The American Institute of Stress

HEALTH AND STRESS

Your source for science-based stress management information

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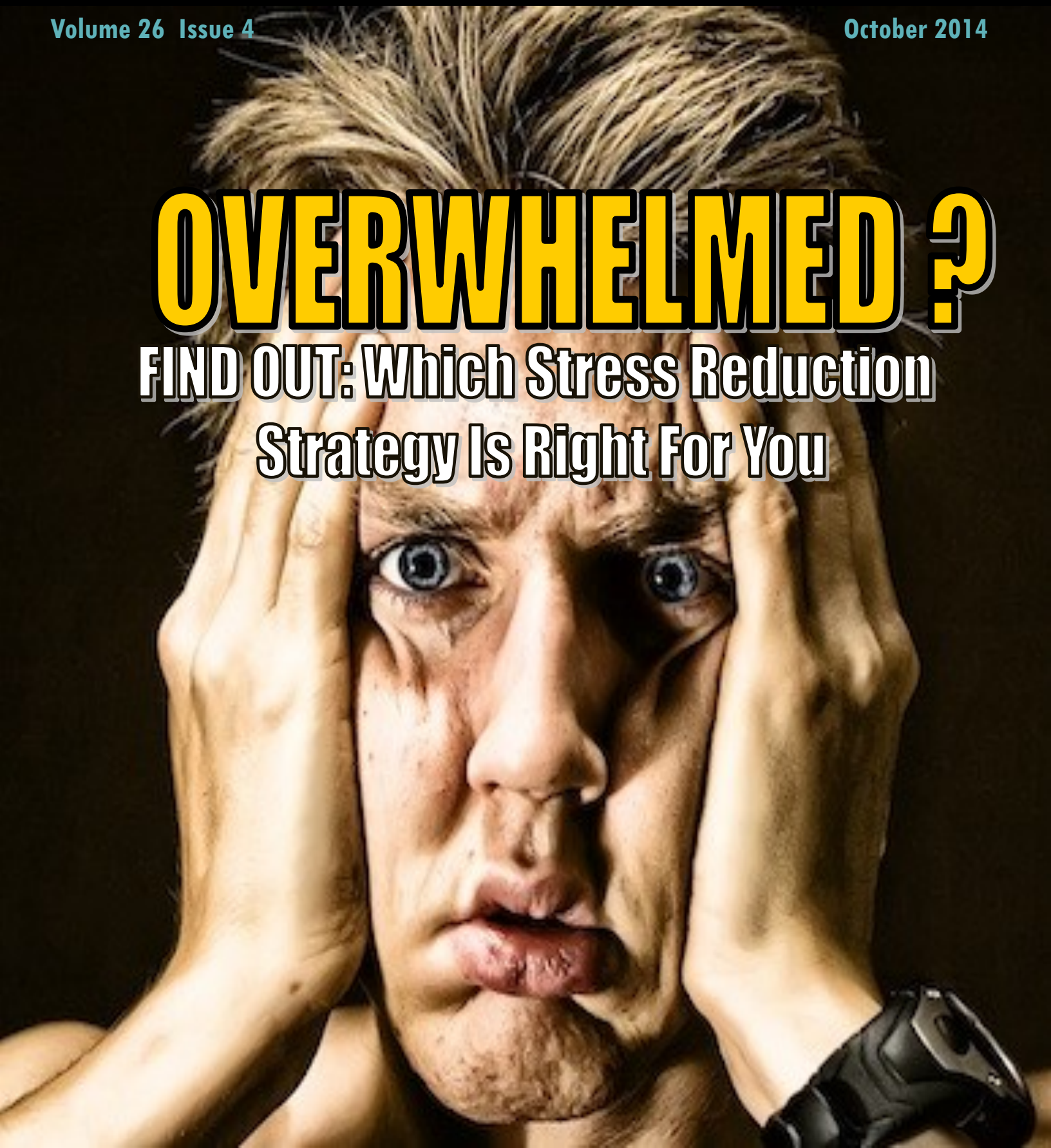

OVERWHELMED ?

FIND OUT: Which Stress Reduction Strategy Is Right For You

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AIS provides a diverse and inclusive environment that fosters intellectual discovery, creates and transmits innovative knowledge, improves human health, and provides leadership to the world on stress related topics.

