

WHAT IS STRESS?

(according to the American Institute of Stress)

Stress is not a useful term for scientists because it is such a highly subjective phenomenon that it defies definition. And if you can't define stress, how can you possibly measure it?

The term "stress", as it is currently used, was coined by Hans Selye in 1936, who defined it as "the non-specific response of the body to any demand for change".

Selye had noted in numerous experiments that laboratory animals subjected to acute but different noxious physical and emotional stimuli (blaring light, deafening noise, extremes of heat or cold, perpetual frustration) all exhibited the same pathologic changes of stomach ulcerations, shrinkage of lymphoid tissue and enlargement of the adrenals. He later demonstrated that persistent stress could cause these animals to develop various diseases similar to those seen in humans, such as heart attacks, stroke, kidney disease and rheumatoid arthritis.

At the time, it was believed that most diseases were caused by specific but different pathogens. Tuberculosis was due to the tubercle bacillus, anthrax by the anthrax bacillus, syphilis by a spirochete, etc. What Selye proposed was just the opposite, namely that many different insults could cause the same disease, not only in animals, but in humans as well.

Selye's theories attracted considerable attention and stress soon became a popular buzzword that completely ignored Selye's original definition. Some people used stress to refer to an overbearing or bad boss or some other unpleasant situation they were subjected to. For many, stress was their reaction to this in the form of chest pain, heartburn, headache or palpitations. Others used stress to refer to what they perceived as the end result of these repeated responses, such as an ulcer or heart attack. Many scientists complained about this confusion and one physician concluded in a 1951 issue of the British Medical Journal that, "Stress in addition to being itself, was also the cause of itself, and the result of itself."

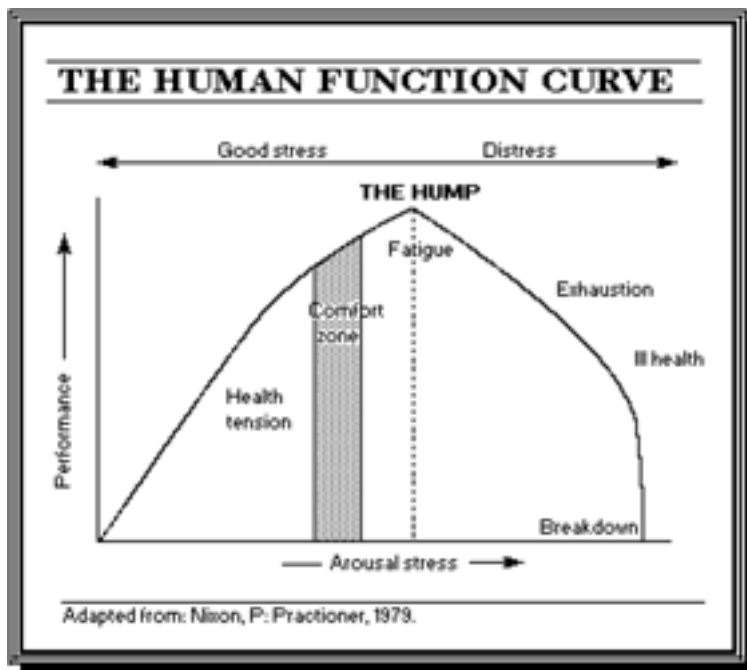
Unfortunately, Selye was not aware that stress had been used for centuries in physics to explain elasticity, the property of a material that allows it to resume its original size and shape after having been compressed or stretched by an external force. As expressed in Hooke's Law of 1658, the magnitude of an external force, or stress, produces a proportional amount of deformation, or strain, in a malleable metal.

This created even more confusion when his research had to be translated into foreign languages. There was no suitable word or phrase that could convey what he meant, since he was really describing strain.

In 1946, when he was asked to give an address at the prestigious Collège de France, the academicians responsible for maintaining the purity of the French language struggled with this problem for several days, and subsequently 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 you will see preserved in English in these and other languages that do not use the Roman alphabet.

Because it was apparent that most people viewed stress as some unpleasant threat, Selye subsequently had to create a new word, stressor, to distinguish stimulus from response.

Stress was generally considered as being synonymous with distress and dictionaries defined it as “physical, mental, or emotional strain or tension” or “a condition or feeling experienced when a person perceives that demands exceed the personal and social resources the individual is able to mobilize.” Thus, stress was put in a negative light and its positive effects ignored. However, stress can be helpful and good when it motivates people to accomplish more.



As illustrated above, increased stress results in increased productivity – up to a point, after which things go rapidly downhill. However, that point or peak differs for each of us, so you need to be sensitive to the early warning symptoms and signs that suggest a stress overload is starting to push you over the hump. Such signals also differ for each of us and can be so subtle that they are often ignored until it is too late. Not infrequently, others are aware that you may be headed for trouble before you are.

Any definition of stress should therefore also include good stress, or what Selye called eustress. For example, winning a race or election can be just as stressful as losing, or more so. A passionate kiss and contemplating what might follow is stressful, but hardly the same as having a root canal procedure.

Selye struggled unsuccessfully all his life to find a satisfactory definition of stress. In attempting to extrapolate his animal studies to humans so that people would understand what he meant, he redefined stress as “The rate of wear and tear on the body”. This is actually a pretty good description of biological aging so it is not surprising that increased stress can accelerate many aspects of the aging process. In his later years, when asked to define stress, he told reporters, “Everyone knows what stress is, but nobody really knows.”

As noted, stress is difficult to define because it is so different for each of us. A good example is afforded by observing passengers on a steep roller coaster ride. Some are hunched down in the back seats, eyes shut, jaws clenched and white knuckled with an iron grip on the retaining bar. They can't wait for the ride in the torture chamber to end so they can get back on solid ground and scamper away. But up front are the wide-eyed thrill seekers, yelling and relishing each steep plunge who race to get on the very next ride. And in between you may find a few with an air of nonchalance that borders on boredom. So, was the roller coaster ride stressful?

The roller coaster analogy is useful in explaining why the same stressor can differ so much for each of us. What distinguished the passengers in the back from those up front was the sense of control they had over the event. While neither group had any more or less control their perceptions and expectations were quite different. Many times we create our own stress because of faulty perceptions you can learn to correct. You can teach people to move from the back of the roller coaster to the front, and, as Eleanor Roosevelt noted, nobody can make you feel inferior without your consent.

While everyone can't agree on a definition of stress, all of our experimental and clinical research confirms that the sense of having little or no control is always distressful – and that's what stress is all about.