

# HEALTH AND STRESS

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## **STRESS, FUNCTIONAL DISEASES & STRANGE SOMATIC SYNDROMES**

**KEYWORDS:** General Patton and malingering, nostalgia, Swiss Disease, DaCosta's Syndrome, soldier's heart, neurocirculatory asthenia, effort syndrome, Railway spine syndrome, combat fatigue, Syndrome X, Barlow's syndrome, myalgic encephalitis, "Yuppie" flu, "Shirker's Syndrome", Low Natural Killer Cell disease

Functional diseases are disorders in which patients suffer from symptoms that have no obvious cause. Some of the most common complaints can be categorized as follows:

- General - fatigue, exhaustion, apathy, lethargy and sleep disturbances
- Central Nervous System - headache, lightheadedness, fainting, forgetfulness,
- Impaired memory, difficulty concentrating, confusion, irritability
- Musculoskeletal - pain in joints, neck and low back and muscle tenderness
- Face and Pharynx - sore throat, dry mouth, difficulty swallowing, atypical pain
- Dermatologic – itching, rashes, hives
- Chest - palpitations, shortness of breath, sharp or burning pain
- G-I Tract - nausea, diarrhea, abdominal pain, cramps, bloating
- Neurologic - paresthesias, numbness, tingling, excessive sweating
- Gynecologic - chronic pelvic pain, premenstrual syndrome, menorrhagia
- Psychiatric - anxiety, depression, panic attacks

Physical examination, endoscopy, X-rays and sophisticated imaging procedures as well as laboratory and blood tests reveal no relevant abnormalities or clues with respect to the source of symptoms or a possible diagnosis. The label "functional" implies that the disorder is most likely due to some disturbance in physiologic function that is not associated with any permanent structural changes.

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- Irritable Heart, Mitral Valve Prolapse And The "Blame-X" Syndromes
- Is Stress The Major Cause Of Chronic Fatigue And Similar Syndromes?
- A Seal of Approval For Stress Reduction Products And Services?

Clusters of certain symptoms have periodically resurfaced over the years, but under very different names. That's because these titles can refer to the presumed cause, (Sick Building Syndrome), the major symptom (Chronic Fatigue Syndrome), the individual who first described it (DaCosta's Syndrome), individual susceptibility (Multiple Chemical and Electromagnetic Sensitivity Syndromes) or some other characteristic thought to be the cause (Mitral Valve Prolapse Syndrome).

The fact that patients with these and other seemingly unrelated syndromes often have remarkably similar symptoms suggests that they may merely be different manifestations of the same disorder. Chronic fatigue syndrome and fibromyalgia, as well as irritable bowel syndrome and fibromyalgia, seem to blend into one another and the diagnosis may depend on which symptoms predominate at the moment. The doctor's field of interest can also determine the diagnosis. Confronted with a patient having the same multiple unexplained complaints, an internist might focus on constitutional symptoms and diagnose chronic fatigue syndrome, allergists would favor sick building or some sensitivity syndrome, a gastroenterologist would be apt to suggest irritable bowel syndrome but fibromyalgia or repetitive stress disorder would likely be the choice of rheumatologists. It is not unusual over a period of time for the same patient to believe that he or she has had several different functional disorders, a process known as *pathoplasticity*.

### **Functional Somatic Syndromes, The Rise And Fall Of Repetitive Stress Injury**

The term functional somatic syndrome has been suggested to describe several syndromes that are related not only with respect to symptoms but also the degree of suffering and disability that result. (Barsky AJ, Borus JF., Functional somatic syndromes. *Ann Intern Med* 1999; 130:910–921) These include multiple chemical sensitivity, sick building syndrome, repetitive stress injury, the side effects of silicone breast implants, Gulf War syndrome, candidiasis hypersensitivity, chronic Lyme disease, hypoglycemia, chronic whiplash, mitral valve prolapse syndrome, mercury sensitivity from dental fillings, chronic fatigue syndrome, irritable bowel syndrome, and fibromyalgia. It might seem strange to lump all of these together, especially since some are well-accepted diseases. However, patients with legitimate symptoms may also have significant emotional overlay that exaggerates or distorts their complaints. In some instances, this can result in the same type of attitude and behavior seen in patients with other functional somatic syndromes that have much less scientific support.

