

المحاضرة 15 / تشريح وفسلجه /
مرحلة ثانيه / قسم هندسة الاجهزة الطبية

الغدد الصماء

الاستاذ الدكتور خيرى عبدالله

Endocrine Glands :

These glands secrete hormones directly into the blood .

Types :

**Pituitary gland , Thyroid gland , Parathyroid , Adrenal gland ,
Pineal gland , Hypothalamus , Pancreas , Ovaries , Testes .**

Functions of Endocrine glands :

- 1 – Produce hormones .**
- 2 – These hormones control growth and development .**
- 3 – Control reproduction .**
- 4 – Control our organs work , metabolism , mood .**

Pituitary gland :

Pituitary gland attached to the base of brain in (sella turcica) of sphenoid bone , pea size it has two lobes posterior secret two hormones while anterior secret six hormones , four of six regulate the functions of other glands .

Hormones of anterior lobe

1 – growth hormone 30 – 50 %

2 – Adrenocorticotropin 20 %

3 – Thyroid stimulating hormone 3-5 %

4 – Lutenizing hormone 3 – 5 % work on ovary

5 – Follicle stimulating hormone 3 – 5 % work on ovary

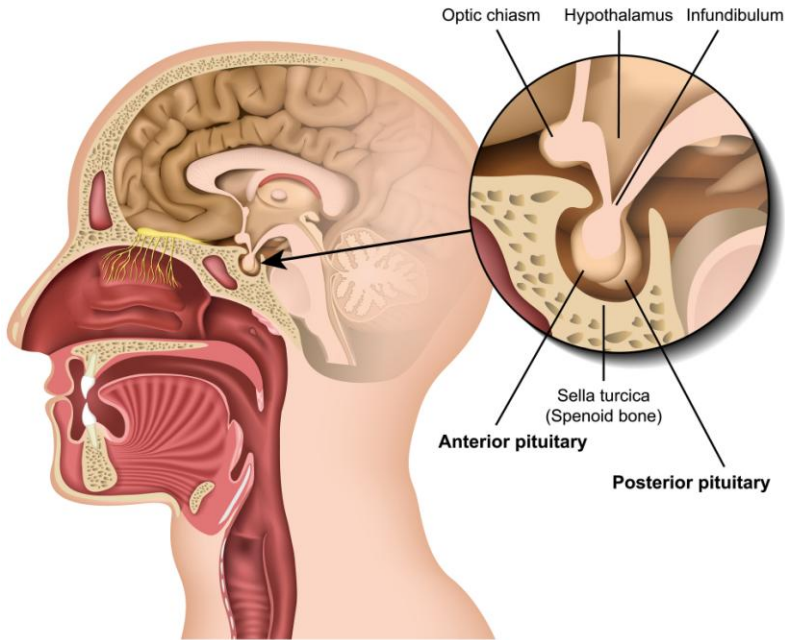
6 – Prolactin 3 – 5 % stimulate milk production

Hormones of posterior lobe

1 – Vasopressin (regulate urination) 2 - Oxytocin (Love hormone)

3 – Adrenocorticotropin 4 – Melanocyte stimulating hormone

Hypersecretion of growth hormone causes gigantism in children and acromegally in adult . hyposecretion in children cause dwarfism .



Thyroid gland :

Butterfly shaped organ located at the base of neck .

It release a hormones control on metabolism (energy) , regulate body function including breathing , heart beats ?

Thyroid two lobes are connected by bridge called thyroid isthmus .

Microscopically , thyroid gland have functional units **called thyroid follicles** .

Thyroid gland secrete three hormones :

1 – Thyroxin (T4) 2 – Tri-iodothyronin (T3) 3 – Calcitonin

Enlargment of thyroid gland (**Goiter**) occur due to hypothyroidism (decrease thyroxin production due to iodine deficiency) and hyperthyroidism (increase thyroxin production)

Auto – immune disease occur when thyroxin become as antigen (Thyrotoxicosis) , antibodies will produced .