Your source for science-based stress management information

HEALTH AND STRESS

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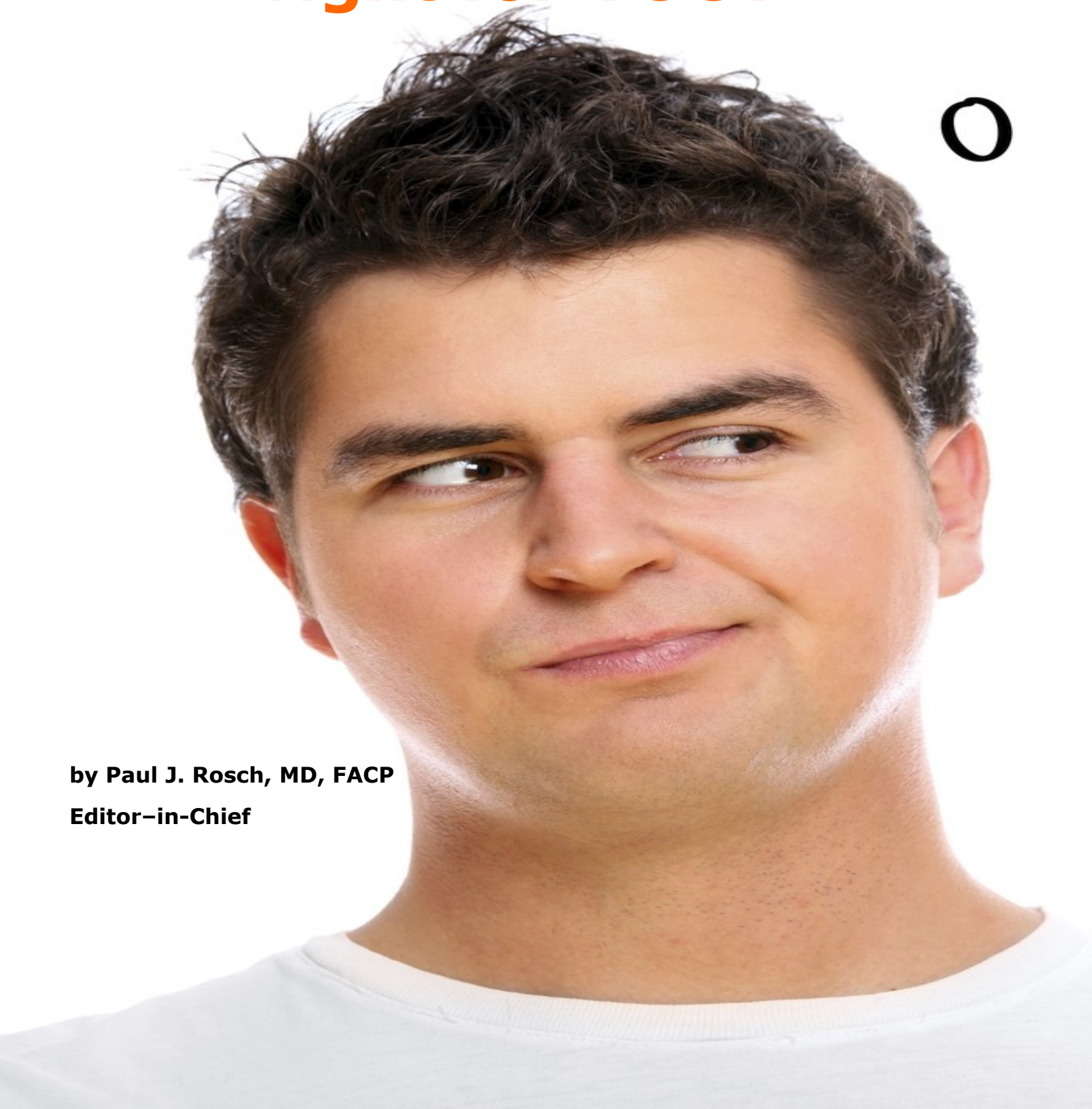
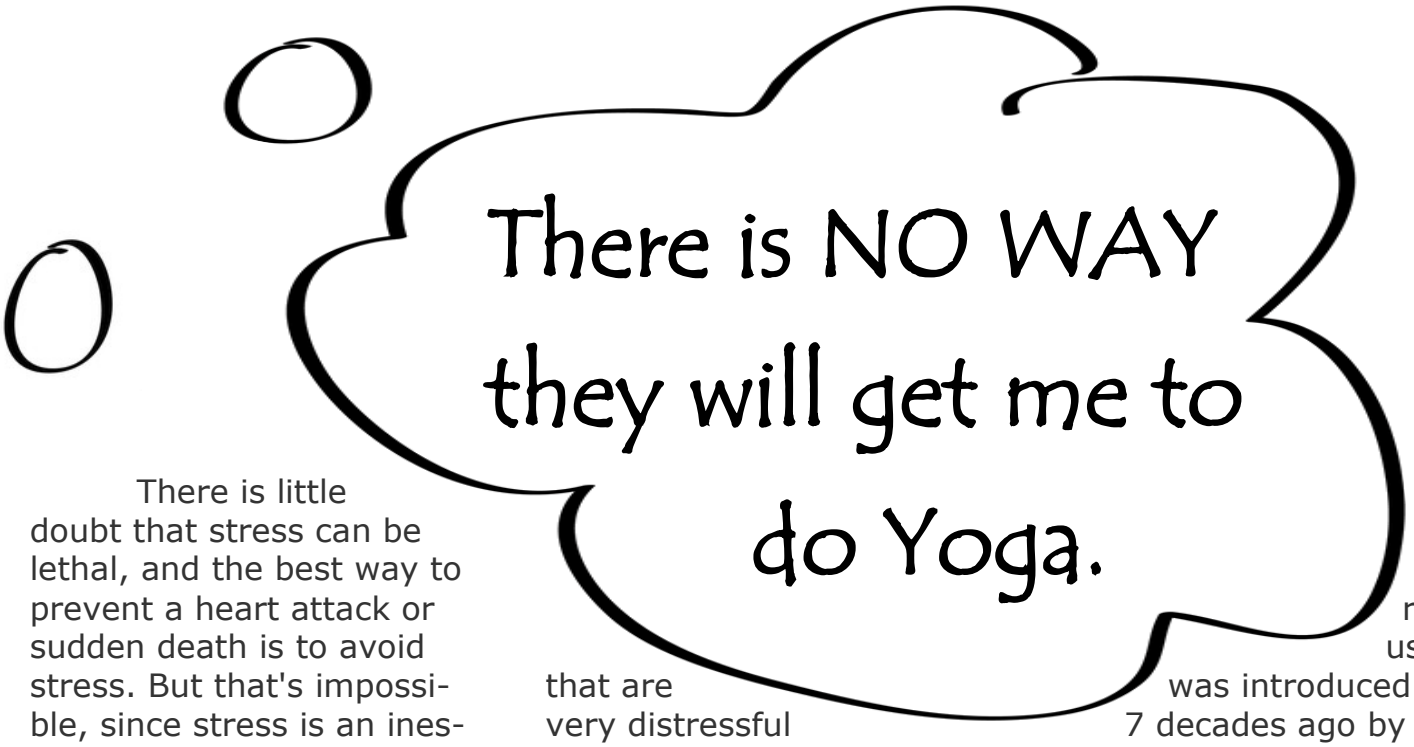
Stress Reduction Strategies abound– but which one is right for YOU?



by Paul J. Rosch, MD, FACP

Editor–in-Chief



There is little doubt that stress can be lethal, and the best way to prevent a heart attack or sudden death is to avoid stress. But that's impossible, since stress is an inescapable consequence of life. There are some stresses you can do something about, but others, such as the death of a loved one, that are beyond anyone's ability to prevent or control. The trick is learning how to distinguish between the two so you don't waste your time and talent in a frustrating attempt to overcome insurmountable obstacles. There are also numerous and varied stress reduction techniques and programs designed to minimize the myriad harmful health effects of stress. However, there is no guarantee that any of these will be effective and no algorithm to predict which might be best for any specific situation or individual. As will be seen, stress can differ for each of us, and things that are very distressful for some can be highly pleasurable for others. People may also respond to an identical threat in very different ways. So what exactly is stress? There is no definition that everyone accepts, and if you can't define stress how can you measure it? As Lord William T. Kelvin, the 19th century mathematician-physicist who developed the absolute or Kelvin temperature scale and revised the Second Law of Thermodynamics wrote, "To measure is to know", and "If you cannot measure it, you cannot improve it."