Some of these common characteristics include:

- a. the belief that one has a serious disease that others are not aware of or tend to minimize with respect to its importance
- b. the expectation that the condition is likely to worsen and could possibly be catastrophic or disabling
- c. attributing normal or minimal somatic complaints as being caused by some critical abnormality, thus reinforcing the seriousness of the situation
- d. a strong sense of assertiveness and aggressive advocacy with respect to one's personal belief in what is causing the problem
- e. skepticism about a physician's degree of expertise and a tendency to devalue and dismiss medical authority and epidemiologic evidence that conflicts with personal opinions

It's quite understandable that patients who suffer from unexplained symptoms tend to become frustrated and angry because physicians don't seem to be able to diagnose or treat their problem. In some instances, sensationalism and alarmism from media coverage of a particular disorder may exacerbate or perpetuate symptoms and prolong disability. Syndromes are sometimes portrayed as rapidly spreading epidemics that are likely to cause progressive incapacitation. Preliminary data, tentative findings and personal accounts of affected individuals may be exaggerated and reported as conclusive medical proof of the condition. There is often the insinuation that powerful groups are denying the existence of these syndromes to conceal their own negligence or culpability. Individuals and organizations with strong vested interests in the status of certain syndromes often reinforce sufferers' beliefs that their symptoms have a medical basis. Advocacy groups and celebrities emerge to mobilize public opinion in an effort to shape environmental or workplace policies and regulations or to obtain health insurance coverage, workers' compensation or disability benefits. All these activities may subsequently lead to litigation and class action lawsuits in an attempt to attribute liability and fault.

Functional somatic syndrome may be perceived as being a derogatory term since patients with "functional" symptoms are frequently assumed to have an emotional or psychiatric rather than any real physical problem. Some are also apt to be accused of malingering, especially if there could be Workers' Compensation or insurance reimbursement. This has been a particular problem for soldiers, who, whether diagnosed with shell shock or battle fatigue were often labeled as cowards, liars or deadbeats. Combat veterans with emotional complaints were often told that they did not need any long-term treatment and to "get over it" from military and medical personnel. This type of attitude was personified in the movie "Patton" when General Patton, played by George C. Scott, accused apparently uninjured hospitalized soldiers of malingering. According to newspaper reports at the time, two privates were recuperating in a military hospital in Sicily alongside others with more visible wounds. "Don't admit this yellow bastard," Patton reportedly yelled at a medical officer. "There's nothing the matter with him. I won't have the hospitals cluttered up with these sons of bitches who haven't got the guts to fight." President Franklin Roosevelt received hundreds of letters about the incident. The majority supported Patton and his actions; some even suggested a promotion was in order. It was later determined that one of the privates was suffering from malaria and dysentery and the other from "severe shell shock". Patton was ultimately reprimanded, ordered to apologize and relieved of command of the Seventh Army.

Repetitive stress or strain injury (RSI) illustrates some of the above problems as well as how the same disorder often reappears under different headings. Also known as repetitive trauma injury, repetitive motion injury or cumulative trauma disorder, RSI and its synonyms refer to any painful condition of the upper extremity in workers engaged in repetitive activities. The most common complaints include various stages of carpal tunnel syndrome, upper extremity tendonitis, tennis elbow, rotator cuff disturbances and fibromyalgia. Initial symptoms can vary from slight numbness and tingling in the fingertips to a dull aching in the forearms, or a burning sensation in the shoulders. Two thirds of RSI occurs in women, possibly because they have smaller bones that are more apt to be osteoporotic and therefore more susceptible to trauma. Because repetitive trauma can cause connective tissue damage, pain often travels and what started as a hand complaint can spread to the shoulder, neck or scalp. Since RSI symptoms can mimic other disorders like diabetes, arthritis and Lyme disease, the diagnosis is often missed. (Szabo RM, King KJ. Repetitive Stress Injury: Diagnosis or Self-Fulfilling Prophecy? *J Bone & Joint Surg*, 2000; 82: 1314-1322.)

As indicated in a previous Newsletter, repetitive stress injury is hardly new. Over 300 years ago, in his *Treatise on Diseases of Workers*, the Italian physician Ramazzini referred to the "harvest of diseases" that affect workers because of "certain violent and irregular motions and unnatural postures of the body." Centuries later, Gray's *Anatomy of the Human Body* described a disorder and sometimes deformity of the hand known as "washerwoman's sprain". More recently, other occupations and pursuits have produced "pricer's palsy" in store clerks, "Nintendonitis" in video game addicts and "pickle pusher's thumb" in workers at food processing plants where the last pickle must be pushed into place in the jar manually. Frequent use of jackhammers, pneumatic drills and other equipment that cause repetitive trauma to the upper extremities results in similar symptoms. Meat packing industry workers have about 12 times more of these complaints than any other occupational group and the incidence of RSI is also high in employees involved in automobile manufacturing, metal furniture assembly, shipbuilding, frozen bakery products and pen and pencil repairs. Since the largest cause of repetitive stress injury is claimed to be persistent and prolonged typing, data entry clerks and others who constantly use a computer should be at particular risk.

