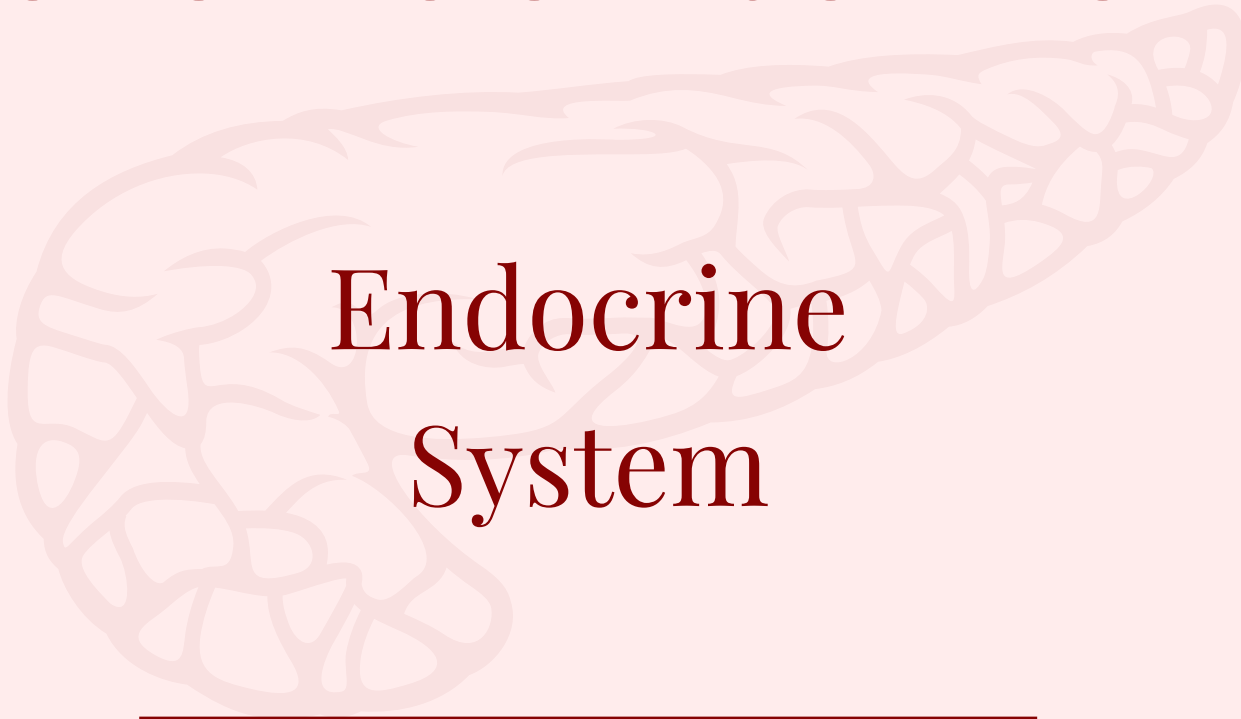


ATI TEAS Science Review



Endocrine
System

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ENDOCRINE SYSTEM

Function: control of the body, but effects are slow and prolonged (opposite of nervous system).

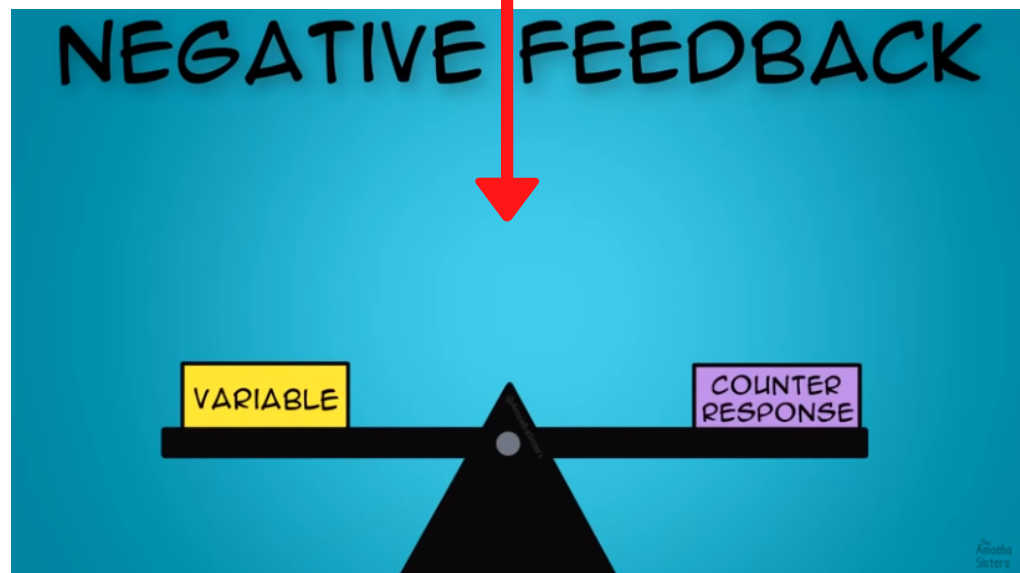
Gland types:

- Exocrine – produce non-hormonal secretions through ducts.
- Endocrine – ductless glands that produce hormones secreted directly into body fluids.
- Mixed glands – perform both endocrine and exocrine functions.

** Many standardized exams expect students to know the difference between exocrine and endocrine glands!**

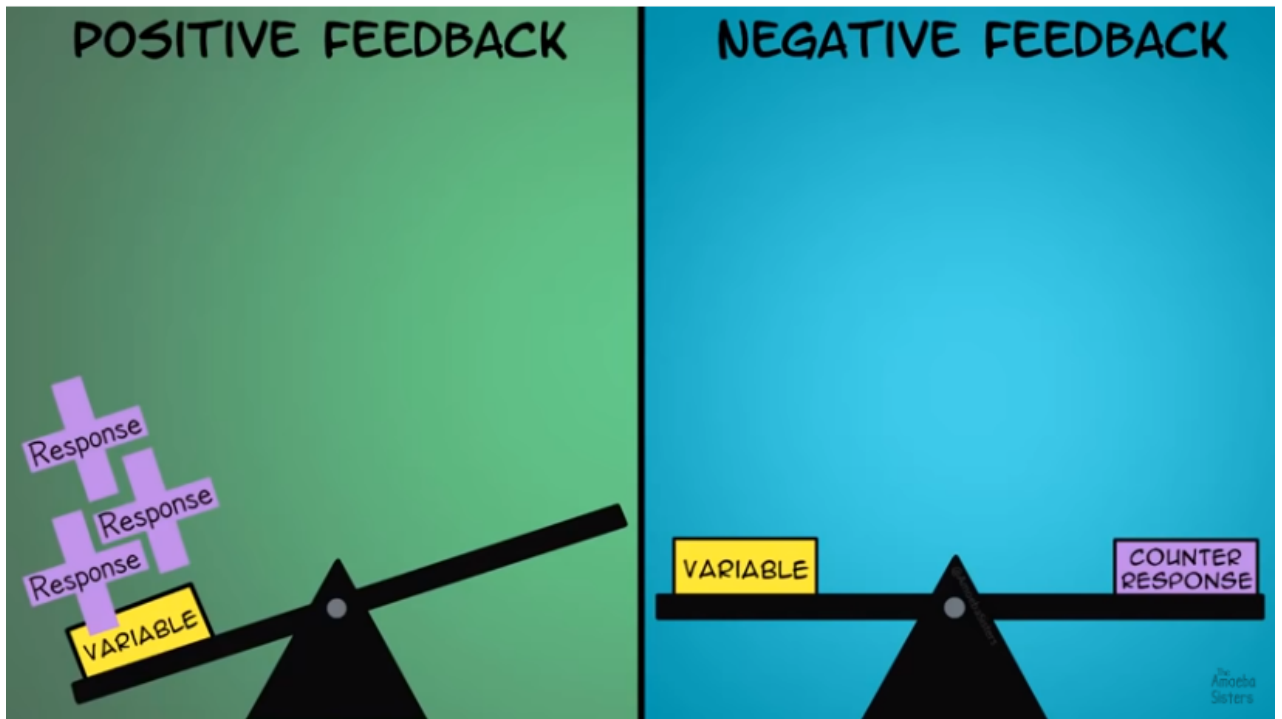
Negative vs. Positive Feedback:

Negative feedback is when some variable triggers a counteractive response. i.e. your body shivers when it is cold to generate warmth. (The body tries to bring the body back to homeostasis)



Negative vs. Positive Feedback:

Positive feedback is when you intensify the variable instead of counteracting it. i.e. pregnancy contractions.



Photos are courtesy of the Amoeba Sisters on Youtube. I highly recommend you watch their video to get a better understanding of homeostasis and negative vs positive feedback. You can watch the video [here](https://www.youtube.com/watch?v=Iz0Q9nTZCw4&vl=en). (or copy and paste this link: <https://www.youtube.com/watch?v=Iz0Q9nTZCw4&vl=en>)

Common examples of negative feedback: the regulation of body temperature, the regulation of sugar levels in your blood.