On The Origin and Evolution of Stress and Diseases of Adaptation

This has always been a problem since stress, as it is currently used, was introduced over 7 decades ago by Hans Selye. He had observed that if experimental animals were subjected to severe threats, they all developed certain distinct pathologic changes within the next 24-48 hours regardless of the cause. These included: exposing rats to brilliant lights after their eyelids had been stitched back, constant irritating and deafening noise, frigid temperatures, scorching heat, or forcing them to constantly swim to avoid drowning. All of these produced the identical triad of enlargement of the adrenal cortex, shrinkage of the thymus and lymphoid tissues and ulcerations in the lining of the stomach. Extreme cold or heat could cause frostbite or burns, bright lights and blaring noise might damage the eyes or

ears, but these were specific responses. Due to Pasteur's research and Koch's postulates, physicians had been taught that every disease had its own cause. Tuberculosis was caused by the tubercle bacillus, pneumonia by the pneumococcus, rabies, anthrax, and cholera by other microbes, etc.

What Selye proposed was the antithesis of this, namely that very different and even opposite physical challenges such as extremes of heat and cold produced identical pathological changes in certain organs and systems. Selye referred to this syndrome as "biologic stress," which he defined as "*the nonspecific response of the body to any demand for change.*" He published his findings in a 74-line Letter to the Editor of the British journal *Nature* in 1936 entitled "A Syndrome Produced by Diverse Nocuous Agents." But the word "stress" never appeared, since it was then commonly used to refer to nervous strain, especially in women, and the editor thought this would create confusion. As a result, Selye substituted "Alarm Reaction" to describe this response, since he viewed it as a "call to arms" of the body's defenses. He later showed that if the noxious stimulus persisted, a second "Stage of Resistance" ensued, during which these defense mechanisms were maximized. This was followed by a "Stage of Exhaustion," in which defenses disappeared and the animals often died. During the course of this three-phased response, which he called the "General Adaptation Syndrome," he observed gross and microscopic changes in various organs and structures similar to those seen in patients with cardiovascular, gastrointestinal, kidney and other disorders. He viewed these as "Diseases of Adaptation."

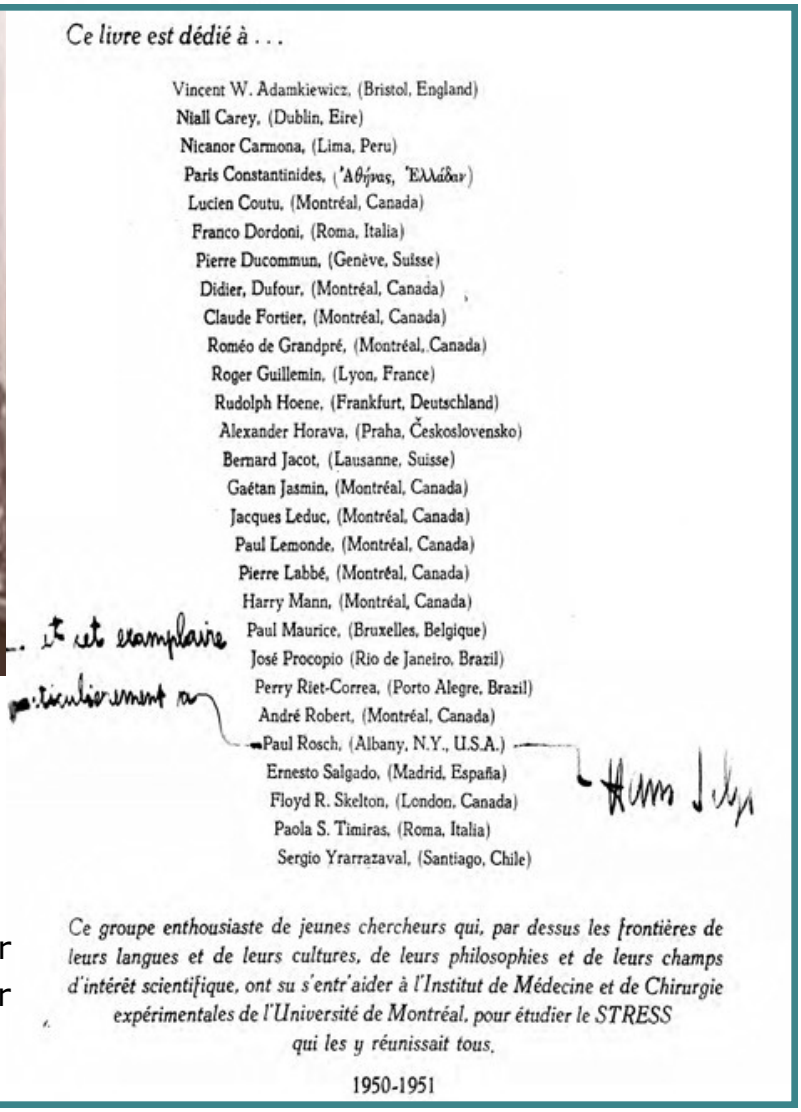
This created numerous problems when attempts were made to extrapolate Selye's animal studies to humans. Many of these experiments that bordered on torture would never be tolerated today. Nor did they represent the types of stress that people encountered in their daily lives, such as frequent fights with customers, coworkers or family, getting stuck in a traffic jam on the way to an important appointment, as well as chronic poverty, depression and discrimination because of race, religion, gender or age. What resonated most with the public was Selye's contention that such chronic insidious emotional stresses could cause health problems just as serious as those resulting from acute and severe physical stress. Although stress soon became a popular buzzword to describe the adverse effects of distressful emotions, it was used not only to describe these symptoms, but more often, what was responsible for causing them, like problems at work, or the end result, such as an ulcer or heart attack. As a result, he had to coin a new term, "stressor," to distinguish between stimulus and response.