Around 15 years ago a study of video display terminal operators found that almost one in four had RSI symptoms. Other workers who used computers in their daily work were quick to take advantage of this. A NIOSH survey determined that over 1,500 members of the Newspaper Guild **reported being affected by repetitive stress injuries, as did 40 percent of the**

**employees of *Newsday***, a daily newspaper in the New York City area. Three *Newsday* reporters and an editor even went so far as to file a \$40 million lawsuit against Atex Publishing Systems, makers of a powerful editing and composition computer system used at *Newsday*. Eight other journalists filed a \$240 million product liability suit against Atex, claiming that it "knew or should have known that repetitive use of their computer systems would expose plaintiffs to a risk of developing cumulative trauma disorders and other injuries associated with the occupational use of video display terminals." There was an explosion of similar lawsuits around the country since the number of **"disorders associated with repeated trauma" had increased from 22,600 in 1982 to 332,100 in 1992. The RSI epidemic now accounted for two-thirds of all work related injuries** and the Labor Department estimated that RSI disabilities cost U.S. businesses about \$20 billion a year. The Video Display Terminal Worker Safety Ordinance became California law in 1991, new keyboards with improved ergonomic design started to appear as did a new monthly publication devoted entirely to RSI. The yearly subscription price of \$173 was guaranteed to "more than pay for itself by saving thousands of dollars."

By 1995, more than 1000 cases caused by typing on a computer keyboard were pending and the plaintiffs' lawyers threatened to file tens of thousands more cases given the huge number of potential plaintiffs and the degree of disability that could be claimed. Doctors testified that because of chronic and sometimes unexplained pain and disability, many RSI victims developed severe emotional disturbances such as anger, panic, fear, shame and grief that often resulted in incapacitating depression. Such stressful emotions caused more muscle tension that increased physical pain, which then led to a vicious self-perpetuating cycle. Superimposed on this was the emotional distress and abuse from employers, colleagues and customers who complained about the slowness and quality of their work and viewed them as malingerers. According to one California forensic psychiatrist who claimed to have treated thousands of RSI patients for anxiety and depression, "They just think the person doesn't want to work and is just looking for compensation." A front page story in the December 10, 1996 issue of *USA Today* reported that a New York Jury had just **awarded \$6 million to three RSI claimants, that one would receive \$5.3 million and that "Repetitive stress injury (RSI) is the USA's No. 1 health cost."** Three law firms that had achieved great wealth from litigation involving asbestos-related diseases were hoping for similar success in keyboard-related injury suits. They combined their considerable resources in an attempt to consolidate a large number of cases into one Proceeding because they believed this would weaken any arguments concerning lack of causation. Approximately 1000 cases were filed in one New York Federal Court alone in an effort to achieve this goal.

In late 1997, the lawyers were finally successful in obtaining a mass consolidation of cases against one manufacturer and nine plaintiffs went to trial on May 4, 1998. The two main claims were that keyboards were defective in their design and that they were improperly used because they did not have a warning placed on them. The design-defect claim was based on the theory that excessive force was required to press a key and that this could have been eliminated by ergonomic improvements. However, there was no evidence to support this and experts had conflicting opinions. With respect to placing warnings on keyboards, the defense argued that this would also require putting a warning on any tool used repeatedly in the workplace, such as pens used by writers, trowels used by bricklayers, or hammers used by carpenters. The lawyers for the plaintiffs tried to take advantage of the Workers' Compensation system by using documents signed by physicians that described the injuries as work-related. However, many of these had obviously been generated solely for the purpose of facilitating the treatment of the patients. One of the nine plaintiffs had previously been awarded \$5.3 million in the 1996 trial against the same defendant. The trial judge set that earlier verdict aside because the plaintiff had concealed evidence that her condition was not work-related since she previously had three unsuccessful carpal tunnel releases (two on the left and one on the right). Her principal treating physician and medical and ergonomic

consultants at the trial stated repeatedly that typing was the cause of her condition and that repetitive stress injury in the form of carpal tunnel syndrome was her work-related injury. However, nearly all of these physicians and experts ignored the fact that **the cause of her symptoms was actually due to severe cervical spine degeneration.** The defense also showed that without exception, each of the plaintiffs whose cases were tried had evidence of various personal and health factors that had been proven to be linked with carpal tunnel syndrome and the other upper-extremity conditions claimed in the lawsuits. In numerous instances, these alternative causes had been ignored when these injuries were diagnosed as being work-related. In fact, throughout this litigation, there were numerous cases in which **health-care professionals focused solely on the workplace and the keyboard as the cause of the condition, to the exclusion of all other possible causes, thereby actually depriving the patient of appropriate medical treatment.**

The nine-plaintiff trial lasted for seven weeks. The closing arguments presented by the plaintiffs lasted for more than one day, and those presented by the defendant took approximately four hours. On June 16, 1998, the jury deliberated for less than four hours before returning unanimous verdicts in favor of the defendant in each of the nine cases. At the same time that these cases were being tried, many other cases were dismissed. In one, the judge held: "The plaintiff was essentially asking the jury to make the precipitous leap from keyboard use to carpal tunnel syndrome and/or tennis elbow. The fact that the plaintiff may have used the defendant's keyboard in a rapid and repetitive fashion is a characteristic not of the keyboard but of the plaintiff's work habits and, possibly, the requirements placed upon her by her employer. The defendant is not an insurer for such activity or responsible for such. . . . Were it so, every carpenter would have a claim arising from every hammered thumb, golfers would spend more time in litigation than on the links and pianists would strive to get to court rather than to Carnegie Hall." Almost all previous awards were thrown out on appeal when it became apparent that legitimate symptoms usually had some logical explanation that had been overlooked. The general consensus was that any other complaints were imaginary or more likely had been exaggerated or faked in order to receive some sort of reward. The epidemic of RSI rapidly evaporated as soon as it became apparent this was not apt to be a profitable pursuit and that compensation was far from guaranteed.

