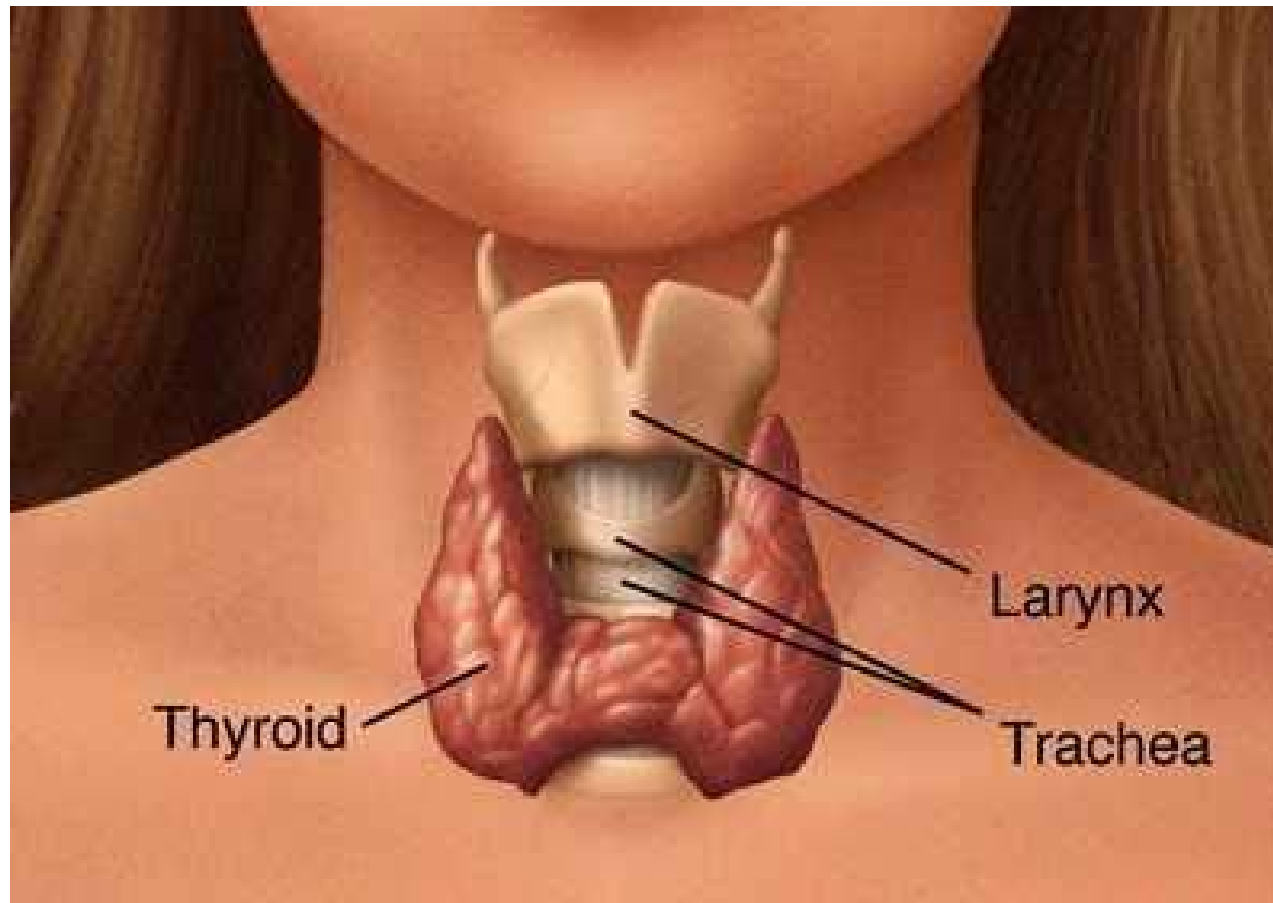


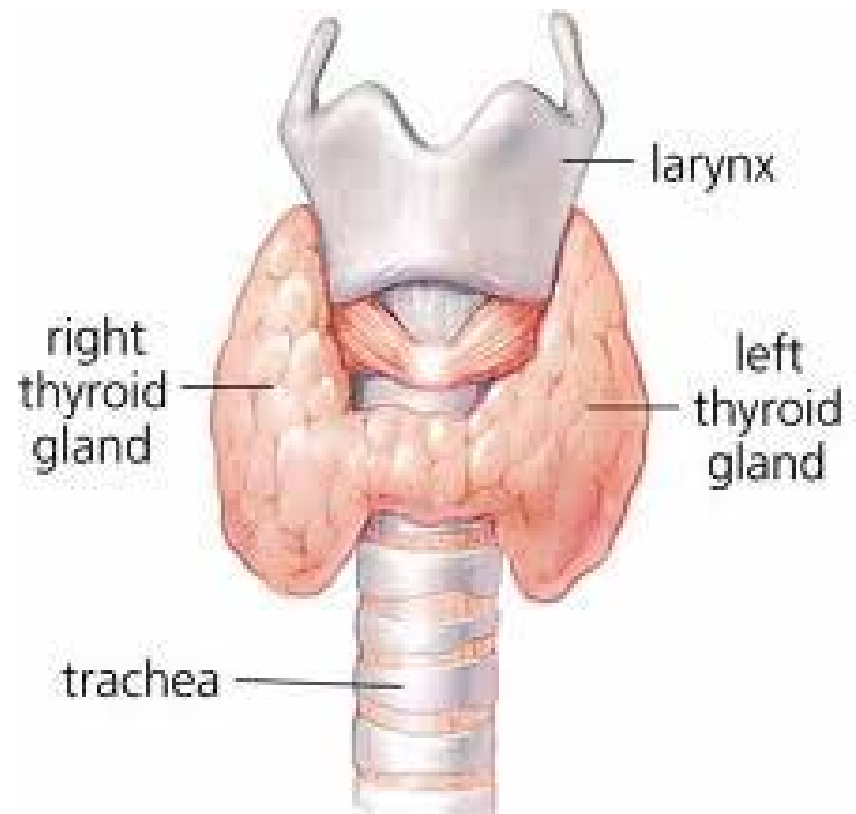
Hormones that affect Metabolism



Thyroid Gland

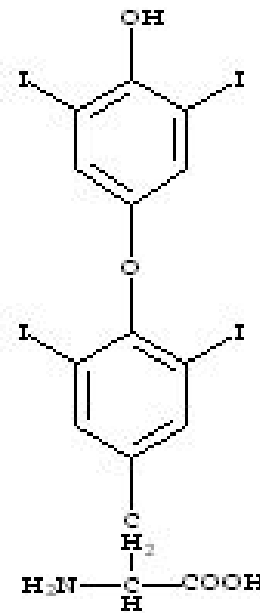
Thyroid Gland

- Produces :
 - Thyroxine (T4)
 - Triiodothyronine (T3)
 - Calcitonin

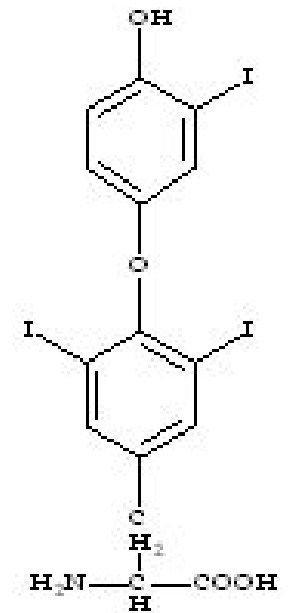


Thyroxine & Triiodothyronine

- Non-target hormones
- Needs iodine to be produced
- Stimulate glucose oxidation (*via cellular resp.*)
- Maintains BP, HR, muscle tone, digestion & reproductive functions.

