recent efforts aimed at aggressive intervention for those with established disease or at very high risk. He also discussed the establishment of the new "Center of Excellence for the Prevention and Treatment of Cardiovascular Disease". This national program provides a complete range of aeromedical services designed to prevent pilots from losing their certification, and to assist others who have been decertified to return to work. The focus is again on coronary heart disease, which accounts for about half of the patient population, followed by seizures and other neurologic disorders, diabetes, alcoholism, drug abuse and other psychological problems. Many of these disorders are stress related. The loss of a trained senior pilot

is extremely expensive, and early detection, as well as insisting on standards that are stricter than the current FAA requirements, should provide significant health benefits, and be highly cost-effective. Because it is difficult to reach such a highly mobile and widely distributed population, a unique interactive mail and phone program has been developed. It provides computer-generated feedback based on a clinical algorithm that interprets and monitors various relevant parameters that are tailored for each individual. This novel approach appears to be both effective and efficient, and could serve as a model for other occupational groups.

Numerous surveys have confirmed the significant and progressive escalation in job stress all over the world. Dr. James Quick, Editor of the *Journal of Occupational and Health Psychology*, emphasized that the nature of job stress is also changing, because of the global nature of the marketplace, intense competition, as well as the rise in technological advances, and increasing hostile takeovers, mergers and acquisitions. These growing new problems will require novel approaches and strategies, both with respect to programs and personnel. With respect to the latter, he outlined the need for a facility headed by a Chief Psychological Officer, to monitor and serve as the guardian for the health of 21st Century organizations. This individual would not only be responsible for coordinating prevention and treatment services, but also health surveillance activities. Such an Organizational Health Center model already exists in the Air Force. It tracks such things as workers' compensation costs, behaviorally-related deaths and suicides, to determine trends so that effective preventive measures can be instituted.

Dr. Lennart Levi, another prior Award recipient, reviewed various studies on work conditions in the 12 member states of the European Union. These have revealed that the unemployment rate remains disturbingly high, and that the profile of the work force has been changing in several respects. There has been a rapid growth in the proportion of female workers, and traditional employee/employer relationships are slowly disappearing. European workers now tend to be older and more apt to be on fixed

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term or temporary contracts. The latest report by the newly assembled European Commission Ad Hoc Group on "Work-Related Stress", was released only a few months before the Congress. It agreed with prior conclusions that more research needed to be done on the health effects of job stress, particularly in regard to the preventive benefits that can be provided by educational and training programs. However, it seems apparent that there has been a shift in focus to financial repercussions. The highest priority will now be given to projects "which are likely to have a direct impact, in terms of competitiveness and quality of life, and will therefore respond to the concerns of European enterprises and citizens". Dr. Ronald L. Rubenzer reviewed "The ABC's of Job Stress Reduction That Increase Production", and Dr. Deborah Rozman provided an update on the innovative approach of the Institute of HeartMath utilizing the "Freeze-Frame" stress reduction technique, which has been found to be extremely effective in four diverse occupational settings.

Stress Reduction Effects Of Smells And Sounds

A major thrust of this Congress was devoted to exploring the psychophysiologic effects of subtle energies. As noted in previous Newsletters, Japan has been in the forefront of research in this area, particularly with respect to identifying clinical applications. They have experimented with natural sounds and special rhythms and harmonics for decades, as well as various forms of electromagnetic and photic stimulation. In recent years, there has been an increased interest in the psychophysiologic effects of different odors. Aromatherapy is now being utilized by some companies to produce either stimulating or calming effects at appropriate times of the day, much as Musak is employed in the United States and Canada. Certain scents are introduced into the circulating air at busy train stations to reduce the stress of rush hour traffic, when passengers are literally pushed and packed into crowded compartments. At a previous Congress, Dr. Hisanobu Sugano, of

Fukuoka City, reported on his research showing that infants could correctly identify milk from their mothers from nine other specimens, due to olfactory signals. This year, he discussed his studies dealing with the effect of subtle energies on healing, which were designed to demonstrate that they were not merely placebo responses. Experiments using non-contact therapeutic touch showed that this produced an increase in alpha waves during healing, as had been previously demonstrated with meditation. There were also observable changes in the energy of relevant meridians, which were synchronous with alterations in blood pressure, heart rate, peripheral blood flow and perspiration during healing, suggesting that such energies also influence autonomic nervous system function.

The classical composer, Peter Hübner, chaired a session dealing with the stress reduction effects of music, rhythms, and tones. His Medical Resonance Therapy Music compositions are computer-created to conform with natural harmony laws originally proposed and promulgated by Pythagoras. They have been shown to reduce pain, anxiety, and duration of hospitalization in a variety of medical facilities and clinical settings over the past decade, and also to improve immune system function. His presentation dealt with a mathematical analysis of several of the great compositions of legendary European composers. He demonstrated that in their use of the fugue, counterpoint, polyphony, and integration of polytonality and polyphony, they had intuitively followed the same precepts.

