



Divisions of the nervous system.  
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The NERVOUS SYSTEM is divided into two main parts, anatomically: central nervous system and peripheral nervous system.

The central nervous system (CNS), is the control center for the whole system. It consists of the brain and spinal cord. All body sensations and changes in our external environment are relayed from receptors and sense organs to the CNS to be interpreted.

The peripheral nervous system (PNS) is subdivided into several smaller units. This system consists of all the nerves that connect the brain and spinal cord with sensory receptors, muscles, and glands.

- The PNS can be divided into two subcategories:

- The sensory system, which consists of afferent or sensory neurons that convey information from receptors in the periphery of the body to the brain and spinal cord.

- The motor system, which consists of efferent or motor neurons that convey information from the brain and spinal cord to muscles and glands.

- The motor system can be further subdivided into two subcategories:

- The Somatic Nervous System (SNS), which conducts impulses from the brain and spinal cord to skeletal muscle, thereby causing us to respond or react to changes in our external environment.

- The Autonomic Nervous System (ANS), which conducts impulses from the brain and spinal cord to smooth muscle tissue (like the smooth muscles of the intestine that push food through the digestive tract), to cardiac muscle tissue of the heart, and to glands (like the endocrine glands). The ANS is involuntary.

-The organs affected by the ANS receive nerve fibers from two divisions of the ANS:

- The sympathetic division, which stimulates instinctual physiological reactions, focused exclusively on survival and preservation of the physical body.

Aka “**Fight or Flight**” reaction to Lions Tigers, Bears, Guns, and Knives. “**Stress mode**”

- The parasympathetic division, which stimulates the body’s vegetative activities, healing responses, and regenerative states such as digestion, urination, defecation, immune system activity, and more. Activation of parasympathetics reduces sympathetic activities, because these two branches of the autonomic nervous systems can NOT activate simultaneously; they are inversely related.

Aka “**Rest and Digest**” “**Relax Mode**”

## Sympathetic Dominance (Stress) VS ParaSympathetic Dominance (Relax): What happens in YOUR BODY.

### Sympathetic Dominance:

- Involves primitive, instinctual physiological reactions, designed specifically for survival and preservation of the physical body. **“Fight or Flight” / “Stress Mode”** is designed to fight or escape Lions Tigers, Bears, Guns and Knives. Thus, this physiological state is designed to persist for 5 minutes, 15-20 minutes max, because either we subdue the “threat,” we escape the “threat,” or ... we die! Either way, the body is meant to shift back into, and remain, in **relaxation mode** within minutes... NOT persist in stress mode for hours on end... In our society today, we have redefined “stress” such that “stressors” appear as traffic, finances, deadlines, “uncomfortable” confrontation, etc, etc, etc. This paradigm creates an unsustainable existence; the body is destined to malfunction and self-destruct through a plethora of chronic disease forms. ... **“Apoptosis”** = the process of programmed cell death. Every single one of our cells, has a default programming to self-destruct, if subjected to excessive or continual stressors causing malformation or dysfunction ... If more cells self-destruct, rather than thrive, it’s lights out for the organism.
- **Cortisol and Adrenaline** hormones are released in high volume from the adrenal glands (cortex) into the blood stream, stimulating a cascade of physiological changes described below.
- Significant **blood volume** is shunted **away from digestive organs** (stomach, intestines, pancreas, liver, gallbladder, kidney); These organs may VOID themselves (urinate, defecate, vomit) at onset of sympathetic dominance (severe stress/shock scenario) to ENSURE FOCUS is given to FIGHTING or ESCAPING.
- Thus **ceasing** activities including: **digestion** of whole foods; **absorption** of nutrients across intestinal membrane into blood stream; **assimilation** of nutrients into bodily structures; **detoxification** of waste products by liver and kidneys (resulting in waste products being re-circulated through the blood stream and **deposited** into **joint capsules** and **fat tissue** – which is our body’s secondary defense to keep metabolic waste away from our brain and vital organs, when it is deprived of the ability to excrete it from the body!!)
- **Blood sugar spikes and imbalances** occur as **insulin** is no longer being released from pancreas. **Insulin** is required to bind glucose (sugar) in the blood and usher it into cells where it can be converted into energy molecules. NO INSULIN = SUGAR NOT GETTING INTO CELLS. Thus, sugar remains floating in the bloodstream, while cells are “screaming” messages to the brain to eat more sugar for more energy! The cells have no way of knowing that sugar is floating all around them.
- **Blood volume** is shunted toward HEART, LUNGS, and skeletal muscles in ARMS & LEGS to support FIGHTING or ESCAPING.
- **Heart Rate INCREASES** to support increased oxygenation of skeletal muscles.
- **Hyperventilation (INCREASED Respiration Rate)** to support increased oxygenation of skeletal muscles.
- **Instinctual reaction** takes priority over higher cognitive processing. Thus, **concentration** and **attention span** is reduced, ability to **access memory data** is reduced, and **formation of new memories** is limited.