The word stress evolved from the Latin *strictus* (tight, narrow) and *stringere* (to draw tight), which became *strece* (narrowness, oppression) in Old French, and *stresse* (hardship) in Middle English. Although fluent in English, Selye was not aware that stress had been used for centuries in physics, where it essentially meant stressor. As expressed in Hooke's Law of 1658, the magnitude of an

external force, or stress, produces a proportional **amount of deformation, or strain**, in a malleable metal. This refers to the property of a material that allows it to resume its original size and shape after having been compressed or stretched by an external force. This ratio of stress to strain or modulus or elasticity is a characteristic property of each material, and is high for rigid metals such as steel, and low for flexible ones like tin. Selye often complained to me that had his knowledge of English been more precise, he would have gone down in history as the father of the "Strain" concept.

I first met Selye following the 1950 publication of his magnum opus *Stress.* It was a massive tome with over 1,000 pages, more than 5,000 references and numerous illustrations and diagrams that stimulated thousands of articles in scientific journals throughout the world. He decided to reference these in an *Annual Report On Stress* and the 1951 book was dedicated to the 28 physicians who were then Fellows, as noted below.

Selye pouring some champagne for us to celebrate the completion of his 1951 *First Annual Report on Stress.* As noted in the dedication to the right, I was the only one from the U.S and believe that Roger Guillemin, who later received the Nobel Prize for discovering the endorphins, is the sole other survivor of this group.



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Ce groupe enthousiaste de jeunes chercheurs qui, par dessus les frontières de leurs langues et de leurs cultures, de leurs philosophies et de leurs champs d'intérêt scientifique, ont su s'entr'aider à l'Institut de Médecine et de Chirurgie expérimentales de l'Université de Montréal, pour étudier le STRESS qui les y réunissait tous.

1950-1951

Selye had previously asked me to proof some of his articles prior to submission because he was aware that I had an M.A. degree in English literature and taught English prior to entering medical school. This may explain why I was assigned to assist with this first update. From the varied responses that were collected, it was quite clear that his concept of stress was not only controversial, but also very confusing. This was best summed up by one critic, who, based on verbatim citations from Selye's own writings, complained in the *British Medical Journal*, that "*Stress, in addition to being itself, was also the cause of itself, and the result of itself.*"

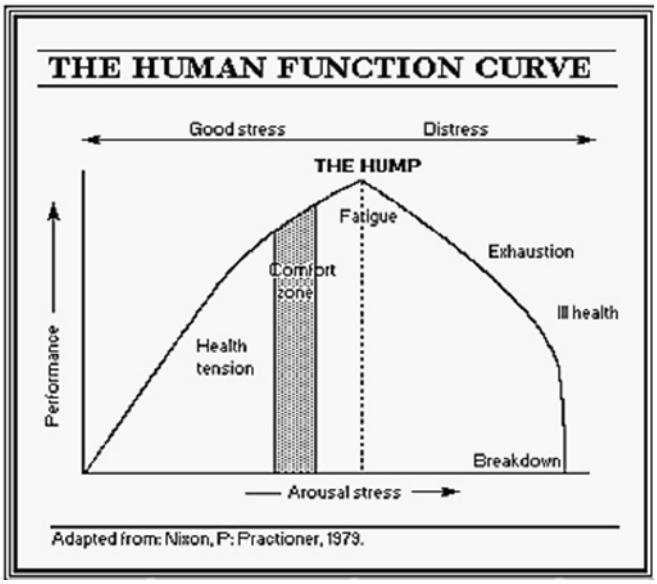
Is it *Le Stress* or *La Stresse*? Can Stress Be Translated? Is There Good Stress?

Selye's definition of stress as "*the non-specific response of the body to any demand for change*" created difficulties that plagued him the rest of his life. It was not useful for physicians or researchers, and in an attempt to make it more meaningful, he subsequently redefined it as "*the rate of wear and tear on the body.*" That's an apt definition of biological aging but it was equally abstruse and useless. In his later years, when he was repeatedly asked to define stress, his standard response was "*Everyone knows what stress is, but nobody really knows*." The situation became even more complicated when his articles had to be translated into foreign languages since there was no suitable word or phrase that conveyed what he meant, especially because he had confused stress with strain.

When invited to give a keynote address at the prestigious *Collège de France* in 1946, the academicians responsible for maintaining the purity of the French language struggled with this problem for several days. They eventually decided that a new word would have to be created. Apparently, the male chauvinists prevailed and *le stress* was born, quickly followed by *el stress*, *il stress*, *lo stress*, *der stress* in other European languages, and similar neologisms in Russian, Japanese, Chinese and Arabic. Stress is one of the very few words that are preserved in English in these and other languages that do not use the Roman alphabet. As usual, "the Greeks had a word for it." Twenty-four centuries earlier, Hippocrates had taught that disease was not only *pathos (*suffering), but also *ponos*, (toil), as the body fought to restore normalcy. While *ponos* might have sufficed, contemporary Greeks also settled on "stress."

As previously indicated, stress is also difficult to define because it differs for each of us. A steep roller coaster ride or bungee jumping from a great height can be very distressful for some, but an exhilarating delight for others. And we may all respond differently to the same stressor. Some people experience chest pain, palpitations, diarrhea or other GI complaints, whereas others develop hives, neck and low back pain due to muscle spasm, or cold, sweaty palms. In addition, stress is not always necessarily distressful or damaging. Winning a close race or election may be just as or even more stressful than losing, but likely does not have the same psychophysiological consequences. A very passionate kiss and anticipating what might follow is stressful, but hardly the same as contemplating a

lengthy root canal procedure. Selye referred to these types of pleasurable stress as "eustress", and suggested that eustress could buffer or counteract the harmful consequences of distress.



Increased stress improves performance and productivity, up to a point, after which things start to deteriorate, as illustrated in this 35-year-old diagram above. But the amount of stress that results in optimal performance also differs for each of us. It's very much like the tension exerted on a violin string. Not enough produces a dull, raspy sound and too much makes an irritating shrill, noise, or snaps the string. However, just the right amount of tension creates a beautiful tone. Similarly, we have to find the right amount of stress that allows us to make pleasant music in our daily lives.

