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Physiology of Stress

Basic information regarding the systems which can be affected as a response to stress.

Written by L. John Mason, Ph.D., Author of the Bestseller; [Guide to Stress Reduction](#).

The way the body responds when stressed!

Physiology of Stress

The primitive survival mechanism known as the "Fight/Flight" response is built in to every human. It responds to fear/danger from everything from life threatening situations to the alarm going off in the morning. Every human has a habitual response to stress that is either learned or genetically implanted. In a real life or death situation almost all of this response will be trigger by survival to help you to fight off or flee this danger.

Since awareness is half the battle in controlling stress, you must learn to be aware of how you respond to stress. Remember, you have a unique response. It may include:

1. Increased heart rate. This pumps blood around the body to get oxygen and sugars to the cells that you will need to use to survive. Symptoms that can be associated with this stress response might include: Rapid or irregular heartbeats
2. Breathing usually becomes more rapid to get more oxygen into the body. Symptoms that can be associated with this stress response might include: hyperventilation and some forms of asthma.
3. Stress hormones are released. Adrenaline, also called epinephrine, is released by the adrenal glands. This hormone helps to maintain increased heart rates and will tell the liver to release stored sugar for energy to the body. Other stress hormones do other thing. Noradrenalin is associated with anger and will raise blood pressure for most people. Symptoms that can be associated with this stress response might include: high blood pressure, panic or anxiety
4. Blood pressure can go up. Triggered by released stress hormones. Symptoms that can be associated with this stress response might include: high blood pressure
5. Muscles that you would use to fight or flee often become very tight until released by relaxation, massage, stretching, or exercise. This is one of the most common responses to stress and has lead to everyday expressions like: "uptight", "Pain in the neck" (and other places.) Symptoms that can be associated with this stress response might include: tension headaches, tight jaw, neck/shoulder pain/tension, back pain, insomnia (including trouble getting to sleep,



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staying asleep, or not feeling rested after sleeping), fatigue, loss of concentration (distracted by muscle pain or tension), learning disabilities, poor communication (listening and speaking)

6. Changes in blood flow/circulation. Blood is directed toward the brain and major muscles for survival. Blood is directed away from surface of skin in hands and feet (for survival a primitive response so you do not bleed to death if you get cut running away or fighting for your life.) Blood is directed away from digestive organ and reproductive organ because for survival it becomes a low priority to digest food or keep the species alive if you are threatened. Symptoms that can be associated with this stress response might include: high blood pressure, cold hands and feet, upset stomach, migraine headaches, pre-ulcerous/ulcerous conditions, increased colitis, sometimes constipation, and 70% of sexual dysfunction in both men and women can be linked to this stress response.

7. All of your senses are heightened are survival vigilance. You are more sensitive to noise (ringing telephones or door bells), to light, to smells, even to increased sensitivity to touch. Your neo-cortex (the thinking part of your new brain) shuts down and the survival mechanisms in the middle and lower more primitive parts of the brain take over, so you react to things and do not think things through as well. Basic emotions: fear, anger, sadness, and joy (nervous laughter) take over from complicated, sophisticated higher function emotions. Symptoms that can be associated with this stress response might include: emotional irritability, substance abuse to escape stress through self-medication, anxiety, depression, poor impulse control, poor problem solving and reduced communication abilities

8. You perspire/sweat to cool the body's increased metabolism down. Symptoms that can be associated with this stress response might include: hyperhidrosis (which can lead to dehydration due to over sweating)

9. Imbalances in normal hormone levels. Longer term, unresolved stress can affect the immune system which is normally there to fight off infections and promote healing. Symptoms that can be associated with this stress response might include: frequent colds or flu's, infections, cancer or tumor development, increased allergic responses, auto-immune diseases (rheumatoid arthritis, lupus, scleroderma)

Everyone holds their tension in one or more of these systems. You need to identify which systems respond when you get stressed and then learn to release this physical tension. It takes time and motivated practice to learn to let go but the results in enhanced quality of life and increased productivity are worth the effort.