- **Immune system activity is suppressed:** Blood Circulation now prioritizes **oxygen distribution**, **NOT immune cell distribution**, because the organism's priority is surviving the external threat, NOT scavenging bacteria, viruses, and other pathogens that continue to accumulate within the organism during periods of stress.
- **Reproductive ability is suppressed:** **Cholesterol** is the starting molecule to make **cortisol** (stress hormone) AND **estrogen + progesterone** (reproduction hormones). There is a finite supply (only so much) of cholesterol in the body, and when the body perceives **stress** it shifts **priority** to making **cortisol** for **survival** of the organism, and **reduces** production of estrogen + progesterone to sub-optimal levels for reproduction (ie: not making estrogen/progesterone in sufficient amounts to support healthy follicle and ovum development [ex: PCOS; other]; not making progesterone in sufficient amounts to build up uterine lining and sustain a pregnancy[ex: miscarriage]), and eventually detrimental levels for the organism itself, if the stress state persists too long.

### **ParaSympathetic Dominance**

- Stimulates the body's **digestive activities**, **healing responses**, and **regenerative capacity**. Aka "Rest and Digest" "Relax Mode"
- Activation of parasympathetics reduces sympathetic activities, because these two branches of the **autonomic nervous system** can not activate simultaneously; they are inversely related.
- **Acetylcholine (Ach)** is a hormone and neurotransmitter released in high volume from the adrenal glands (medulla) into the blood stream to stimulate all the **parasympathetic** innervated organs, creating a cascade of physiological changes described below.
- Significant **blood volume** is shunted **back to digestive organs** (stomach, intestines, pancreas, liver, gallbladder, kidney);
- Thus **promoting** activities including: **digestion** of whole foods; **absorption** of nutrients across intestinal membrane into blood stream; **assimilation** of nutrients into bodily structures; **detoxification** of waste products by liver and kidneys; **defecation** of waste; **urination** of waste.
- **Blood sugar regulation**, as **insulin** is now being secreted from the pancreas. **Insulin** is required to bind glucose (sugar) in the blood and usher it into cells where it can be converted into energy molecules.
- **Blood volume** is shunted **away** from HEART, LUNGS, and skeletal muscles in ARMS & LEGS.
- **Heart Rate DECREASES** and stabilizes.
- **Respiration Rate DECREASES** and stabilizes.
- **Higher cognitive processes are Restored** such as: **concentration**, **attention**, **access to memories** and **memory formation**.
- **Reproductive ability is Restored:** Cholesterol molecules are now available to make increased/sufficient amounts of estrogen and progesterone to support healthy follicle and ovum development, and build up uterine lining to retain a pregnancy.
- **Immune system activity is Restored:** Blood Circulation now prioritizes **immune cell distribution**, and can resume it's many functions of monitoring and scavenging bacteria, viruses, and other pathogens; scavenging old and damaged cells and tissues; tissue repair; and more.

**o Disclaimer!** : This process may result in periods of "illness" as the body strives to clean up its internal environment following periods of stress. ALLOW Yourself to BE Sick. DO NOT suppress illness with drugs, steroids, or antibiotics. SUPPORT Your body's restoration and recovery with WATER, BREATH, HERBAL MEDICINE, GREEN VEG, BODY WORK.