Hormesis, Mithridatism, Lucrezia Borgia, Friedrich Nietzsche, Epictetus

Repeated exposure to small amounts of stress can also buffer or provide protection from the harmful effects of large doses. This paradoxical and opposite action of high and low doses was first described in 1943 when researchers extracted a chemical that inhibited the growth of wood-decaying fungi. Since this could have commercial potential, they wanted to determine the least amount that would be effective. To their surprise, they found that very weak concentrations actually had the reverse effect of stimulating fungal growth. They called this phenomenon hormesis, from the Greek word *hormáein,* "to set in motion, impel, urge on, excite." (This is also the origin of hormone, a term coined by Ernest Starling in 1904 to describe a substance produced at one location in the body that is carried via the blood to stimulate some distant site, such as the secretions from ductless endocrine glands.) Small doses of anything exhibiting hormesis would have the opposite effect of large doses. Alcohol is believed to have a beneficial hormetic effect on the heart since modest intake tends to prevent myocardial infarction. But the reverse is also true. During World War II, when supplies of penicillin were in short supply, reducing the dose was found to actually stimulate the growth of staphylococci.

Hormesis is often used today to describe the observation that chronic exposure to tiny amounts of a poison can provide subsequent protection from what might have been a lethal dose. Two decades ago, scientists found that fish died when exposed to cadmium, but that this could be prevented by prior administration of tiny doses of this toxic element. The technical term for this phenomenon is mithridatism since it is named after Mithridates VI, King of Pontus (modern Turkey and Armenia). 2100 years ago, his father had been poisoned at a banquet and he had good reason to be-

lieve that he would be assassinated in a similar fashion. As a result he gave various poisons to condemned criminals to determine their lethal effects in order to learn how to prevent them. Poisoning at the dinner table was not uncommon in ancient times, particularly with hemlock, arsenic, cyanide or some combination of these in a strong wine to disguise their taste. Mithridates found that administering minute and increasing amounts of poisons provided protection against subsequent doses that would otherwise be fatal.

This practice reached it peak in the Renaissance and Pope Alexander VI was reputed to have achieved his office by literally poisoning the opposition. According to Onofrio Panvino, the official chronicler of the Popes, Alexander poisoned three cardinals and various church notables to keep them from interfering with the succession of his son, Cesare Borgia, as the next Pope. His daughter, Lucrezia Borgia, allegedly eliminated numerous foes as well as some of her lovers with a poison contained in a special hollow ring that was made for this purpose. Born in 1480, she was married three times, the first time before she was a teenager. After the marriage was dissolved, she went on to be impregnated by her father's papal emissary while she was staying in a nunnery, but was nonetheless later declared a virgin by the Vatican. She was described as having heavy blonde hair that fell past her knees, a beautiful complexion, hazel eyes which changed color, a full, high bosom, and a natural grace that made her appear to "walk on air." She was also said to be very intelligent and was held in such high regard by her father that she administered the Vatican when he was away. It was rumored that she had incestuous relationships with both her father and her brother, although this has been discredited. (See

http://www.theage.com.au/articles/2002/10/02/1033538671872.html) Nevertheless, the legends about her infamous personal life and reputation as "The Mother of Poisons" persist because they are emphasized in Donizetti's opera, *Lucrezia Borgia*, which is based on Victor Hugo's play *Lucrèce Borgia*.

There has been renewed interest in hormesis since it seems plausible that the protection provided by some vaccines and immunotherapies are due to hormetic effects. Another example of hormesis may be the observation that although high doses of ionizing or nuclear radiation are damaging, low levels like background radiation at elevated altitudes may have beneficial effects. Studies have documented reduced rates of cancer and all cause mortality in residents of high altitude regions such as Colorado, as well as industrial workers who handle low-level radioactive materials, survivors of Hiroshima and Nagasaki who lived outside of the immediate blast area, as well as those exposed to higher levels of natural radon gas. People still frequent "radon spas" here and in Europe and bathe in or drink the water to relieve arthritis and other complaints.

Some who have suffered stress for long periods of time as prisoners of war or the horrors of the Holocaust live surprisingly healthy and long lives. What researchers want to know is whether certain

attributes or personality characteristics are different in those who are successful in surviving such stressful situations rather than succumbing to them. It has been proposed that the hormetic effect of this type of stress stems from cellular adaptations brought on by activation of an "anti-stress" gene regulatory network. (See "Hormesis and Adaptive Cellular Control Systems" http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2478522/) Such resistance to stress may have a genetic component, but it also depends on prior experiences, coping skills, autonomic nervous and endocrine system activities, gender, age, sociocultural and other influences. And, as Friedrich Nietzsche suggested, "***That which does not kill us makes us stronger***." For some, stressful events take a greater toll and seem to stick like Velcro. Not only do such individuals get more agitated, but they also continually dwell on problems over which they have no control. Others seem to have a Teflon coating and the same stressors slide off without any visible lasting effect. As the Greek Philosopher Epictetus taught over 2,000 years ago, "***It's not what happens to you, but how you react to it that matters***" and "***Men are disturbed not by things, but by the view that they take of them***."

Salutogenesis, Logotherapy, Hardiness, Learned Optimism

Why do some people seem impervious to stress or more resilient with respect to their ability to bounce back? Can others learn how to acquire these talents or skills? These questions intrigued Aaron Antonovsky, a Yale sociologist who emigrated to Israel in 1960 to work in the Department of Social Medicine of the Hebrew University of Jerusalem. As a result, he came in contact with numerous concentration camp survivors and was fascinated by men and women who not only appeared unscathed by the Holocaust, but actually appeared to flourish and grow stronger. Over the next two decades, he published a series of cutting edge papers that provided important insights into what was unique about these individuals, which culminated in his concepts of "salutogenesis" (the origin of health) and "sense of coherence." The stronger one's sense of coherence, the greater their ability to cope with stress and to turn unavoidable problems into challenges that could be conquered. This held true not only for Holocaust survivors, but also others who remained unexpectedly healthy despite devastating experiences.

The core of these salutogenic and coherence concepts consisted of three components: **Comprehensibility** - The extent to which a person finds or can learn to structure their world so that it becomes understandable, meaningful, orderly and consistent, instead of chaotic, random and unpredictable. **Manageability** - A person's sense of being able to cope by relying on his or her own resources or receiving help from others rather than constantly complaining or grieving. **Meaningfulness** - The deep feeling that life makes sense emotionally and that its demands are worthy of commitment,

particularly if "disastrous experiences are willingly accepted as challenges to search for sense and to overcome with dignity." The crucial key to all of the above is the conviction that we have the ability to control and thus create our destinies.

