



Endocrine System

- **HORMONAL IMBALANCE** (secretion of excess or less amount of hormones) is the cause of a lot of endocrine gland diseases.
- Although the **endocrine glands have a feedback mechanism** to counteract the hormone imbalance, sometimes it fails and leads to some disorders or diseases.

1. Dwarfism

- The **pituitary gland** produces the hormone responsible for **growth**.
- When the gland produces an insufficient amount of growth hormone, it **retards the height** of an individual leading to **dwarfism**

2. Cretinism

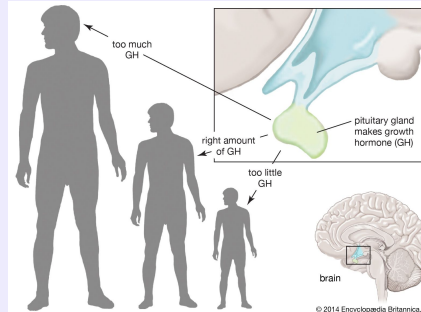
- It is caused due to **deficiency of thyroid hormones**.
- It occurs in infants or kids.
- It leads to mental and physical growth impairment.

Causes of Imbalance

- A problem with the endocrine feedback system
- Failure of gland stimulation
- Genetic disorder
- Infection
- Injury to the endocrine gland or tumor formation

Abnormal Growth

SOURCE



3. Acromegaly

- This is the opposite of dwarfism.
- It happens when too much hormone is produced which **increases the bone size**.
- In childhood, it leads to increased height and is called **Gigantism**



4. Addison's Disease

- Occurs when the adrenal gland releases too little of the hormone **cortisol** and sometimes, **aldosterone**.
- Symptoms include fatigue, stomach upset, dehydration, and skin changes.

5. PRECOCIOUS PUBERTY

- Abnormally early puberty because the glands release **sex hormones** too early

6. POLYCYSTIC OVARY SYNDROME

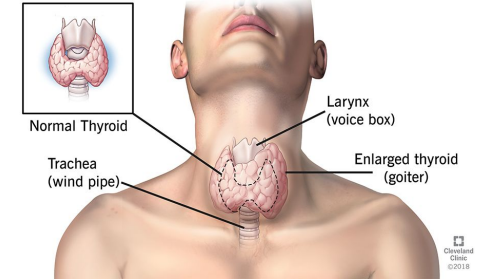
- Commonly known as **PCOS** is a leading cause of infertility in women.
- Overproduction of **androgens** interferes with the development of eggs and their release from the ovaries.

7. Grave's Disease

- Autoimmune disorder** commonly found in kids.
- In this condition, the **thyroid gland** becomes **overactive** and secretes too much thyroid hormone

Thyroid Swelling

SOURCE



8. Goitre

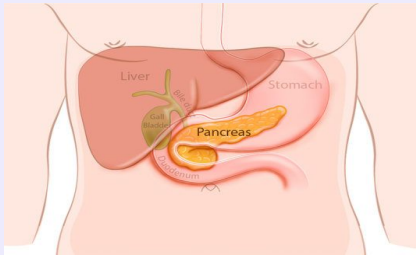
- Generally observed as a swelling in the neck
- Due to an **enlarged thyroid gland**
- This gland produces thyroid hormones
- When thyroid hormone is **too high or low** in the blood, people show symptoms such as weight loss, nervousness, excess sweating, etc.
- This is due to **iodine deficiency**.



9. Diabetes Mellitus

3D/16

- Commonly known as **diabetes**.
- The pancreas produces two hormones to balance blood glucose levels: **glucagon and insulin**.
- This disease occurs when the glucose levels are high due to **insufficient production of insulin**.
- Symptoms include excessive thirst, weight loss, frequent urination.
- Due to lack of insulin people with diabetes inject it physically into their blood



HYPOSECRETION

- This is when not enough hormone is being secreted and occurs in **type 1 diabetes**.
- The body's own immune system attacks and destroys cells of the pancreas that secrete insulin.

HORMONE RESISTANCE

- In some cases, there is a normal amount of hormone, but the cells that are targeted resist the hormone.
- **Type 2 diabetes** is a great example.

Diabetes Type 1 and 2

- **Type 1 Diabetes** - not enough insulin is produced, and patients must monitor the level of glucose in the blood. If it is too high, insulin is inserted to bring it under control. If it is too low, sugar must be consumed to increase it.
- **Type 2 Diabetes** - body cells do not respond to normal levels of insulin. Thus, cells don't absorb glucose, and glucose in the blood becomes too high.