

Autonomic Nervous System (ANS)



The Sympathetic & the
Parasympathetic Divisions



The Functions...

- Maintaining our homeostasis, w/o our conscious awareness.
- It affects our heart, our smooth muscles, our glands, our blood vessels.
- Do you actually notice when your heart beats faster or a blood vessel changes size?



Two Main Situations

1. In emergencies, when we are under stress, the ANS sets us up for “fight or flight.”
2. In non-emergencies, it allows us to “rest and digest”.

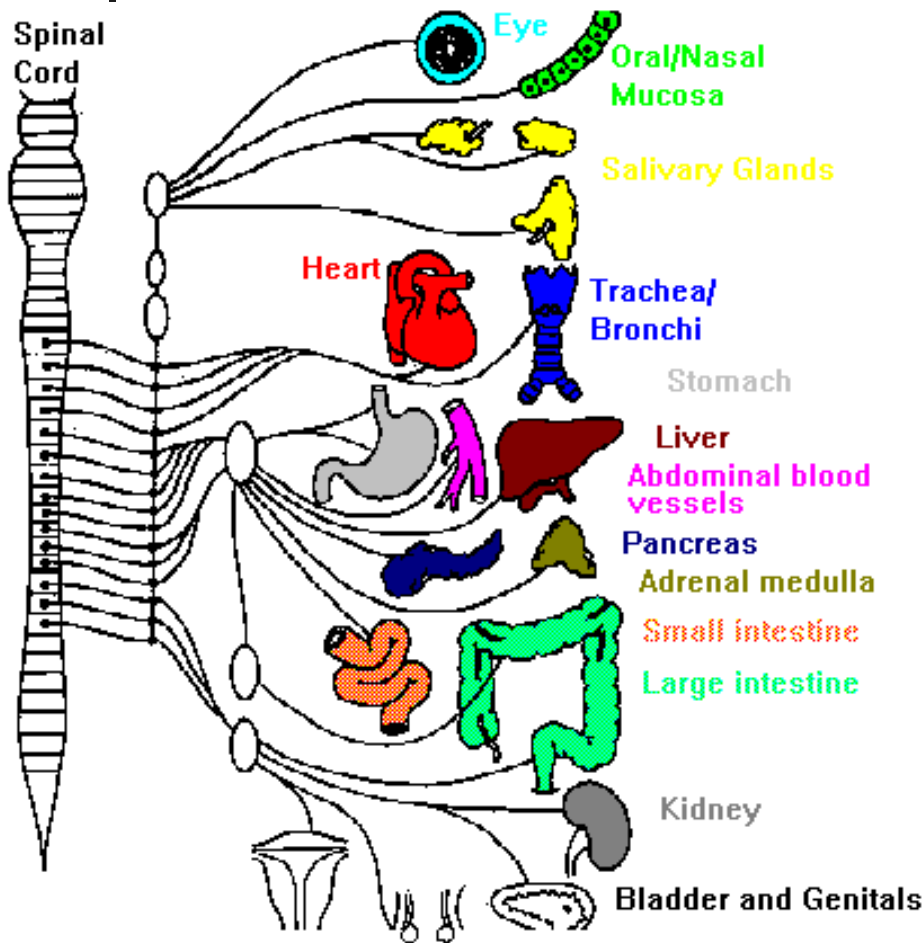




The ANS Has 2 Parts

1. The sympathetic and the...
2. The parasympathetic divisions

The Sympathetic System



- Notice in the picture on the left that the sympathetic nervous system originates in the spinal cord.
- The cell bodies of the first neuron (the preganglionic neuron) are located in the thoracic and lumbar spinal cord. Axons from these neurons project to a chain of ganglia located near the spinal cord.

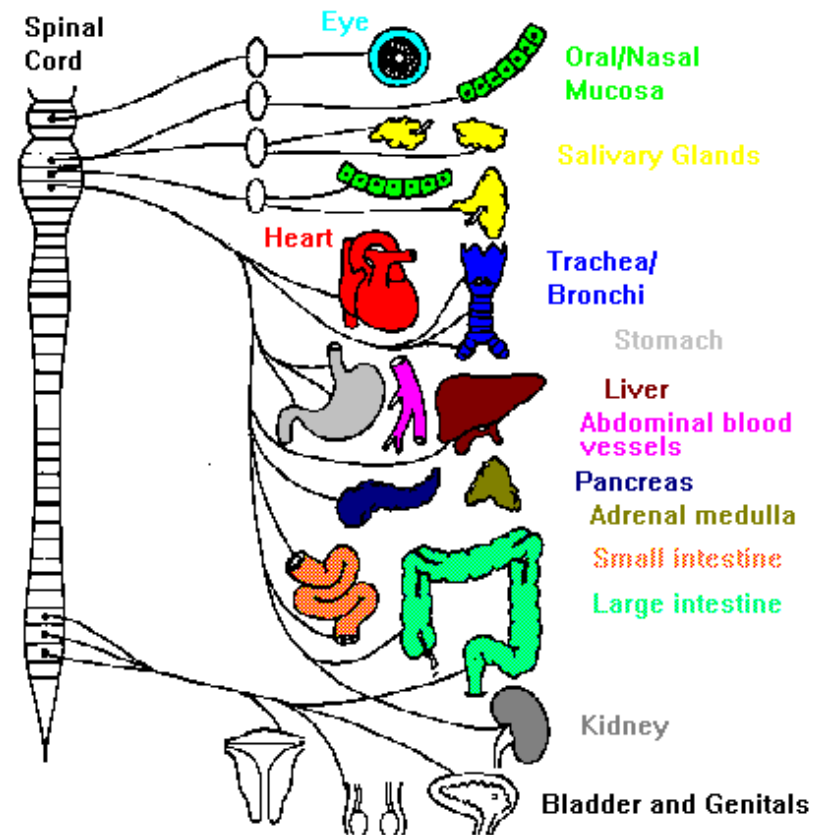


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- The Sympathetic system prepares these organs and glands for fight or flight.

The Parasympathetic System

- the cell bodies of the parasympathetic nervous system are located in the spinal cord (sacral region) and in the **medulla**.
- They prepare the organs and glands for rest and relaxation.





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Effects of ANS

<u>Organ</u>	<u>Sympathetic</u>	<u>Parasympathetic</u>
Eye	Constriction of pupil	Dilation of pupil
Heart	Increased Rate	Decreased Rate
Blood Vessels	Constriction	Dilation
Uterus	Pregnant-contraction Not Pregnant- relaxation	No Effect
Penis	Ejaculation	Erection