### **Irritable Heart, Mitral Valve Prolapse And The "Blame-X" Syndromes**

The powerful psychological impact of war is evident in Homer's description of Achilles' disintegration following the battlefield death of his best friend in the Trojan War. More specific war syndromes began to appear in the mid nineteenth century, when anatomic pathology had developed sufficiently to distinguish between "organic" and unexplained or emotional disorders. During the Crimean battles of 1854–1856 and later during the Boer war, symptoms of fatigue, palpitations, shortness of breath and chest pain that prevented British soldiers from performing their usual duties were considered to be a delayed after-effect of sunstroke. In the U.S. Civil War, soldiers who had lost their will or ability to fight for similar reasons were said to suffer from "nostalgia". This was later called "Swiss Disease" when it frequently surfaced in soldiers from that country who had been forced to serve in military units.

Jacob Mendez DaCosta was an extremely well trained physician who served in the Philadelphia Military Hospital during the Civil War. He observed that some of the soldiers referred to him had symptoms similar to those described above in the British soldiers. In addition, they frequently complained of headaches, difficulty sleeping, fatigue, dizziness, and diarrhea. He collected some 300 cases and followed them very carefully for six years before publishing his results in 1871. The main complaint was usually attacks of palpitations of varied severity, frequency and duration that were associated with chest pain, difficulty breathing and a feeling of distress. As he wrote, "The 'seizures' were most readily excited by exertion, and might be then so violent, that the patient would fall to the ground insensible." Pain, frequently the first

sign of an attack, could be sharp, lancinating, tearing or cutting and generally occurred in paroxysms. These attacks were usually precipitated by some form of exertion or follow an episode of palpitations or hyperventilation. Many patients also complained of a chronic sensation of dull substernal discomfort.

In following up these patients, DaCosta wrote that some had "perfect recovery, amelioration, with irritable condition of the heart remaining, or disordered function leading to organic disease (hypertrophy)." Almost half seemed to have symptoms that were precipitated by some infection and a third by strenuous military duties or traumatic experiences. All his initial patients were soldiers, two-thirds of whom were 16-25 years old, but some had not been involved in actual combat and DaCosta also noted that the syndrome could occur in civilians. The disorder was initially called "DaCosta's syndrome", "irritable heart syndrome" and then "soldier's heart". Symptoms were quite similar to "Railway Spine Syndrome", a condition that referred to the post-traumatic symptoms of passengers involved in railroad accidents that were not uncommon during the early days of the steam engine. Many physicians thought that complaints were due to the "excessive speeds" (about 30 mph) of the trains because the human body could not cope with this persistent rate of travel and that the associated intense fear disrupted the nervous system. The "Railway Spine Syndrome" diagnosis became very popular in the 1870's because of numerous lawsuits. However, it was also subsequently discredited when it was discovered that many plaintiffs were malingerers solely interested in compensation and like repetitive stress injury, quickly vanished. In addition, Charcot, Freud and others had suggested that this and similar disorders were hysterical symptoms due to the stress of psychological trauma and by the end of the century, traumatic hysteria, traumatic neurasthenia and neurocirculatory asthenia had replaced other diagnoses.

During World War I, soldiers with similar symptoms were thought to be suffering from "shell shock" due to nearby exploding shells that affected the brain and nervous system. Like DaCosta, Army physicians noted that symptoms often followed an infection, and "trench mouth" became a popular diagnosis. The prominent cardiologist Sir Thomas Lewis subsequently labeled the condition "effort syndrome" since he believed that a major cause was the inability to restore homeostasis after exertion. DaCosta had previously emphasized that symptoms often came on after exertion or following an episode of hyperventilation. During World War II and the Korean War, all these diagnoses were replaced by others such as acute combat stress reaction, battle fatigue and combat exhaustion. Post-Vietnam syndrome was used for similar symptoms in Vietnam veterans and psychiatrists also created post-traumatic stress disorder to refer to long-term consequences of traumatic stress. Gulf War Syndrome was used when similar manifestations appeared in veterans returning from the Persian Gulf War of 1991 and analogous health problems were now also recognized in non-military family members of the affected veterans.