Aaron was a great admirer of Selye and we corresponded regularly until his death in 1994, which prevented him from being the recipient of the Hans Selye Award at our International Congress on Stress in 1995. His salutogenic approach has since been utilized for applications ranging from predicting PTSD, burnout, disease outcomes and immune system depression, to selecting superior managers and developing parenting skills. It has also stimulated new concepts such as D.J.W. Strümpfer's *fortigenesi*s, which refers to the origins of psychological strength and adds the dimension of different "strengths" to salutogenic health. More detailed information can be obtained in Aaron's books, *Health Stress and Coping*, (1979) and *Unraveling The Mystery of Health: How People Manage Stress and Stay Well* (1987). These contain questionnaires that allow anyone to appraise his or her status with respect to the components that comprise salutogenesis and suggestions as to how ratings can be improved.

Viktor Frankl, a psychiatrist and neurologist, was also intensely interested in Holocaust survivors, since he had suffered in Nazi concentration camps for three years. In 1942, he, along with his parents, brother and pregnant wife, whom he had married a few months before, were arrested and sent to facilities like Auschwitz and Buchenwald. He attributed his survival to his belief in logotherapy, which he had first described in 1926. His original concept evolved further as he studied the differences between those who did and did not survive in Nazi death camps. The major distinction appeared to be that people who had hopes of being reunited with loved ones, or projects they felt a need to complete, or who had a strong faith in anything, tended to have better outcomes than others who had lost all hope. He concluded that Friedrich Nietzsche was also correct when he wrote, "***He who has a "why" to live for can bear with almost any "how***."

Frankl was born and raised in Vienna, the birthplace of modern psychiatry, so it is not surprising that he was curious about why people developed certain abnormal behaviors and whether they could be corrected. He was well aware of Sigmund Freud's psychoanalysis, with its focus on pleasure and Alfred Adler's individual psychology approach, which emphasized the need for power. *Logos* is a Greek word that can denote study, word, spirit, God, and meaning, and while all were important components, Frankl emphasized meaning. Logotherapy was based on the premise that our primary motivation for existing was not pleasure or power, but to find meaning in life, even under the most miserable circumstances. He also coined the term "existential analysis" to describe his approach, since it was designed to analyze the conditions needed to maintain one's values and dignity despite despair. This is explained in more detail in various books, in which he de-

scribes how logotherapy helped him not only to survive the Holocaust, but also to find meaning on learning that his pregnant wife and all his family had perished in gas chambers.

How can people find meaning in such tragedies? Frankl discusses three broad approaches, the first being **experiential values**, having experienced someone or something that we value, like great art or natural wonders. The most important is the love we feel for another and the greatest love is the ability to recognize the uniqueness of the other as an individual and to appreciate their full potential. He emphasizes this should not be confused with sex, which can only be fully enjoyed as the physical expression of true love in a monogamous relationship. A second way to discover meaning is through **creative values** that come from the inspiration and imagination involved in creating art, music, writing, an invention, or simply doing a good deed. The third means of finding meaning he termed **attitudinal values**, such as having a good sense of humor, compassion, empathy, courage and other virtues and talents. But he was especially interested in how the attitude one takes toward unavoidable suffering can also give meaning to life. He gave an example of finding meaning while experiencing extreme suffering in a harsh Nazi concentration camp by this eloquent description of his personal epiphany below in *Man's Search for Meaning*, *Part One, "Experiences in a Concentration Camp."*

We stumbled on in the darkness, over big stones and through large puddles, along the one road leading from the camp. The accompanying guards kept shouting at us and driving us with the butts of their rifles. Anyone with very sore feet supported himself on his neighbor's arm. Hardly a word was spoken; the icy wind did not encourage talk. Hiding his mouth behind his upturned collar, the man marching next to me whispered suddenly: "If our wives could see us now! I do hope they are better off in their camps and don't know what is happening to us."

That brought thoughts of my own wife to mind. And as we stumbled on for miles, slipping on icy spots, supporting each other time and again, dragging one another up and onward, nothing was said, but we both knew: each of us was thinking of his wife. Occasionally I looked at the sky, where the stars were fading and the pink light of the morning was beginning to spread behind a dark bank of clouds. But my mind clung to my wife's image, imagining it with an uncanny acuteness. I heard her answering me, saw her smile, her frank and encouraging look. Real or not, her look was then more luminous than the sun, which was beginning to rise.

A thought transfixed me: for the first time in my life I saw the truth as it is set into song by so many poets, proclaimed as the final wisdom by so many thinkers. The truth – that love is the ultimate and the highest goal to which Man can aspire. Then I grasped the meaning of the greatest secret that human poetry and human thought and belief have to impar*t: The salvation of Man is through love and in lo*ve. I understood how a man who has nothing left in this world still may know bliss, be it only for a brief moment, in the contemplation of his beloved. In a position of utter desolation, when Man cannot express himself in positive action, when his only achievement may consist in enduring his sufferings in the right way – an honorable way – in such a position Man can, through loving contemplation of the image he carries of his beloved, achieve fulfillment. For the first time in my life I was able to understand the meaning of the words, "The angels are lost in perpetual contemplation of an infinite glory."

His other experiences in three Nazi concentration camps also enabled him to later utilize logotherapy to help others find meaning in their suffering, as illustrated below by this case in Part II of the same book .

> Once, an elderly general practitioner consulted me because of his severe depression. He could not overcome the loss of his wife who had died two years before and whom he had loved above all else. Now how could I help him? What should I tell him? I refrained from telling him anything, but instead confronted him with a question, "What would have happened, Doctor, if you had died first, and your wife would have had to survive without you?:" "Oh," he said, "for her this would have been terrible; how she would have suffered!" Whereupon I replied, "You see, Doctor, such a suffering has been spared her, and it is you who have spared her this suffering; but now, you have to pay for it by surviving and mourning her." He said no word but shook my hand and calmly left the office.

In other words, by dying first, she had been spared that suffering, but he now had to pay the price by surviving and mourning her. Grief is the price we pay for love. For the doctor, this realization gave his wife's death and his own pain meaning, which in turn allowed him to deal with it. His suffering was now different, since it now had meaning, and he could endure it with dignity. Frankl also felt that seriously ill people were frequently deprived of the opportunity to suffer in a bravely manner that would allow them to retain some semblance of dignity. "Cheer up!, Be optimistic!, we say. All too often, they are made to feel ashamed of their pain and unhappiness."

