

Rest of Endocrine System

EQ: Which hormone would you be the most upset to lose, why?

- I. Thyroid Gland
 - a. The thyroid hormones control your metabolism
 - b. THYROID HORMONES
 - i. **Thyroxin (T4) & Tri-iodothyronine (T3)**
 1. both increase the rate at which cells release energy from carbohydrates
 - ii. **Calcitonin**
 1. regulates the blood concentration of calcium
 - iii. Basal Metabolic Rate (BMR): how many calories the body must consume to maintain life
 - c. Problems with the Thyroid
 - i. Thyroid hormone is partly made of iodine.
 - ii. Iodine is essential for the formation of thyroxin.
 - iii. If a person doesn't eat enough iodine, they can't make thyroid hormone.
 - iv. Hypothyroidism
 - v. Cretinism (hypothyroidism in infants)
 - vi. Hyperthyroidism (Grave's Disease)
- II. Parathyroid Glands
 - a. Located behind the thyroid
 - b. four tiny glands
 - c. Parathyroid Hormone (PTH)
 - i. takes calcium from the bones to make it available in the blood
- III. Adrenal Glands
 - a. Located at the top of the kidneys
 - b. Adrenal Cortex
 - i. outer area
 - ii. **Aldosterone**
 1. a mineralcorticoid
 2. helps kidneys conserve sodium and excrete potassium
 3. maintaining blood pressure
 - iii. **Cortisol**
 1. Glucocorticoid
 2. keeps blood glucose levels stable
 - iv. **Adrenal Sex Hormones**
 1. androgens (male) and estrogens (female)
 - c. Adrenal Medulla
 - i. inner area.
 - ii. **Epinephrine & Norepinephrine**
 1. increased heart rate, breathing rate, elevated blood pressure (fight or flight, response to stress)
 - d. Adrenal Gland Disorders
 - i. Cushing's syndrome
 1. hypersecretion of cortisol
 - ii. Addison's disease
 1. Hyposecretion of all adrenal cortex hormones
 2. Low blood pressure results
 3. Increased pigmentation

- IV. Pineal Glands
 - a. located between the cerebral hemispheres
 - b. secretes **melatonin**
 - c. important for maintaining Circadian rhythms
- V. Thymus Gland
 - a. large in young children, gradually shrinks with age
 - b. secretes thymosins
 - c. important to immune function
- VI. Reproductive Glands
 - a. testes and ovaries
 - b. testosterone, progesterone, estrogen
- VII. Steroids
 - a. **Anabolic steroids**
 - i. artificially produced hormones
 - ii. same as, or similar to, **androgens**
 - 1. the male-type sex hormones in the body
 - 2. The most powerful is **testosterone**.
 - iii. more than 100 variations of anabolic steroids