Dr. Deborah Rozman discussed the influence of music on the autonomic nervous system and the endocrine system, with a particular emphasis on its stress reduction effects. It has long been known that music can affect mood and emotions, and this has been utilized clinically to relieve stress, anxiety, depression, and pain in patients recovering from surgical and dental procedures, as well as heart attacks. In addition to such anecdotal reports, other more objective physiologic effects can be demonstrated, including changes in electrodermal skin responses, muscle tension, vasomotor tone, respiratory rate, and cardiovascular parameters such as blood pressure, heart rate, and rhythm. These are

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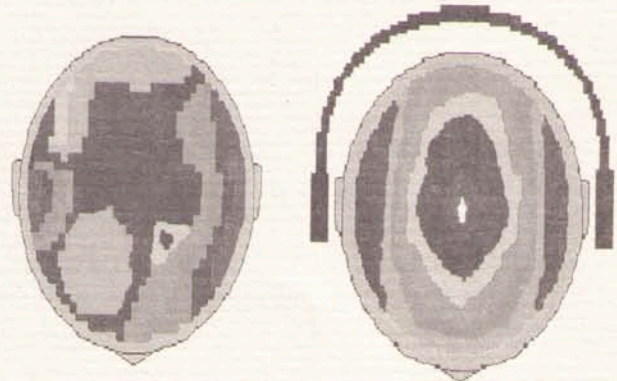
mediated by the autonomic nervous system, which has close links with endocrine and immune system activities. Prior research had shown that certain "designer music" compositions can produce concomitant and correlative changes in both immune and autonomic system measures. This new study examined the effects of listening to music specifically designed to reduce stress and autonomic imbalance, while practicing a special "Heart lock-in" technique. After one month, in addition to improved autonomic function in four out of five, DHEA measurements increased by 100 percent, and cortisol levels were lowered 23 percent.

Carol Sabick, from Madrid, who represented The Monroe Institute, also discussed the effects of sound on the psyche, and the use of auditory stimuli to alter mood. Sophisticated EEG studies have shown that an increase in delta-theta wave activities reflect a feeling of relaxation and well-being, and are also associated with improved creativity, especially when there is hemispheric synchronization. Such states are often described by practiced meditators, and may be due to a marked reduction of cognitive activities that contribute to anxiety, depression, and stressful thoughts. This forms the basis of Hemi-Sync, which utilizes tones embedded in relaxing music or ocean surf sounds. These tones are different in each ear, and when simultaneously heard, create an auditory phenomenon called binaural beating. When the beats are in the delta (1-4 Hz) and theta (4-8 Hz) range, these brain waves start to become more prominent, and there is an associated feeling of relaxation. When tapes or CD's with various blends and sequences of sound patterns are listened to on a regular basis, it becomes progressively easier to achieve a similar state spontaneously in a relatively short period of time. Some of the tapes include verbal instructions that facilitate this learning process.

A similar phenomenon is described by those who have become proficient in attaining deep states of relaxation through alpha-theta EEG biofeedback. As with Peter Hübner's compositions, these results are not dependent on whether the music is perceived as being pleasant, or enjoyable. Rather, they appear to be due to the ability of certain

rhythms or forces to access poorly understood energy channels in the body.

The Hemi-Sync was developed by the late Robert Monroe, who worked with neurophysiologists, mental health professionals, biochemists, physicists, biochemists, electrical engineers, and others, to perfect this patented technology. Ongoing studies at The Monroe Institute are designed to further explore the mechanisms of action that are involved in achieving this sustained state of tranquillity, coherence, and enlightenment. It has been suggested that this is achieved by energizing channels of communication between the two brain hemispheres, which in turn, promotes a greater degree of harmony and synchronization, as illustrated by the computerized EEG pattern analyses below.



Notice the complete lack of any symmetry or synchronization of right and left brain hemispheres.

Symmetry of right and left brain after a few minutes of listening to Hemi-Sync on stereo headphones.

Gabor Lednyiczky of the Hippocampus Institute in Budapest, presented another stress reduction device based on a stabilization of endogenous electromagnetic oscillations, using The Cerebellum Multichannel Biofeedback Instrument. This produces ECG-like vectors summarizing information obtained from 16 channels that monitor various electrophysical and metabolic characteristics using strategically placed large surface electrodes. Evaluation of responses to test substances and other interventions can provide additional information. Many of the underlying precepts of this approach are reminiscent of the concept of orgone energy proposed by Wilhelm Reich a half century ago, and are supported by electroacupuncture measurement. In addition to its electrodynamic testing capabilities, the device also can be used therapeutically.