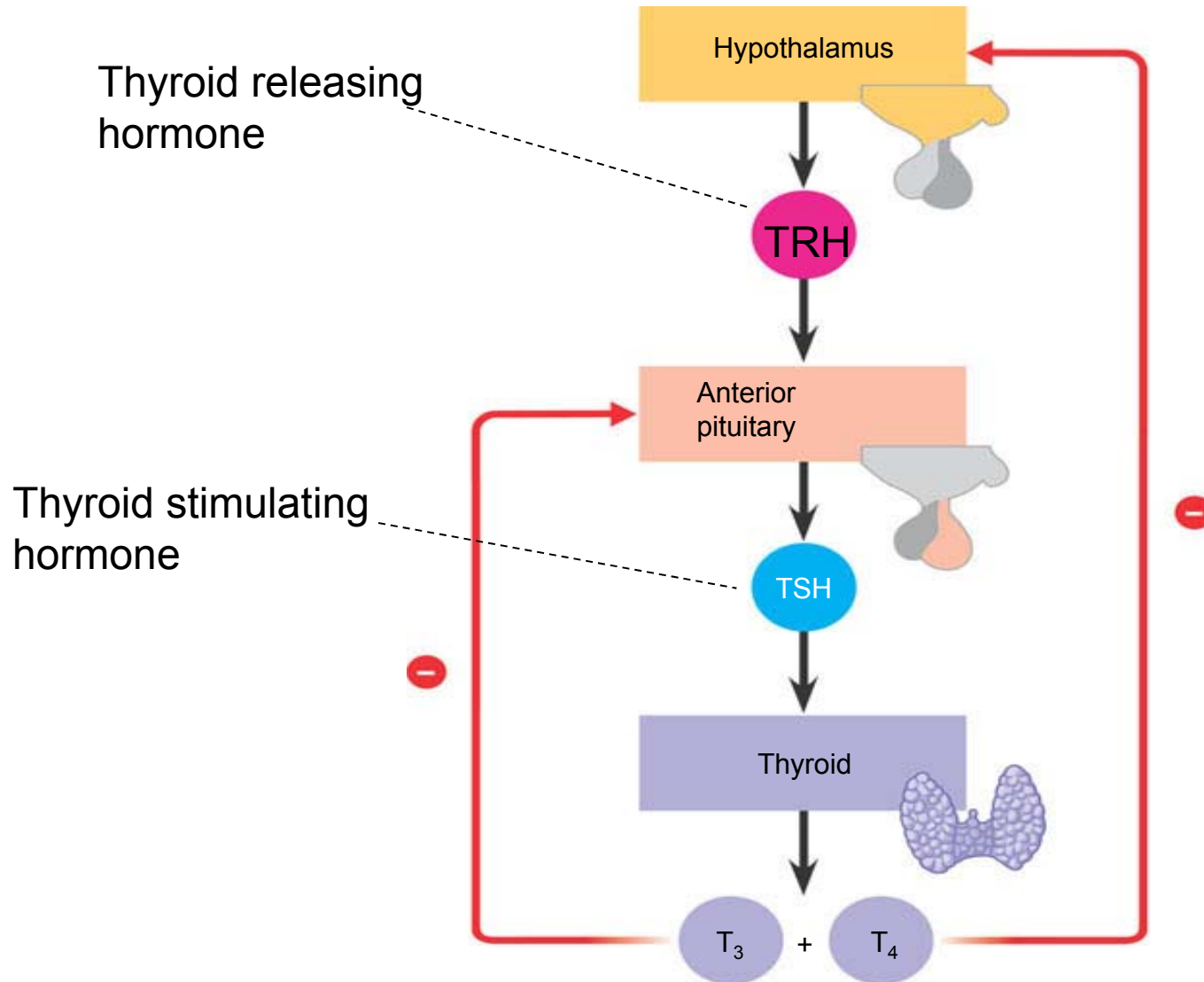


Thyroxine



Triiodothyronine

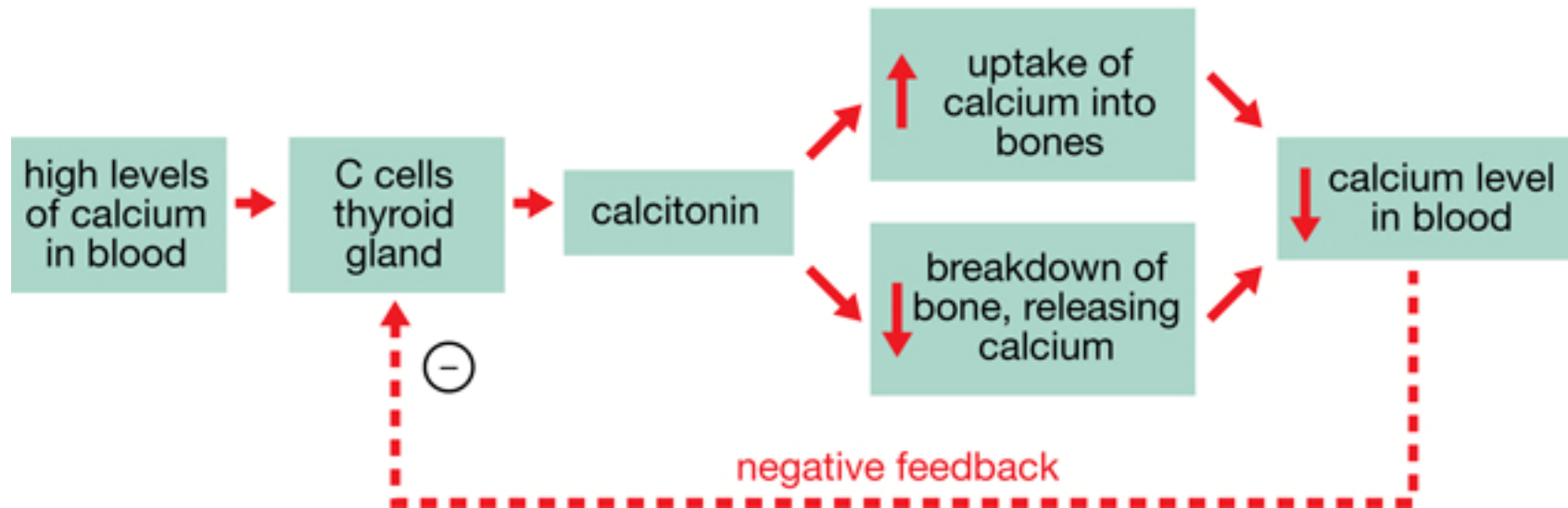
Feedback Loops



Calcitonin

- Lowers blood calcium levels.
 - Stimulates uptake of calcium into bone.
 - Prevents loss of calcium from bone to blood.

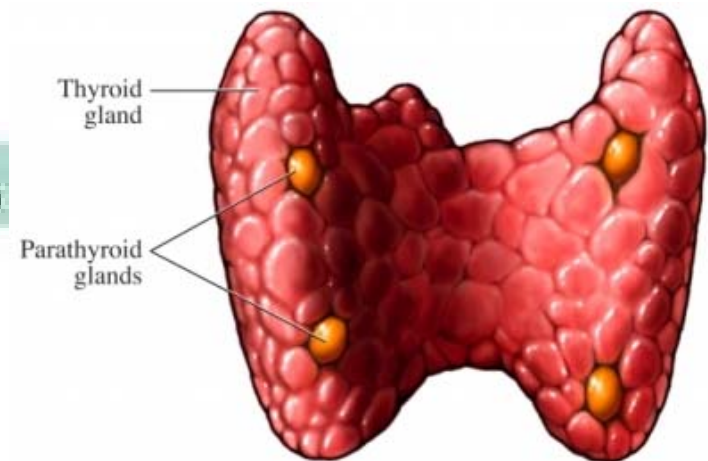