Parathyroid gland :

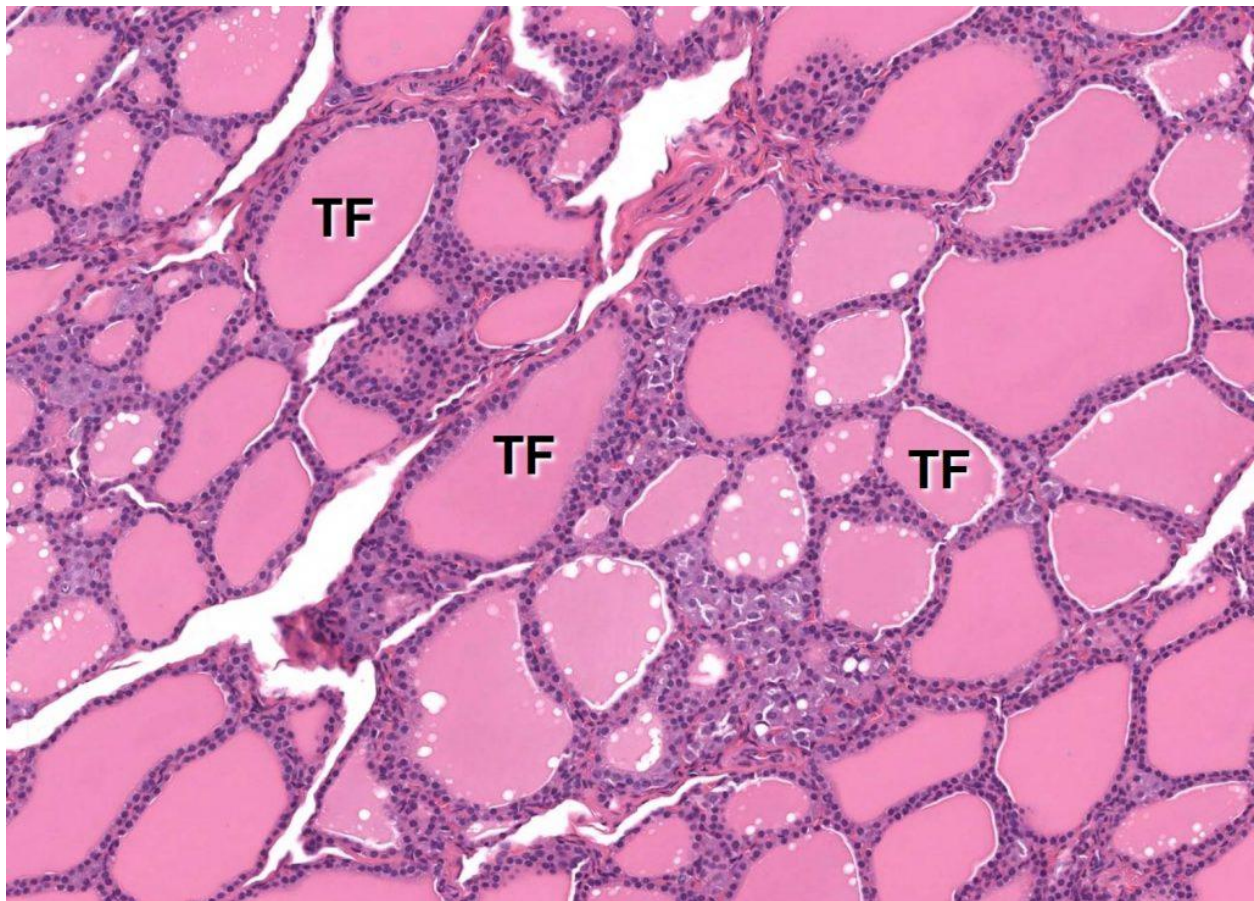
Small pea shaped (Cluster of cells) behind thyroid gland , produce hormone calcitonin reglulate level of Calcium in the blood .

Adrenal Gland : small triangular shaped gland located at the top of kidney .