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Psychophysiologic Effects Of Electromagnetic Fields

Since all life on earth evolved under geomagnetic influences, it should come as no surprise that every cell, tissue, and organ in the body has certain electrical and magnetic characteristics. These are associated with, and quite essential for normal function and health. Indeed, it is their absence, as assessed by lack of ECG and EEG activity, that is the ultimate criterion for death. How electrical balance or homeostasis is maintained and regulated is not known. However, it is clear that infinitesimally weak electrical signals can exert significant biologic effects, ranging from influences on mood and behavior, to basic mechanisms governing cell growth. As we have suggested previously, it seems plausible that internally generated feeble forces may have similar effects. Thus, EEG waves may represent signals being sent to specialized receptor sites on cell walls, rather than merely reflecting the noise of the machinery of the brain. This has important implications for widely acknowledged but poorly understood phenomena such as the placebo effect, and the association of spontaneous remission in cancer with a strong faith.

It is important to emphasize that except for rare magnetic pole reversal, random lightning, and solar storms, the earth's electromagnetic environment has remained fairly constant for several hundred million years. All of this changed when Thomas Edison built the first electrical power generating station in New York only a century ago. Since then, there has been a progressive escalation of additional artificial intrusions, including gamma rays, X-rays, ultraviolet, infrared, microwave, and radio wave emanations. The possible adverse health effects of these and other man-made environmental pollutants, which may potentiate their damage, is currently the subject of heated debate.

It has been proposed that new disorders like chronic fatigue syndrome and fibromyalgia, and symptoms of pain, weakness and depression in other patients, may be due to depletion of magnetic energy in certain tissues, or interference with utilization. Support for this comes from anecdotal reports of marked improvement in energy levels, as

well as reduction of pain and inflammation, following electromagnetic field therapy. Studies in animals and children, as well as indisputable proof of accelerated healing in bone fractures and soft tissue injuries, confirm that these are not placebo effects.

The communication pathways that might mediate these effects have not yet been identified. The reported superior results obtained by application of electromagnetic stimuli at specific acupuncture sites are reminiscent of some ancient Oriental and Eastern precepts. Dr. Eric Leskowitz discussed the interfaces between our view of biomagnetic energy and anatomical design with traditional Chinese medicine, which emphasizes an appreciation of non-physical life energy or *Qi*, that encompasses both form and structure. He outlined the possible relationships between *Qi* (*chi*), *prana*, and *chakras*, with areas of structure and function upon which our biological model is based, particularly with respect to the endocrine system.

In a separate presentation, he discussed the use of the BioCircuit, which consists of copper handles held in both hands, connected by copper wires to copper screens placed over the thymus and solar plexus. This purportedly connects various body energy centers to create a natural circuit that "balances and realigns" natural energy flow in the body, and corrects any disturbances in polarity of the human bioelectric field, without the use of any external power source. Widely promoted in popular catalogues as a stress reduction aid, enthusiastic proponents claim that after just 30 minutes of application, they experience a feeling of deep relaxation and enlightenment, similar to that reported by accomplished meditators. Dr. Leskowitz, who is a physician in private practice in Massachusetts, explained how he has used the BioCircuit to enhance the efficacy of other forms of therapy, especially acupuncture.

In recent years, there has been a resurgence of interest in the clinical use of permanent magnets. These can be made of iron, alnico alloys, neodymium, and other rare earth metals. They are available in all sorts of shapes, sizes, strengths, and methods of application, including pillows, mattresses, seats, and back supports. Although some

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claims of efficacy appear rather extravagant, results in children and animals again show that these are not all placebo responses. Further proof of this was provided by a paper demonstrating the effects of Tectonic magnets on neurotransmitter levels, and another providing vivid photographs of how they remarkably reduced post-operative inflammation and bruising within 24 hours. Professor Holger Hannemann from Switzerland indicated that magnetic fields in the body can fluctuate due to various stresses. These changes can be measured by sophisticated methods and instruments, and deficiencies or derangements can be corrected by applying a magnetic field of specific strength and duration at precise sites.

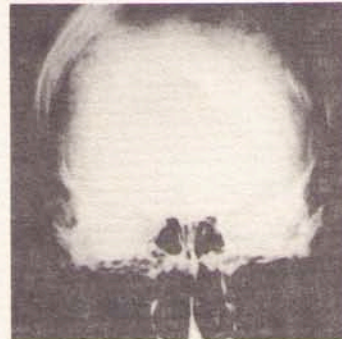
Dr. Konstantin V. Sudakov, President of the Regional International Stress Management Center of the USSR Academy of Medical Sciences, discussed his research on the influences of electromagnetic fields on emotional reactions in laboratory animals, indicating their possible clinical implications. Dr. Martin Blank of Columbia University, President-elect of the Bioelectromagnetic Society, reviewed his studies of heat shock proteins, which demonstrate that electromagnetic fields stimulate stress responses at a cellular level in a manner identical to that seen with other stressors, and this may have direct effects on DNA. Dr. Mario Martinez, a neuropsychologist from Nashville, stimulated a lively discussion period with his paper entitled "Stress, A Quantum Event With Chaotic Features". Since Newtonian physics can't explain many of the above observations, quantum physics and chaos theory are now required to incorporate new information, and to blend Eastern philosophy with Western mind/body research.