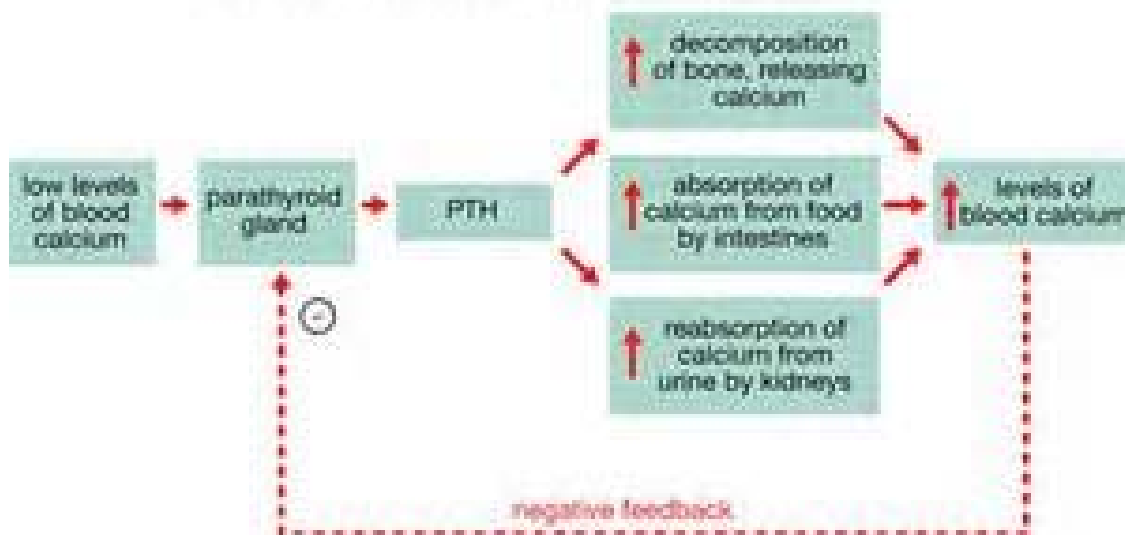
Feedback Loop



Parathyroid Gland

- Produces parathyroid hormone (PTH)
 - Raises blood calcium levels.
 - ↑ release of calcium from bones into blood.
 - ↑ reabsorption of calcium by kidneys.
 - ↑ absorption of calcium by intestines.