Frankl went on to write several more books and was the recipient of numerous Awards and 21 honorary degrees here and abroad. He served as Professor of Neurology and Psychiatry at the University of Vienna, as well as a Visiting Professor at Harvard, Southern Methodist and Duquesne University. Logotherapy is considered to be "The Third School of Viennese Psychotherapy" (along with Freud and Adler) and is still popular. The Viktor Frankl Institute of Logotherapy in Texas offers educational courses leading to Academic, Associate and Diplomate credentialing in Logotherapy; publishes *The International Forum for Logotherapy* semi-annually; and sponsors the biennial World Congress on Viktor Frankl's Logotherapy.

The current delineation of what constitutes a stress resistant personality to the demands of daily life stems from the seminal research of Suzanne Kobasa and Salvatore Maddi at the University of Chicago. They began studying upper level 40-49 year-old male executives at Illinois Bell in 1975 when the company was compelled to dissolve. These individuals had previously enjoyed safe and secure positions as senior employees of a federally regulated monopoly with no competition. Many had strong roots in their communities and prominent positions as respected leaders in civic, educational, cultural or religious activities. All of this changed abruptly following the 1974 Justice De-

partment antitrust suit charging AT&T with monopolization of the telecommunications industry that terminated the 80 year-old Bell cartel. Employees were subjected to severe stress because they were either losing their jobs or being reassigned to locations that necessitated major lifestyle changes such as leaving family, friends and other close connections.

Over the next eight years, it became apparent that these executives responded to such demands in two very different ways. Those in the first group had increasingly more visits to physicians because of physical and psychological problems. This was in sharp contrast to a second and larger group that not only failed to show any increase in such complaints, but actually appeared healthier and more robust throughout this stressful period. These differences were completely unrelated to either job loss or having to move from their homes or communities. The severity of stress was measured by the Holmes and Rahe Schedule of Recent Life Events and significant sickness was assessed using Wyler's Seriousness of Illness Survey. Following an analysis of personality characteristics, Kobasa concluded that the major difference between the two groups was that the stress resistant group had more "hardiness." which consisted of three major components: control, commitment, and challenge.

Control refers to the amount of power we feel over our ability to cope with threats and demands at work and in our personal lives. **Commitment** means having a strong purpose for living because of deep involvement in family, work, religion, social or community activities that makes life more meaningful. Having a strong commitment to someone or something provides motivation that provides a goal to strive for and look forward to. **Challenge** is about how we perceive threats not as unavoidable dangers, but rather problems that can be solved. However, this study was limited to a very specific demographic group subjected to the sudden stress of job insecurity. This was different from the persistent life threatening stress Holocaust victims were subjected to. Yet, a common theme that is found in all of the above research is the emphasis on the individual's sense of control over their future – and that's what stress is all about. Although stress cannot be defined, much less measured in a manner that all scientists accept, all of our clinical and experimental studies confirm that the feeling of lack of any control is always distressful.

Many times we create our own stress because of faulty perceptions that can be corrected, as illustrated by observing passengers on a steep roller coaster ride. Some, who are hunched down in the back seats with their eyes shut, jaws clenched, white knuckled as they grasp the retaining bar, can't wait for the torturous ride to end and to get back on solid ground and scamper away. But up front are the wide-eyed, exhilarated thrill seekers, yelling, relishing every steep plunge,

who race to get on the very next ride. And in between, you might find a few with an air of nonchalance that seems to border on boredom. So, was the roller coaster stressful? Obviously, it's different

strokes for different folks. What distinguished the passengers in the back from those in the front was the sense of control they perceived over the event. While neither group had any more or less control, their perceptions and expectations were quite different. You can learn how to move from the rear of the roller coaster to the front, conquer an irrational fear of flying, heights, or crowded spaces, or as Eleanor Roosevelt commented, "Nobody can make you feel inferior without your consent."

As emphasized in the research studies cited, how we perceive threats or challenges is also important. I once received a post card from Selye, who was in China, where he indicated that the closest word to stress would be translated as CRISIS, It consisted of two characters, as illustrated above. The upper character denoted DANGER, whereas the lower signified OPPORTUNITY, which implies an ability to control the outcome or even improve your future.

CRISIS

Some create their own stress by constantly "castastrophizing" about some future event and always asking "What if" as they imagine the worse possibilities. Pessimists tend to also magnify the significance of negative events by exaggerating problems or their inability to cope with them. They often believe that misfortunes are their fault because of lack of talent, stupidity or unattractiveness and they will be permanent or followed by other miseries over which they are powerless to control. Optimists are hopeful and believe that everything "happens for the best" and that good, rather than bad things will happen to them. If something bad or unfortunate occurs, they view it as transient and controllable, rather than a trend or pattern that will persist.

Numerous studies show that optimists are not only happier, but also healthier than pessimists. Several years ago we devoted an issue of *Health and Stress* to discussing research that also explained the reasons why optimism improves health and longevity while pessimism does the reverse. Much of this is based on the research of Martin Seligman, past President of the American Psychological Association and Professor of Psychology at the University of Pennsylvania, where he was strongly influenced by Aaron Beck, a world renowned psychiatrist who is generally regarded as the father of cognitive therapy. Beck developed several self-report measures for depression and anxiety (Beck Depression Inventory, Beck Hopelessness Scale, Beck Anxiety Inventory), which is why Seligman's initial interest was in depression. He subsequently developed his theory of "learned helplessness" in which humans as well as animals acted as if they were helpless in situations even

when they had the ability to change their unpleasant or even harmful consequences. Seligman believed that this perceived absence of control over the outcome of a situation and other pessimistic attitudes could lead to clinical depression, and he spent the next four decades studying the differences between optimists and pessimists. As a result, he became convinced that it was possible to improve health and life expectancy by achieving a more optimistic attitude. In *Learned Optimism*: *How to Change Your Mind and Your Life*, Seligman explains how to develop a brighter outlook on life by changing thinking habits that determine your "explanatory style," or the way you tend to explain setbacks to yourself. You can learn where you rank on a scale ranging from profound pessimism to extreme optimism. Also provided are a series of exercises so you can learn how to avoid or control unhealthy pessimistic thinking habits.

