

The Bodily Response to Stress

By Eleanor Kurtus

The body responds to stress with a process that involves three stages (Marieb, 2002). The first stage is the initial alarm stage in which hormones such as adrenaline are secreted into the bloodstream creating physiological arousal. The result is that the body prepares for "fight or flight" by increasing blood pressure, heart rate, and breathing and slowing down digestion, growth, and the immune system. If the stress continues, the body moves into the resistance stage in which additional hormones are secreted and blood volume, blood pressure, and blood sugar remain elevated. If the stress does not resolve and continues for a prolonged period, there is an overload on all the bodily systems and the body falls into an exhaustion stage, which may result in fatality.

In his book "Why Zebras Don't Get Ulcers," Sapolsky (1998) describes the damaging effects of stress on animal species and includes the freshwater salmon. The freshwater salmon dies within 2 to 3 weeks after spawning. During this period, the salmon develops ulcers, muscle atrophy, immune collapse, opportunistic infections, and a collection of diseases all accompanied by excessive glucocorticoid levels (stress hormones released by the adrenal glands). When the salmon spawns, the internal regulation of glucocorticoid secretions is lost, causing a host of problems and imminent death. If the adrenal glands are removed after spawning, the salmon does not die but lives for up to 1 more year (Sapolsky, 1992). Similar damaging results due to stress hormones have been observed in other animal species and the suggestion is that the same type of breakdown mechanism exists in humans on a slower basis.

The body reacts with a physiological response to stressors that is normal and aids us in facing threats and defending ourselves. Problems arise when the response becomes prolonged or frequent and we mobilize it in response to events of modern living instead of the acute emergencies that it appears to be designed for (Brehm, Kassin, & Fein, 2005). Stress in humans has been related to both a weakened immune system and coronary heart disease (CHD).

Stress has been identified as a risk factor for CHD, along with other risk factors of hypertension, smoking, high cholesterol, genetics, obesity, and lack of exercise (Brehm, Kassin, & Fein, 2005). Individuals who have the traits of being hard driving, competitive, impatient, time conscious, and quick to anger have been classified as having Type A behavior pattern. Type A is more accurately diagnosed using a face-to-face interview, rather than a self-report questionnaire. When it is accurately diagnosed, the link to CHD has been observed. The Type A was defined in a broad manner and researchers have narrowed down the component of hostility as being the main destructive attribute.

Methods of coping with stress can be categorized as problem-focused, emotion-focused, or proactive (Brehm, Kassin, & Fein, 2005). Problem-focused coping involves cognitive and behavioral efforts to alter the situation and alleviate the stress. It involves dealing with the stressor by confronting and controlling it. For instance, if I have a lot of housework facing me, I would organize it into manageable tasks, draw up a schedule, and enlist aid with the tasks.

Emotion-focused coping uses cognitive and behavioral efforts to alter the way we attend to or interpret a stressful situation (Brehm, Kassin, & Fein, 2005). This may involve reappraising the event with positive emotions, using distraction to reduce the distress, or seeking help through psychotherapy, self-help groups, or religious groups. For instance, if I have a backlog of housework, I may seek help from a counselor to address the issue of why I procrastinate with this responsibility and how to resolve the procrastination.

Proactive coping consists of taking action before a stressful event occurs to reduce or eliminate its impact (Brehm, Kassin, & Fein, 2005). An example is an individual who reads news reports or hears rumors that her/his line of work is declining and future employment in that area is bleak. This individual would utilize proactive coping by such things as getting trained in another area and building financial reserves to carry over in case of unemployment. Proactive coping also involves building a support network of family, friends, community, and religious groups. Research has demonstrated that social support is therapeutic both psychologically and physically (Cohen et al., 2000; Uchino et al., 1996; Wills, 1990, as cited in Brehm, Kassin, & Fein, 2005).

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