The title of DaCosta's 1871 paper in the *American Journal of Medical Sciences* was "On irritable heart: a clinical study of a form of functional cardiac disorder and its consequences." Its description as a "functional cardiac disorder" implies that DaCosta believed this was a legitimate disease but that there were no associated pathologic findings in the heart. Around the turn of the century, Sir William Osler, noted the similarity between symptoms associated with "irritable heart" in soldiers and those that were seen in civilians, particularly women. Some physicians believed the problem was of psychiatric rather than cardiac origin. While there was no evidence of heart disease, DaCosta had noted that physical examination often revealed that, "The apical impulse was quick, and abrupt or jerky. Sometimes the sounds of the heart are split. Murmurs obscuring or replacing the cardiac sounds are not as a rule present; yet they are met with, and particularly in that form of murmur, systolic, chiefly above the apex." Lewis' 1919 description of "effort syndrome" and "soldier's heart" following World War II included similar auscultatory findings as well as the palpitations and breathlessness described by DaCosta but emphasized that marked fatigue was often a

prominent and constant feature. Most of these soldiers had come from sedentary occupations and on careful questioning admitted having similar symptoms prior to joining the army. Many showed defective physical development with "a chest that is long and narrow or flattened with a kyphotic curve". Paul Dudley White, President Eisenhower's cardiology consultant, spent years studying a similar disorder called neurocirculatory asthenia. In a 1972 summary he noted that it was characterized by palpitations, rapid heartbeat, fatigue, chest pain and anxiety, was twice as common in women, and tended to run in families.

In the late 1960's, Barlow, Reid, Criley and others described various auscultatory and electrocardiographic alterations associated with a condition in which one or both leaflets of the mitral valve protruded into the left atrium during ventricular contraction. It was often associated with palpitations, arrhythmias and atypical chest pain and although some patients had no symptoms, the presence of mitral valve prolapse was indicated by a pronounced midsystolic click with or without a late systolic murmur. This was identical to what DaCosta, Lewis and White had described in their irritable heart, effort, and neurocirculatory asthenia syndromes. Women, especially those with a thin, asthenic habitus, seemed to be affected much more frequently than men. Mitral valve prolapse was thought to be inherited, could be diagnosed in children, and was often associated with various physical features, including: *pectus excavatum* (depression of the breast bone), scoliosis (curvature of the spine), or an abnormally straight thoracic spine, arm span greater than height, unusual joint flexibility, and low body weight. Over the next decade or so, advances in cardiac ultrasound and echocardiograph procedures greatly facilitated the diagnosis of mitral valve prolapse and what might be causing the problem. As a result, the disorder was known by numerous names, such as Billowing Mitral Valve, Floppy Mitral Valve, Myxomatous Mitral Valve, Prolapsing Mitral Leaflet, Ballooning Mitral Valve, Midsystolic click-Late systolic murmur, Click Murmur, as well as Barlow's or Reid-Barlow Syndrome. Based on echocardiographic findings, it became obvious that mitral valve prolapse was much more common than previously suspected, with some estimates as high as 20% in females and 12% in men.

How many of these suffered from associated symptoms was difficult to determine. The list of frequent complaints now included chest pain, fatigue, palpitations, "skipped beats", lightheadedness, dizziness, shortness of breath, anxiety and/or panic attacks, headaches, low exercise tolerance, and mood swings. It also became clear that there was a need to distinguish between significant anatomic mitral valve prolapse due to intrinsic structural changes or resulting from infection (endocarditis) and a mitral valve prolapse syndrome in which the above symptoms predominated. There was no evidence that these symptoms were related to the valvular disease or its severity and it seemed likely that they were due to some dysfunction of the autonomic nervous system that might also be inherited. The term mitral valve prolapse dysautonomia was proposed as a separate syndrome, since mitral valve prolapse could occur with no symptoms in many patients, some patients may have had only occasional palpitations or other intermittent complaints, but **it was also possible to have mitral valve prolapse dysautonomia symptoms without any evidence of mitral valve prolapse.**

Nostalgia, Swiss Disease, DaCosta's, irritable heart, soldier's heart, effort, shell shock, acute combat stress, battle fatigue, combat exhaustion, Post Vietnam, Gulf War as well as the numerous names used to refer to mitral valve prolapse are titles of syndromes that provide little useful information. In addition, they may be misleading because some suggest possible but unproven etiologies and it is important to avoid suggesting causes that have not been substantiated. Failure to do so could impair a patient's recovery as well as impede research that might find the true source of the symptoms. What outbreaks or episodes of these syndromes have in common is the difficulty in discerning satisfactory mechanisms to explain

the symptoms, their sources and what to call the disorder. The problem has been that if Stimulus X is suspected or blamed as the cause, it is frequently cited as the syndrome's name. Stimulus X may then receive wide media publicity that leads to public pressure for legislation intended to provide care and compensation for the victims, as well as litigation aimed at punishing the producers. These very different names for what is essentially the same disorder demonstrate the dangers associated with what Feinstein has labeled the "Blame-X Syndrome". For example, when specific exposures were cited as the title that had been given to a Blame-X syndrome, "many patients were pleased to receive an apparent explanation, to regard themselves as victims, and to seek legal redress. The occurrence of 'litigation symptoms and diseases,' however, had been noted at least 100 years ago. In some of today's Blame-X syndromes, the symptoms have persisted despite removal of the offending stimulus—such as replacement of mercury dental fillings, explantation of silicone implants, or transfer of home to a region free of pertinent environmental exposure. In a somewhat analogous syndrome, **the symptoms that could follow 'whiplash injury' did not regularly occur in countries without associated litigation, and often endured in the U.S. until the lawsuit was resolved.**" (Feinstein AR. The Blame-X syndrome: problems and lessons in nosology, spectrum, and etiology. *J Clin Epidemiol.* 2001; May; 54(5):433-9)