In one study, those school children scoring highest for pessimism confirmed that they were most likely to suffer depression as adults. Conversely, high optimism scores predicted excellence in everything from sports to life-insurance sales, and Metropolitan Life allegedly saved millions of dollars in personnel selection by utilizing these scores. Optimism also brings in votes. By analyzing campaign speeches for the prevalence of optimism, Seligman predicted the winners of the 1988 Presidential and Senate elections more accurately than veteran political pundits. However, unbridled optimism such as a "nothing bad will happen to me" attitude can also be unhealthy since it is often associated with risk taking behaviors such as not wearing a seat belt or engaging in dangerous recreational activities. Optimists believe we live in the best of all possible worlds and pessimists fear this is true. They may be right in the long

run, but optimists are likely to have a much more enjoyable journey through life.

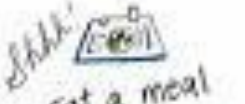
There are also a plethora of stress reduction techniques and programs, some of the most popular being meditation, yoga, jogging and other aerobic exercises, progressive muscular relaxation, visual imagery, engaging in hobbies or social activities that bring you into contact with others with similar interests, listening to music, aromatherapy, cognitive restructuring and other mindfulness-based approaches. However, these are primarily Band-Aid approaches designed to reduce the adverse emotional, mental and somatic effects of stress. But just as stress differs for each of us, there is no stress reduction panacea. Jogging, meditation or progressive muscular relaxation may be effective for many, but there is no guarantee that any of these will lower your stress level, and for some individuals, could increase it.

The best way to reduce stress is to gain a feeling of better control over your future. Developing a more optimistic attitude may help, but finding ways to make your life more meaningful and purposeful is much more important. The physician-philosopher William James, often called the father of American psychology, wrote, "*The greatest discovery in our generation is that human beings by changing the inner attitudes of their minds can change the outer aspects of their lives*." Studies of healthy Holocaust survivors show that it's possible to learn how to accomplish this even when subjected to horrific conditions that were hopeless. As Mark Twain noted, "*Kindness is the language the blind can see and the deaf can hear*." More about kindness, compassion, empathy and other aspects of "altruistic egoism" in the next issue of *Health and Stress*—so stay tuned!

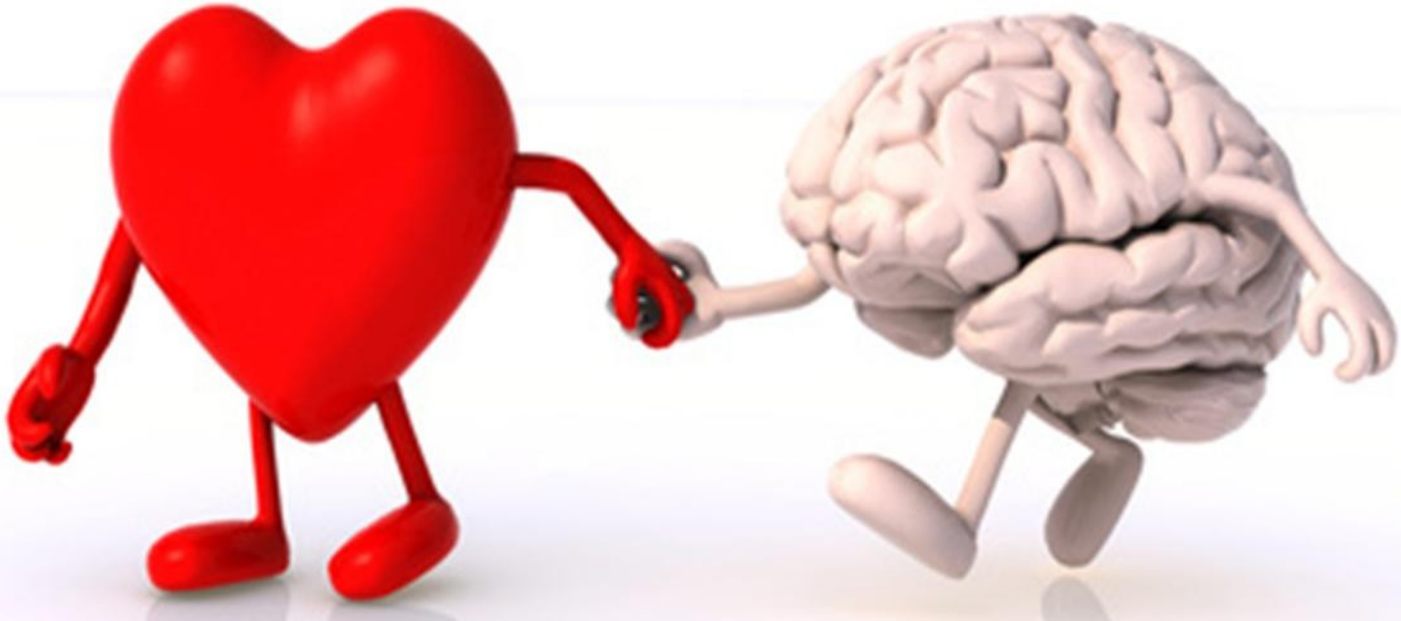
Paul J. Rosch, MD, FACP

Editor-in-Chief

50 Ways to Take a Break



First we got your brain...



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Can we count on you for a

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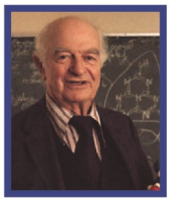
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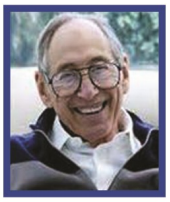
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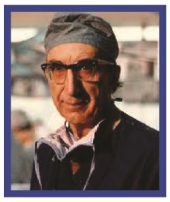
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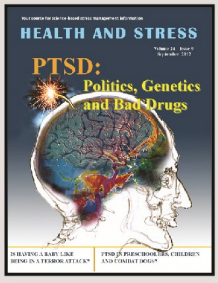

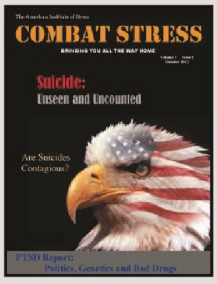

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