

## Body Systems and Stress

Your stress hormones increase when your stress response system is activated. If it *stays* activated, there are adverse effects. Ideally our stress hormone system should provide a lightning-fast response to threat, but then quickly return us to equilibrium. In those with PTSD, the stress hormone system struggles to manage this balancing act. Fight/Flight/Freeze signals continue after the danger is over and do not return to normal. Instead, the continued secretion of stress hormones can be expressed as agitation and panic. **Gradually, a new baseline is created in the body, and our bodies begin to “crave” that level and experience “withdrawal” when it’s not available.**

### Musculoskeletal System

- Muscle tension— the body’s reflexive reaction to stress (bracing) to guard against injury and pain.
- Muscles tense up and then release when the stress passes.
- Chronic state of guardedness that may trigger other reactions of the body and even promote stress-related somatic issues. (i.e. headaches, neck and back pain)

### Respiratory System

- Breath gets shallow and rapid, airways become constricted
- Results in pumping more blood to heart for cardiovascular system to prepare the body for defense/attack.

### Cardiovascular System

- Causes an increase in heart rate/stronger heart muscle contractions.
- The spleen discharges red and white blood cells, allowing the blood to transport more oxygen throughout the body. Blood flow may actually increase 300 - 400% (elevating blood pressure), priming the muscles, lungs, and brain for added demands (think fight or flight).
- The blood vessels that direct blood to the large muscles and the heart dilate to support increased flow.
- The consistent and ongoing increase in heart rate can increase the risk for hypertension, heart attack or stroke.

### Male Reproductive System

- Excess Cortisol can affect normal functioning.
- Chronic stress can affect testosterone production, sperm production and maturation, and cause erectile dysfunction or impotence.

### Female Reproductive System

- Absent or irregular menstrual cycles, more painful periods and changes in the length of cycles.
- Increased symptoms (cramping, bloating, negative mood, mood swings, hot flashes, etc.) prior to menstruation (PMS) and menopause.

### Gastrointestinal System

- Increased or decreased appetite. If you eat more/different foods, or increase your use of alcohol or tobacco, you can experience heartburn or acid reflux. Stress or exhaustion can also increase the severity of heartburn pain. Stress is also simply shut/slow down digestive activity, which is non-essential. Long term can slow down metabolism and cause weight gain.
- Increased alertness to sensations in stomach, including “butterflies,” nausea, pain, vomiting. Chronic stress can induce ulcers or severe stomach pain without ulcers.
- Affects digestion and nutrient absorption. It can also affect how fast food moves through your body, possibly resulting in either diarrhea or constipation and can impact weight gain/loss.

### Endocrine System

- Once triggered, a cascade of chemicals is triggered within the cell.
- The endocrine system signals the autonomic nervous system and the pituitary gland and the process is started to produce stress hormones.
- Dysregulated body temperature. Blood flow moves away from skin, causing cool, clammy skin and sweaty palms. The scalp tightens resulting in hair standing up.
- Dysregulated thirst and hunger. Fluids diverted from non-essential areas, causing dry mouth and difficulty talking.
- Dysregulated sleep (sleep latency, sleep quality, sleep quantity)
- Dysregulated emotional (re)activity.