Blame-X syndromes should not be confused with Syndrome X, which is entirely different if not opposite. In an effort to avoid assigning an etiology to a possible new syndrome, it may be called Syndrome X for the specific purpose of emphasizing that the cause is unknown. This can also cause confusion when there is more than one Syndrome X, as we saw with Metabolic Syndrome. Reaven called the association of abdominal obesity, diabetes and hypertension Syndrome X, even though he believed the basic cause was insulin resistance. He was not aware that Syndrome X was an established term to refer to patients with anginal chest pain who might have an abnormal stress test but normal angiographic findings. To avoid confusion, the terms metabolic syndrome X and cardiovascular syndrome X were used for a brief period but these soon disappeared and have been replaced by metabolic syndrome and microvascular angina syndrome. Some might question as to whether either of these might be classified as a disease rather than syndrome. Syndrome literally means "running together" and refers to a group of symptoms or other manifestations associated with a particular condition or disease. In modern medicine, syndrome is most often used in situations where no consistent characteristic objective abnormality has been found that permits classifying the condition as a "disease". However, the distinction between syndrome and disease is often blurry. Some syndromes can become diseases, as happened when Post Vietnam syndrome and combat fatigue syndrome were replaced with PTSD. Many feel that this was due to public and political pressure rather than solid scientific justification and now question the wisdom of this change. As indicated in the current special issue of *Journal of Anxiety Disorders*, which is devoted entirely to "Challenges to the PTSD construct and its database", Harvard psychiatrists reported that almost four out of five depressed patients they interviewed qualified for the diagnosis. This included many who could not name a single traumatic event that might have caused their symptoms. It is estimated that 12 to 20 percent of Iraq war veterans show signs of PTSD and the disorder currently accounts for half of all mental health disability claims. Even one of the authorities who was co-chairman of the committee responsible for classifying PTSD as a disease admitted that subsequent advances suggest that post-traumatic stress is more closely related to other conditions than researchers recognized at the time. Chronic Fatigue Syndrome and fibromyalgia are also now classified as official diseases but these diagnoses are even more controversial.

### **Is Stress The Major Cause Of Chronic Fatigue And Similar Syndromes?**

Chronic fatigue syndrome, (CFS) is a complex, debilitating disorder characterized by profound and prolonged fatigue. Patients frequently report other vague and non-specific symptoms such as weakness, muscle pain, insomnia and problems with memory and concentration. The feeling of fatigue and other complaints are not improved following bed rest and are frequently



worsened by physical or even mental activity. Although CFS can persist for years, its cause or causes are a mystery, there are no specific diagnostic tests nor is there any effective treatment. So how did chronic fatigue get to be classified as a disease that affects over a million people in the U.S. and why is it still referred to as a syndrome?

When initially described two decades ago, most physicians were skeptical that CFS was a legitimate disease. Similar symptoms can be seen in depression and fibromyalgia and particularly in patients recovering from influenza, malaria, and hepatitis. However, these and other types of post infection fatigue usually gradually improve and rarely last more than a few months. One exception is myalgic encephalitis (ME), a condition also associated with persistent fatigue that often follows a viral infection, particularly with certain neurotropic herpes viruses. Myalgic encephalitis is recognized in the U.K. as a distinct and legitimate disease and is sometimes considered to be synonymous with fibromyalgia as well as CFS. Symptoms are also very similar to those seen in chronic fatigue but there is more of an emphasis on muscle pain. CFS was initially frequently referred to as Post-viral Fatigue Syndrome since many cases seemed to be triggered by a viral infection with antibodies indicating past infection with the same herpes viruses implicated in myalgic encephalitis. Some studies also found slightly higher levels of antibody to Epstein-Barr virus (EBV), a virus thought to cause infectious mononucleosis and many patients had experienced a prior episode of the "kissing disease". As a result, chronic fatigue was frequently referred to as "chronic EBV", chronic mononucleosis or "Yuppie flu", since most of these patients were fairly young, affluent white professionals. Women were affected four times more frequently than men and some critics called chronic fatigue a disorder of "a bunch of hysterical upper-class white women". In the U. K. it was also called "Shirker's Syndrome", since the diagnosis was perceived as an excuse to get out of work

