



# ASK A NURSE!

## *Let's Learn About Stress Physiology.*

Stress affects your body's nervous system in a variety of ways. For example, the sympathetic nervous system regulates the stress response, while the parasympathetic nervous system calms the stress response. These are some of the ways that happens:

### Sympathetic Responses

- ⇒ Pupils of the eyes dilate
- ⇒ Heart rate speeds up
- ⇒ Breathing gets faster
- ⇒ Perspiration becomes heavier
- ⇒ Salivation increases

### Parasympathetic Responses

- ⇒ Pupils contract
- ⇒ Heart rate slows down
- ⇒ Breathing rate decreases
- ⇒ Endocrine system slows
- ⇒ Gastrointestinal changes begin

### **When the stress response is activated, this is a short version of what it looks like:**

1. Stress hormones (epinephrine and norepinephrine) are secreted. Their purpose is to help you fight or run from a perceived danger.
2. The anterior pituitary gland secretes:
  - Aldosterone and vasopressin—They send more blood to the most vital organs (like the brain, heart, lungs, kidneys) and less blood to the less vital organs (like the skin and digestive tract).
  - Cortisol—Levels rise under the influence of stress. When those levels stay elevated for too long, that causes our immune function to decrease, resulting in things like autoimmune disease, cancer and even allergies.

### **....Why Stress Physiology Matters....**

Stress is rampant everywhere we look. It is in the home, the workplace and in our society. The impact of stress determines not only our physical, mental, and emotional health, but also the vitality of our economy.



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Not all stress is bad for us. In fact, it is believed that a certain amount of stress spurs us on to get things done. Even good things, exciting things (like a graduation, a wedding, the birth of a baby, etc.) can be stressful. And they can also have a negative effect on us, starting with some of the uncomfortable short-term symptoms shown below.

### Short-Term Stress Symptoms

- ⇒ Increased breath rate
- ⇒ Faster pulse rate
- ⇒ Cold hands, feet, skin
- ⇒ Diarrhea
- ⇒ Nausea
- ⇒ Heavy perspiration
- ⇒ Dry mouth
- ⇒ Headaches
- ⇒ Muscle tension

### Long-Term Stress Symptoms

- ⇒ Chronic pain//Headaches
- ⇒ Constipation//Diarrhea
- ⇒ Immune system problems (arthritis, susceptibility to infection, cancer, etc.)
- ⇒ Elevated blood pressure or blood lipid levels
- ⇒ Changes in eating habits
- ⇒ Trouble thinking, concentrating, remembering//Mood changes

However, when we are exposed to frequent or prolonged stress, then we can suffer in more serious ways; see a partial list of symptoms listed above. Long-term stress puts us at risk for developing chronic conditions and also for making already present chronic diseases even worse. These are good reasons for learning to deal better with stress.

People react to stress in different ways. And that partially is related to how we think, how we work, and how we play. When we have good stress management skills embedded into our daily lives, we are better able to cope with both good and bad stress. Our minds and bodies become stronger and more resilient...better able to negotiate everyday living in a tumultuous, fast-paced world.

This white paper was first written/published on 11/05/2019 by Cathy Brown, RN.