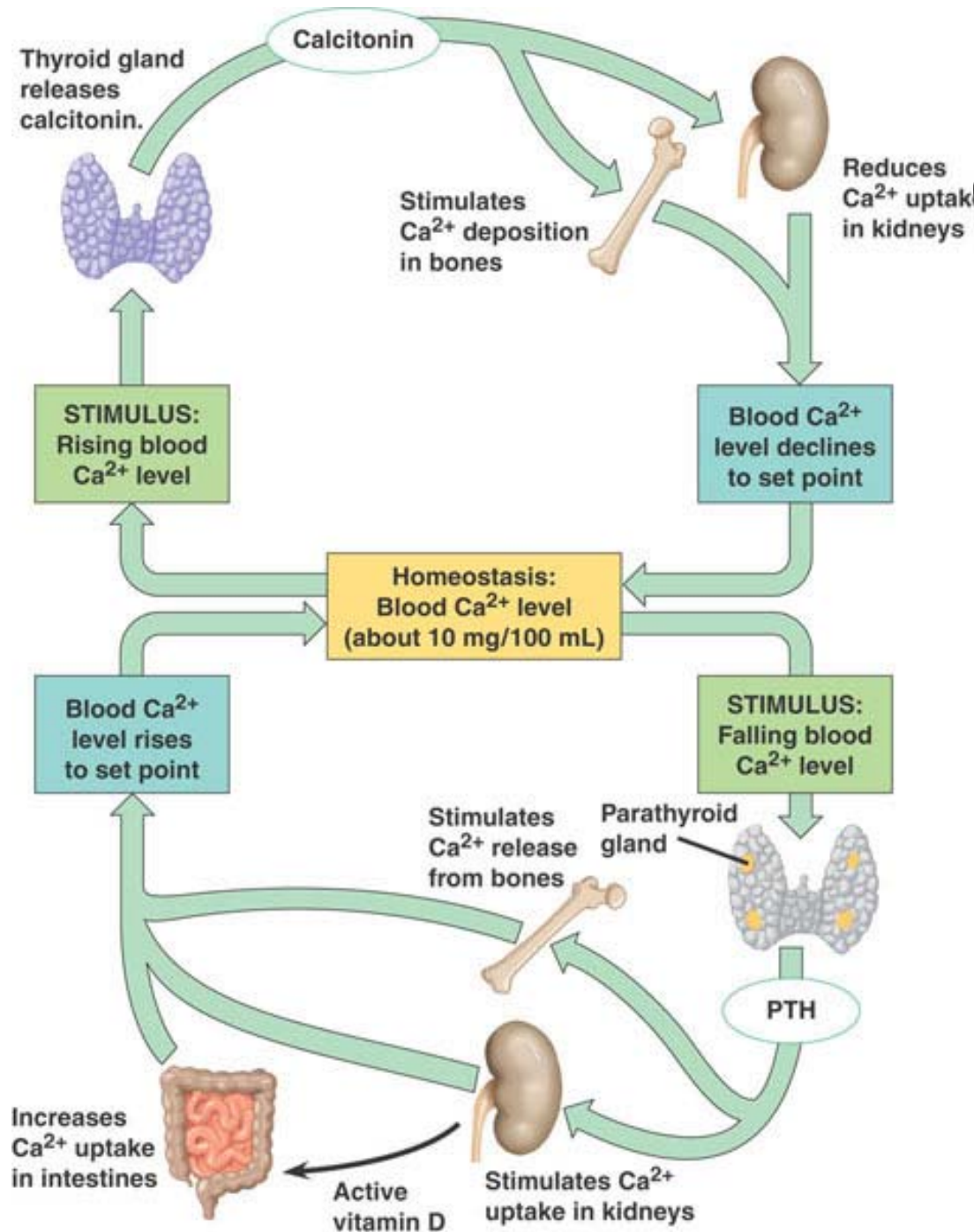
Regulation of Parathyroid Hormone (PTH) Levels



