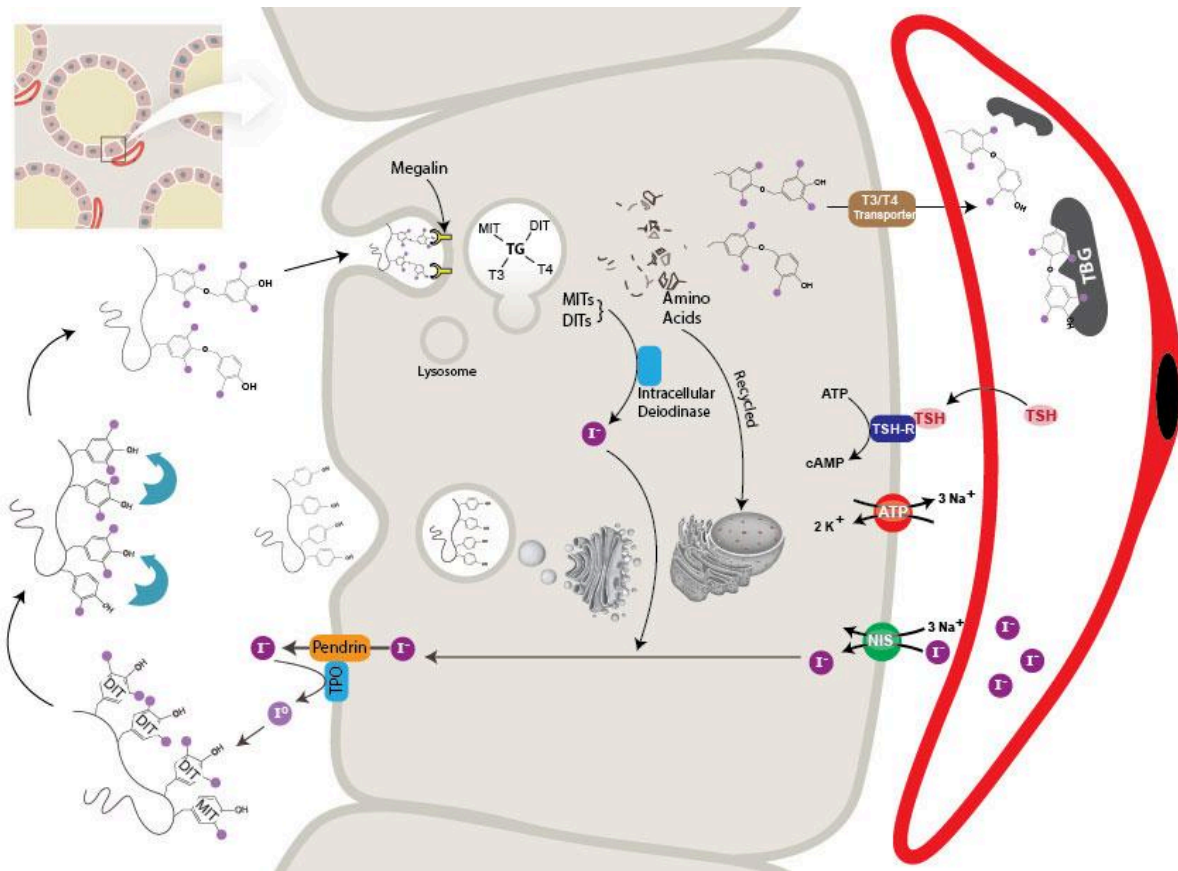


THYROID AND ADRENAL GLANDS

Ever notice how some people can eat all they want and never gain weight while others eat a peanut and gain a pound. This all has to do with our metabolism and how our bodies burn the calories we eat. The thyroid gland has the primary role of regulating our metabolism through the hormones it secretes. The person who eats and never gains is said to have a high metabolism. What this really means is that a larger portion of the calories that he is burning is used to produce heat, making him less efficient in handling nutrients. He will have an easier time maintaining a lower weight, but in times of famine he will need more food to survive (I suppose there is justice in this world!).

The thyroid gland is located in the neck. It is composed of two lobes on either side of the trachea just below the larynx. The two lobes are connected by a small band of tissue called the isthmus. Histologically, the thyroid is composed of millions of small, spherical follicles, think of tiny tennis balls. The walls of the follicles are composed of simple cuboidal epithelium, **follicular cells**, and the lumens serve as reservoirs for the materials used to produce thyroid hormones. These follicular cells are responsible for the production and secretion of the thyroid hormones. Scattered between the spaces of the follicles are the **parafollicular cells** which secrete the hormone **calcitonin**. Calcitonin acts to reduce blood Ca^{++} levels. Embedded on the posterior side of the gland are the four small **parathyroid glands**. These glands secrete **parathyroid hormone** whose function is to increase blood Ca^{++} concentrations (module 5).



Thyroid Hormone Synthesis.

Image done by BYU-Idaho Spring 2015

Thyroid Hormone Synthesis
Regulation of Thyroid Hormone Secretion
Thyroid Hormone Actions
Thyroid Disorders
Adrenal Gland



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