In an effort to avoid such pejorative and belittling descriptions as well as the psychiatric stigma that had become associated with chronic fatigue, many patients and advocacy groups in the U.S. started to use the acronym CFIDS for "Chronic Fatigue & Immune Dysfunction Syndrome". This was an attempt to legitimize the condition by taking advantage of various disturbances in immune system function that had been described. In Japan, where a reduction in the number of natural killer cells and decreased natural killer cell activity was reported, chronic fatigue is still widely referred to as "Low Natural Killer cell disease". An inappropriate production of interleukin-1 and other cytokines was also found by some researchers but not others and there are no consistent immunologic abnormalities that everyone agrees on. In addition, CFS patients do not show any evidence of tissue damage typically seen in autoimmune diseases or increased risk of opportunistic infection and malignancy usually observed in immunosuppressed individuals. Contrary to the Yuppie Syndrome characterization, the highest rates of CFS or CFIDS were consistently found among minority groups and individuals with lower levels of education and occupational status, such as blue-collar workers. Although most common in the 25 to 45 age group, chronic fatigue syndrome can also occur in children and the elderly and in people of all racial, ethnic and economic backgrounds. It appears to be seen more often in African-Americans and Latinos, less so in Asian Americans, and is actually more frequent in lower socioeconomic groups. Most cases affect isolated individuals but at least 30 outbreaks of chronic fatigue syndrome have been reported during which many people in the same area suddenly developed the illness at the same time. Although many still believe it is a psychoneurotic condition, chronic fatigue syndrome was accepted as an official cause of death for the first time last June in the UK. The patient was a 32-year-old woman who had suffered from the disorder for six years and died from kidney failure due to dehydration.

So how is the diagnosis established? What distinguishes the million people with the disease from what the Centers For Disease Control estimates are "tens of millions of people with similar fatiguing illnesses who do not fully meet the strict research definition of CFS." While

there are different criteria here and abroad, the most commonly accepted is extreme fatigue for at least six months that is not due to any known cause and has been responsible for decreasing one's activity level at home, work or school by 50% or more. In addition, at least four of the following eight symptoms must also have been present for six months:

- a. Impaired concentration or short-term memory severe enough to affect routine activities at home, work, school, or social functions
- b. Sore throat
- c. Enlarged lymph nodes in the neck or underarm area
- d. Muscle pain
- e. Pain in several joints without any redness or swelling
- f. Headaches that are different in location pattern of frequency or increased in severity
- g. Sleeping difficulties and not feeling refreshed or rested on waking
- h. Extreme reactions to exertion such as feeling sick for 24 hours or more after exercise or strenuous activities

Critics point out that since there are no objective diagnostic procedures or laboratory tests, it might not be too difficult to qualify for the diagnosis of CFS by making false claims that could be difficult to refute. This may be important since a Seoul court recently ruled that **chronic fatigue syndrome should be regarded as a work-related illness**. The court ordered the Korea Labor Welfare Corporation, the official workers' compensation agency, to provide compensation to a 45-year-old former taxi driver to cover medical expenses. According to newspaper reports, **the man had claimed his CFS was due to work-related exhaustion and stress**. The lawsuit was filed after the Korea Labor Welfare Corporation turned down his original application for compensation for job-related illness. An official of the Corporation said that this was the second time that a court has ordered the organization to grant compensation for CFS.

Whether or not one considers chronic fatigue syndrome to be a legitimate disease, most people would consider stress as a possible causal, precipitating or aggravating factor. Many sufferers also frequently link the onset of symptoms to some stressful emotional event, infection, or physical injury. Stress activates the hypothalamic-pituitary-adrenal (HPA) axis leading to increased release of cortisol and other hormones that influence the immune system and affect behavior. Several studies have shown that chronic fatigue patients often produce lower levels of cortisol as well as corticotrophin-releasing hormone (CRH) during stress than healthy controls, suggesting diminished activity of the HPA axis. Similar findings and low cortisol have been reported in fibromyalgia, chronic pelvic pain syndrome, post-traumatic stress disorder, rheumatoid arthritis, asthma and allergies. Patients with these problems also report higher than normal exposure to major stresses prior to developing symptoms, suggesting an altered stress response due to diminished HPA responsiveness may be implicated in their illness and subsequent low cortisol values. Glucocorticoids like cortisol suppress inflammation and cellular immune activation, and it was suggested that lower cortisol levels could relax constraints on inflammatory processes and immune cell activation. To investigate this, a 12-week double blind study was designed in which 70 CFS patients were randomized to receive either just enough hydrocortisone each day to restore their cortisol levels to normal or a placebo. Since there was little difference in improvement between the two groups at the end of the study, researchers concluded that low levels of cortisol were not directly responsible for symptoms of CFS and that hormonal replacement was not an effective treatment. However, it's not that simple. Other studies have demonstrated that patients with genetically derived glucocorticoid resistance often developed symptoms similar to those found in CFS and fibromyalgia. In other words, glucocorticoid resistance, which is manifested by impaired responsiveness to cortisol, although different than cortisol deficiency, has the same effect even though cortisol levels are normal. This study did not measure glucocorticoid resistance nor did it rule out stress as a cause of CFS for other reasons.