Regulating Calcium Levels

Calcitonin and PTH are antagonistic hormones

[Watch This!!!](#)



Problems with the Thyroid Gland

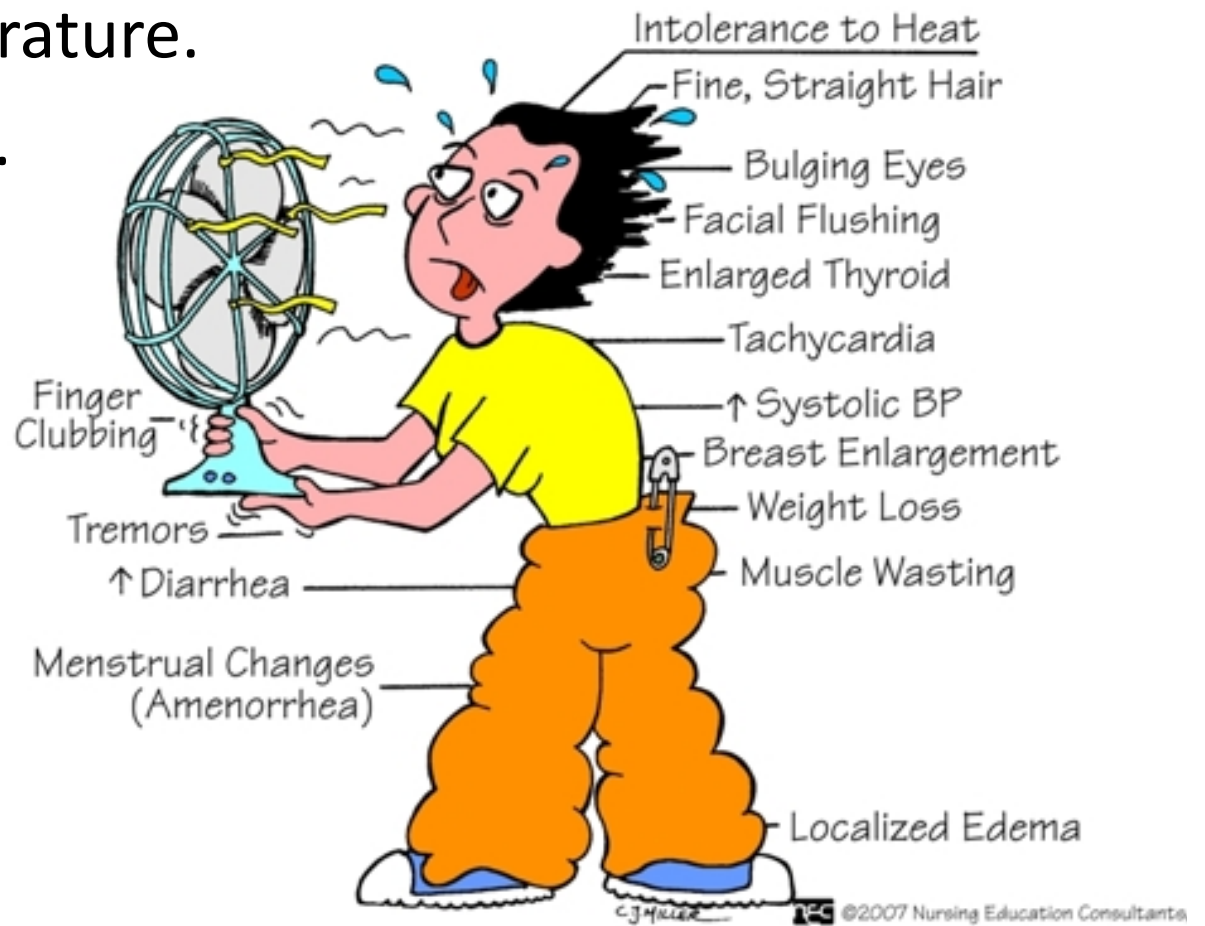
Goiter:

- With decreased iodine, production and secretion of T3 & T4 drops.
- Causes more TSH to be produced.
- Leads to increased thyroid stimulation, causing thyroid to enlarge.



Problems with the Thyroid Gland

- **Hyperthyroidism:**
 - Weight loss.
 - High body temperature.
 - Profuse sweating.



Problems with the Thyroid Gland

- **Hypothyroidism:**
 - Weight gain.
 - Lethargic.
 - Intolerance to cold

[Watch This!!!](#)

