

ENDOCRINE GLANDS

ADRENAL

PANCREATIC ISLETS

THYROID

PARATHYROID

PITUITARY

ENDOCRINE GLANDS

= "ductless" glands - release hormones into blood stream

- highly vascularized:

- fenestrated or sinusoidal capillaries

- clumps or "cords" of secretory cells surround capillaries

→ GLAND: collection of secretory cells inside capsule

- many organs also release hormones

- gut (enteroendocrine cells - peptide hormones)

- heart (myocytes - natriuretic factors)

- kidneys (juxtaglomerular apparatus - renin)

ADRENAL GLANDS: secretory products by region

cortex: steroid hormones

zona glomerulosa: mineralocorticoids (ie aldosterone)
alter K^+ , Na^+ , water balance

zona fasciculata: glucocorticoids (ie cortisol)
CHO balance (gluconeogenesis \uparrow)

zona reticularis: androgens (ie testosterone precursor)

medulla: catecholamines

chromaffin cells: epinephrine, norepinephrine
adrenergic responses throughout body

PANCREAS: MIXED EXOCRINE AND ENDOCRINE

-acinar glands: exocrine

- pancreatic juice - digestive enzymes
via pancreatic duct → duodenum

-pancreatic islets (islets of Langerhans): endocrine

-hormones

insulin - β cells

glucagon - α cells

peptide hormones

THYROID GLAND SECRETIONS

FOLLICULAR CELLS secrete thyroxine (T4), tri-iodothyronine (T3)
-growth, cell differentiation, metabolism

exocrine phase:

- secrete thyroglobulin into follicles
- iodine actively transported from blood into follicles
- thyroglobulin iodinated in follicles → stored

endocrine phase:

- iodinated thyroglobulin → follicular cells
- enzymatic breakdown → T3, T4 released into capillaries

PARAFOLLICULAR CELLS secrete calcitonin - bone resorption