



Massage Health & Healing *Energies*, LLC

# How Stress Affects Your Body

**STRESS!** In short, stress causes irritation. Irritation in the body, mind or spirit leads to dis-ease. Dis-ease in the body can cause health problems. Relaxation is a key component to towards reducing stress and irritation in the body, mind or spirit thus reducing the possibility of illness. At Massage Health & Healing *Energies*, LLC we feel it is imperative to include relaxation for the optimum health and healing ability of your body.

**A detailed explanation of stress and how the body reacts to it is explained further by excerpts from Linda Ludwig, B.A., RMT co-author of Clinical Massage Therapy.**

Stress is defined as the body's non-specific response to any demand made upon it (Selye, 1974). Stress is not a disease but can contribute to ill health.

Stress includes the usual physiological activity required to maintain homeostasis (keep the body in balance) and the healthy emotional stress that makes life interesting and exciting. *Distress* is the term used to denote harmful aspects of physical and emotional stress. Through common usage, stress has come to signify the negative aspects of this state, physically or emotionally, such as physical injury, illness, pain, fear, challenge, grief or change.

**Causes of stress vary for each individual but include:**

- **Fear of Bodily Harm**
- **Emotions** such as anxiety, depression and fear;
- **Threats to self-esteem;**
- **Pain** from injury or disease;
- **Excessive intake of a stimulant** such as caffeine or chocolate, or as a side effect of medication such as overuse of an inhaler or respiratory difficulties;
- **Pathology** such as hypothyroidism or a tumor affecting the pituitary or thyroid glands;
- **Environmental exposure** to toxins or to excessive heat or cold

**Effects of long-term stress on the body and why stress can cause illness:**

Stressors can be environmental agents or events, within or outside the body. They include mental and physical effort. Stress Reactivity is very individual, relating to the body's physiological response to a trigger.

**Duration of the stressor influences the person's reactivity to it:**

- ***A brief acute event*** that does not recur, such as the immediate act of jumping out of the way of an oncoming car: the body's response is rapid and efficient;
- ***A series of stressful secondary events*** that occurs as a result of an initiating event, such as divorce or job loss: yields various regularly occurring stressful situations, which, over time, can increase the person's physiological responses to potential stressors;
- ***Chronic intermittent stress;*** such as school exams or work deadlines: requires frequent responses to a regularly occurring stressor;

Our goal at Massage Health & Healing *Energies*, LLC is to help you and your body heal from the daily stress and strain that today's lifestyle places on you.

## How Stress Affects Your Body (Continued)

- **Chronic and sustained stress;** for example, not having time for breakfast, then getting stuck in traffic, followed by being unprepared for a meeting, being put on hold on the telephone, having lunch served slightly cool, and so on, all in one day, compounded by underlying stresses such as financial, health or relationship issues: is the most incapacitating.

### Stages the body goes through according to the duration of the stressor:

- **Alarm** denotes the first exposure of the body to a particular stress. The body's cortisol (a stress hormone) levels are high and no one organ system is predominantly active (Porth, 1990). A sufficiently severe stress, such as a third degree burn on a large portion of the body, can be fatal.
- **Resistance/Adaptation** occurs if exposure to the stress continues. The body tries to resist the stress and adapt to it; the initial alarm response diminishes and cortisol levels decrease. The body's resistance response rises to above its normal reaction level. The duration of this period depends on the body's innate ability to adapt and the intensity of the stressor.  
The body has a limited amount of energy to adapt to stress. A person risks his health by ignoring the body's limitations and exposing it to too much stress. Working long hours, not sleeping enough, eating poorly and drinking to excess can lead to illness. Ways of conserving the body's adaptive energy include a good night's sleep. After a stressful time, a holiday can restore resistance and adaptive ability.  
In a physiological sense, the body will use the most efficient and effective response to a stressor. Short-term responses will be used first, such as a temporarily increased heart rate to increase oxygen to tissues in need. If the situation becomes chronic, a long-term adaptation occurs, such as hypertrophy to the heart's left ventricle in response to systemic hypertension.
- **Exhaustion** results after long exposure to the same stressor. The body has adapted but eventually the adaptive energy is exhausted. Signs of acute stress response, as in the alarm state, reappear.  
At this point, the reaction spreads through other systems in the body. Originally, adaptation occurs in the most appropriate systems but, over time, wear and tear result and other areas are affected (Porth, 1990).