Electromagnetic Therapy

A major portion of the Congress was devoted to a discussion and demonstration of different electromagnetic devices. Professor Wolfgang Ludwig of Germany, the inventor of the Medicur, Medisend, and other instruments for relief of pain and stress, discussed the use of high frequency magnetic fields to produce analgesia in patients suffering from various types of headache and arthritis. Roger

Coghill, from the U.K., who had organized the First World Congress on Magnetotherapy under the auspices of The Royal Society of Medicine last June, discussed the clinical use of the Medicur unit for the treatment of pain. In another excellent paper, he reported on the results of a double blind study with the Max Stress Controller for the treatment of insomnia. Over 100,000 units have been sold to date. Dr. Eugene Yumatov, General Director of the Regional International Stress Management Center in Moscow, also reported on electromagnetic instrumentation he has developed for coping with problems of sleep and stress.

The most startling and stimulating presentation was by Dr. Demetrio Sodi Pallares from Mexico City, who demonstrated the remarkable results of his metabolic and magnetotherapy treatment of far advanced cancer and terminal heart disease. The X-ray below is from a 32 year old female with severe pain from extensive metastatic breast cancer destruction of the upper and lower extremities and skull.



She improved rapidly and remarkably with treatment, and now has no pain or other complaints, works full time as a biochemist, and leads a completely normal life. The X-ray below taken after 3 months of treatment shows complete healing of the parietal bone destruction previously seen.



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The Tenth Congress

Since Dr. Sodi Pallares' important research encompasses and brings together a number of themes developed at this and prior Congresses, they will be discussed in greater detail in a subsequent Newsletter, and hopefully expanded on at our next Congress. Space constraints also make it impossible to review excellent presentations dealing with psychoneuroimmunology (Dr. Kurt Zanker), magnetized water for pain relief (Dr. Carlton Hazlewood), new uses for EMDR (Professor Marcy Smith), the stress reduction effects of adaptogen supplements (Dr. Ben Tabachnik), and several others. Because of an embarrassment of riches, it was impossible to accommodate all the papers submitted. However, several were so informative, compelling, and germane, that their abstracts were also included in the Program.

As a result, our next Congress, which will be our Tenth Anniversary, will be conducted at the nearby magnificent Montreux Convention Center, which is the venue for the Montreux Jazz Festival. This will allow us to now provide adequate space and time for workshops, extensive exhibits, poster sessions, and, if necessary, conduct simultaneous scientific sessions. A plenary session on stress in politics to include Jacques Chirac, Helmut Kohl, and Vice President Gore is being planned, and we hope to devote a full day to the growing problem of job stress, with a particular focus on how this is being addressed by the European Union. The dates for our tenth jubilee celebration have not yet been set, since this will depend upon the availability of the Convention Center and the schedules of these dignitaries.

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

BOOK REVIEW: *Integration of Eastern and Western Psychosomatic Medicine*, Ikemi, Y., ed., Kyushu University Press, Fukuoka, 1996, \$45.00

Professor Yujiro Ikemi received the Hans Selye Award at our 1992 Congress in recognition of his numerous contributions to psychosomatic medicine. He has devoted much of his life to integrating Eastern philosophies with current Western concepts, such as George Engel's biopsychosocial approach. Thus, Ikemi's biopsychoeological model of health, also emphasizes the need to interact with our natural environment, as well as with each other. His landmark study of spontaneous remission in cancer which demonstrated that a strong faith was the common denominator, has now been confirmed by others.

This pithy volume presents his writings on the above, various dermatologic and gastrointestinal psychosomatic disorders, the concepts of *Qi* and subtle energy medicine, the stress reduction effects of acupuncture and yoga, how to obtain self-control over stress, the significance of sports, religion and the arts from the Oriental viewpoint, and numerous other topics of interest. Relevant contributions from his students and colleagues are also included. The presentation is unique, in that it utilizes sophisticated technologies such as positive emission tomography to explain ancient Oriental practices that have stood the test of time. In addition, Professor Ikemi skillfully explains how an understanding of psychosomatic disorders can help to integrate Occidental and Oriental thinking. This book provides important insights into an understanding of why we are apt to become ill or stay healthy, and is highly recommended.

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