Common example of positive feedback: labor, defecating



ENDOCRINE SYSTEM

- **Hypothalamus:** It releases/inhibits hormones. It stimulates pituitary
-Part of the diencephalon. The nervous system integrates here.

- **Anterior Pituitary** (7 hormones secreted):

1) Adrenocorticotropic Hormone (ACTH). It stimulates adrenal cortex to secrete glucocorticoids (steroids).

2) Thyroid Stimulating Hormone (TSH). It stimulates the Thyroid gland to produce thyroxine.

3) Follicle Stimulating Hormone (FSH). Stimulates production of ova (females) and sperm (males).

4) Luteinizing Hormone (LH). It stimulates Ovaries (females) and Testes (males). (estrogen and testosterone).

5) Prolactin. It stimulates milk production in mammary glands.

6) Growth Hormone (GH). It stimulates growth (bones) and metabolic functions (repair and growth).

7) Melanocyte Stimulating Hormone (MSH). It stimulates melanocyte production in the skin.

- AKA the master gland because it makes so many hormones that regulate other organs. It is located at the base of the brain. It controls growth and development.

- **Posterior Pituitary** (2 hormones secreted):

1) Antidiuretic Hormone (ADH). It promotes retention of water by the kidneys.

2) Oxytocin. It stimulates contraction of uterus and mammary gland cells to release milk. It promotes bonding.

**** Both of these hormones are made in the hypothalamus but secreted from pituitary****

- **Pineal Gland:** Melatonin. It promotes sleep cycles and biorhythms.

- **Thyroid:** (3 hormones secreted)

1) Triiodothyronine (T3) affects metabolism.

2) Thyroxine (T4) affects metabolism and temperature.

3) Calcitonin inhibits release of Calcium from bones

- T3 and T4 are metabolic hormones. The thyroid is in the neck and it regulates growth, development, and metabolism.



ENDOCRINE SYSTEM

- **Parathyroid:** Parathyroid Hormone (PTH). It stimulates release of calcium from bones, back into blood.
- **Thymus:** Thymosin. It stimulates T-Cell Development
- **Adrenal Glands** (Above Kidneys; regulate HR, BP, and other functions):
 - Adrenal Cortex (stimulates fight or flight response):
 - 1) Cortisol/Glucocorticoids: Stress response; Increase blood glucose, Decrease immune response; metabolism
 - 2) Aldosterone: Regulates Na content in blood
 - Adrenal Medulla (stimulates fight or flight response):
 - 1) Epinephrine: Fight
 - 2) Norepinephrine: Flight
- **Ovaries:** Female gonads (2 hormones secreted)
 - 1) Estrogen: Stimulates egg maturation, controls 2ndary sex characteristics
 - 2) Progesterone: Prepares uterus to receive fertilized egg
- **Testes:** (male gonads): Testosterone - Regulates sperm production and 2ndary sex characteristics
- **Kidneys:** (2 hormones secreted):
 - 1) Erythropoietin: Response to cellular hypoxia
 - 2) Renin: Promotes production of Angiotensin
- **Liver:** Angiotensin II: Vasoconstriction, Increase BP
- **Pancreas:** (2 hormones):
 - 1) Glucagon (Alpha Cells): Increase blood glucose
 - 2) Insulin (Beta Cells): Decrease blood glucose
- **Stomach:** Gastrin: Response to food; stimulates production of gastric juices
- **Intestine:** (2 hormones)
 - 1) Secretin - Response to acidity in small intestine; stimulates secretion by liver and pancreas
 - 2) Cholecystokinin - Production of Bile Salts
- **Heart:** Atrial Natriuretic Peptide (ANP) - Increase renal Na excretion, decrease ECF



About Me

Hi there! My name is Ivy and I am the founder of Petite and Soignée. I am currently a licensed physical therapist assistant, dermatology and cosmetic medical assistant, and a nursing student in an accelerated BSN program. Over the years, I have researched and learned about different skincare products, ingredients, skin conditions, diseases, and new technologies and procedures within the field. I decided to join a dermatology practice so that I could learn more about skincare within a clinical setting. This position taught me so much about the science of skin that it led me to pursue nursing. My goal is to specialize in dermatology in the future.

You may be wondering what does *soignée* even mean?

Soignée (pronounced "swan-yay") is a feminine French word meaning "*to dress elegantly*", "*well-groomed*", "*sleek*" "*well maintained*" or "*elegantly designed*". The word perfectly describes the way that I like to present myself on a daily basis. On my website, I share all of my skincare and beauty tips for everyone to feel soignée.

Don't forget to follow my other social media accounts!



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