**Stress is governed by the Autonomic nervous system.** The Autonomic nervous system regulates the internal functions of the body, in order to maintain a consistent internal environment (homeostasis). The autonomic system is divided into two parts: the **Parasympathetic** nervous system (Rest & Digest) and the **Sympathetic** nervous system (Fight or Flight).

**The Parasympathetic nervous system, the Rest & Digest Response, conserves energy and serves to restore resources** and maintain organ function during times of minimal activity. This system conserves the body's energy by slowing the heart rate and promoting the digestion of food-the 'rest and digest' functions.

### The Parasympathetic nervous system is responsible for:

- ✓ Reduction of the heart rate
- ✓ Constriction of the pupils
- ✓ Secretion from most of the glands such as the salivary glands in the mouth and the gastric glands in the stomach
- ✓ Facilitation of food transit through the gastrointestinal tract with promotion of peristalsis and a decrease in the tone of the gastrointestinal sphincters

Our goal at Massage Health & Healing *Energies*, LLC is to help you and your body heal from the daily stress and strain that today's lifestyle places on you.

## How Stress Affects Your Body (Continued)

- ✓ Facilitation of repair and recovery to injured, torn or stressed fibers in your body

### **The Sympathetic nervous system, Fight or Flight Response, expends a body's energy.**

The stress response is caused by the body's instinct to defend itself. This instinct, known as the fight or flight response, is a programmed reaction to perceived danger. Physiologically, the body gains alertness, strength and speed, allowing for immediate life-saving action. Many systems in the body are involved in initialing and maintaining this complex response. Increased firing of this system is commonly referred to as the fight or flight response.

### **The Sympathetic nervous system causes:**

- ✓ Mental alertness
- ✓ Increases in cellular metabolism
- ✓ Release of glucose and fats from the liver for quick energy and fuel for the cells involved in this intense activity
- ✓ Increase heart rate, as much as three times the norm, and increased force of heart contractions
- ✓ Controlled blood flow, causing vasodilation (or a reduction of constriction) in skeletal-muscle blood vessels to better support the muscles that will be engaged in fleeing to safety or fighting. Skin and abdominal blood vessels may be vasoconstricted to limit bleeding in the case of an injury
- ✓ An elevation in blood pressure from the increased peripheral resistance in the circulatory system, due to increased vasoconstriction
- ✓ Dilation of the bronchioles and rapid, apical breathing to allow increased oxygen intake
- ✓ Dilation of the pupils to allow more light to enter and increase visual acuity
- ✓ Changes in the digestive process, such as a dry mouth and slower transit of food through the gastrointestinal tract due to the inhibition of peristalsis and increased tone of the sphincters
- ✓ A decrease in urine output because of constriction of the urinary sphincters (digestion, defecation and urination are not essential activities if a person's life is in danger)
- ✓ Increased sweating to cool the body that is engaged in activity

While this stress response is appropriate in an emergency, it is not a useful reaction to life's daily challenges and changes.

**Stress can cause health problems or make them worse. The body expends a lot of energy during this stage but has no chance to refuel and rebuild.** Today, there is an increased interest in the role that stress plays in the development of disease. As the adaptation state goes on, physical symptoms occur. The area of the body affected by stressors will depend on which area of the body is the weakest link. Therefore, stress may contribute directly to the development of disease. It can also cause behaviors that contribute to the development of disease. Many people respond to stressful events by overeating, eating an unhealthy diet, smoking and increasing alcohol consumption or drug use, all of which place further stresses on the body.

The body can respond to physical or emotional stress by actively engaging in the stress response or by passively accepting the situation. Since a certain amount of stresses are inevitable and unavoidable, it makes sense to develop efficient coping strategies.

**Massage therapy has a very positive impact in reducing the effects of stress** on the body and can initiate a Parasympathetic State, the Rest & Digest Response; giving the body a chance to heal.

Our goal at Massage Health & Healing *Energies*, LLC is to help you and your body heal from the daily stress and strain that today's lifestyle places on you.