In an effort to further examine the role of stress, a Centers for Disease Control unit descended on Wichita, Kansas, considered to be a statistical microcosm of the United States in terms of wealth, urbanization, age, race and other demographic factors. They initially surveyed close to 60,000 people looking for symptoms of chronic fatigue syndrome and found that only about 16 percent of people with the disorder had been correctly diagnosed. The group then identified 227 chronic fatigue syndrome volunteers who were hospitalized for two days to undergo a complete set of mental, physical, blood, sleep and other tests that included 500 clinical measures and 20,000 measures of gene expression. Four independent teams containing experts in medicine, mathematics, molecular biology and computer science were then assembled to interpret all the data in order to determine any possible links to stress. Five distinct subtypes of the disease were identified that were classified according to criteria based on genetic sequence variations and the manner in which fatigue symptoms appeared. Prior research had shown that CFS sufferers had disturbances in the hypothalamic-pituitary-adrenal axis that resulted in an impaired response to stress. This was confirmed by the observation that CFS patients were twice as likely to have a high allostatic load index compared to healthy controls. Allostatic load index is a measure of hormonal responses to stress, blood pressure and other signs of wear and tear on the body. This study suggests that chronic fatigue syndrome results from some genetic influence that reduces the ability to cope with physical or mental stress resulting from injury, illness, divorce, or even occupational pressures. (Goertzel BN et al. Allostatic load is associated with symptoms in chronic fatigue syndrome patients. *Pharmacogenomics*, Apr 2006; 7:485-494) The Centers for Disease Control described the results as "groundbreaking" and the head of their CFS Research Laboratory explained, "Because we have this information, we're going to be able to predict who is more susceptible to certain types of stressful events".

Deficiencies of cortisol and/or CRH, the hormone that stimulates cortisol production, cause lethargy and fatigue in experimental studies. Paradoxically, cortisol and CRH levels tend to be high in depression, which is also associated with lethargy and fatigue, making it likely that other stress related neurohumoral changes might be involved. Studies show that certain adaptogenic herbal supplements known to improve physical performance under stress can be effective in relieving some chronic fatigue symptoms. Coenzyme Q10, the source of energy for all cellular activities, seems to have a good track record for relief of fatigue and is widely used by many patients. As indicated in prior Newsletters, certain pulsed electromagnetic fields can significantly increase Coenzyme Q10 production. Other subtle energy medicine approaches for the treatment of chronic fatigue syndrome are also being investigated – so stay tuned!



An **AIS** Seal of Approval  
For  
Stress Reduction Products  
And  
Services?

The American Institute of Stress was established three decades ago to serve as a clearinghouse for authentic information on stress related research and advances. Since then, the need for some sort of ombudsman in this burgeoning field has become even greater. Lack of governmental regulation has led to the proliferation of entrepreneurs, charlatans as well as misguided zealots making preposterous promises for worthless wares. Spin-doctors have become adept at weaving a scenario of promotional propaganda that has the patina of

scientific support by citing studies that are authoritative and accurate but totally irrelevant with respect to the product being hyped. This can be confusing for consumers as well as health care providers, especially since it can be difficult to distinguish these from novel stress reduction products and services that do have merit.

We have taken pains to expose products and claims that are clearly fraudulent, such as nutritional supplements that claim to promote weight loss by reducing stress. We have also tried to draw attention to others that have scientific backing to support their claims as opposed to anecdotal testimonials. The American Institute of Stress has never solicited nor received any financial reimbursement for endorsing any product or services to avoid jeopardizing our reputation for integrity, impartiality and objectivity. It has been suggested that we post a listing of products and services that are recommended and those that are not. However, this would be of little practical use since there are hundreds if not thousands of items that would not be covered and any such listing would require periodic reevaluation to insure its accuracy. Others have urged us to provide an *imprimatur* or something like a Good Housekeeping Seal of Approval for products that we can endorse. We have never ever accepted advertising until this year and have limited such sponsorship to products and services considered to be worthwhile. While this represents a tacit endorsement, such sponsored ads would not be cost effective for many products and services that we would also be willing to support based on the available information. What does seem to be a practical alternative and solution is to provide an annual listing or Award for products and services that have been reviewed and deemed worthy of this. This would require submitting relevant information, responding to questions that might arise and paying a modest fee for the evaluation process. If approved, some sort of logo similar to the one posted above could be used for advertising and promotional purposes. Since our web site [www.stress.org](http://www.stress.org) has long enjoyed the #1 ranking for inquiries on stress on Google and other major search engines, we will display a prominent link to a posting of all such recipients listed in the order in which approval was granted. For additional information, please submit relevant details with a cover letter to [stress124@optonline.net](mailto:stress124@optonline.net)

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Meetings Of Interest

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3rd Annual Executive Summit on Innovation and the Cost-Appropriateness of Behavioral Health and Wellness, July 12-13, 2007, Atlanta, GA. Learn How To:

- Cut Toxic Stress Effects
- Improve Employee Health & Wellness
- Control Rising Health Costs
- Improve Bottom Line & Productivity

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