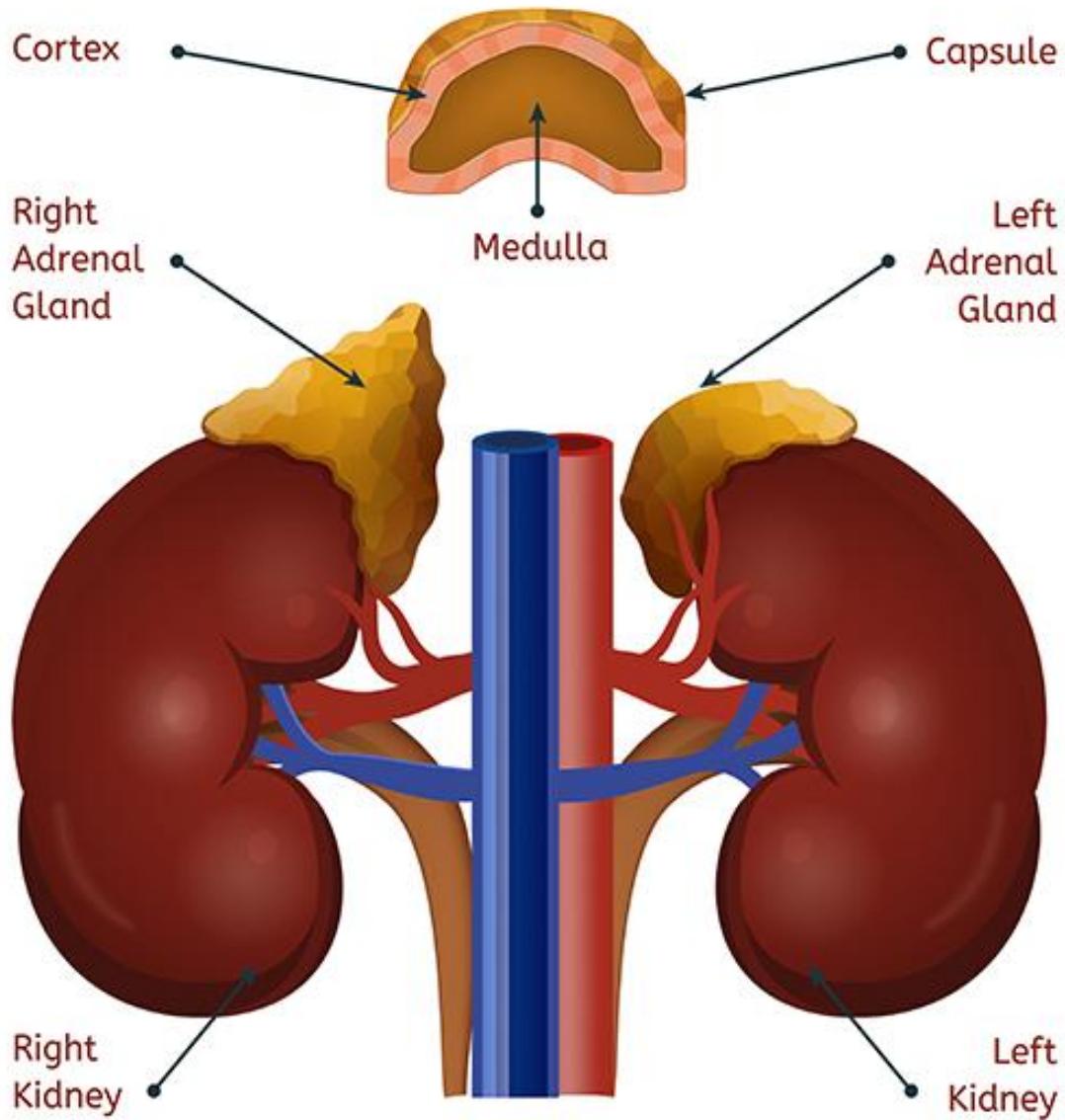
Adrenal gland produce several hormones that regulate metabolism , immune system , blood pressure .

Cortex of adrenal gland have three layers / outer layer produce aldosterone hormones , middle layer produce cortisol hormones , inner layer produce steroid hormones .

Hormones of adrenal medulla : Adrenalin (Epinephrine) and Noradrenalin (Norepinephrine) .



KIDNEYS & ADRENAL GLANDS



Diagnosis or tests used mostly tumors of thyroid , parathyroid and adrenal gland .

1 – Ultrasound (sonar) , 2 – CT scan (Computerized Tomography)

3 – MRI Magnetic resonance image

4 – Radioactive iodine scan (RAI) for thyroid .

5 - Venous sampling (for hormones and iodine) .