

## ***DEVELOPMENT OF THE SUPRARENAL GLAND***

\* ***The suprarenal cortex:*** is **mesodermal** in origin.

- During the 5<sup>th</sup> week , **mesothelial cells** of the coelomic epithelium on either side of the mesentery of the gut proliferate to form the ***fetal cortex***.
- A second layer of cells develop from the coelomic mesothelium and surround the fetal cortex to form the ***permanent cortex***.

\* ***The suprarenal medulla:*** is **ectodermal** in origin.

- Chromaffin cells derived from the **neural crest** migrate to enter the medial aspect of the fetal cortex and form the ***suprarenal medulla***.

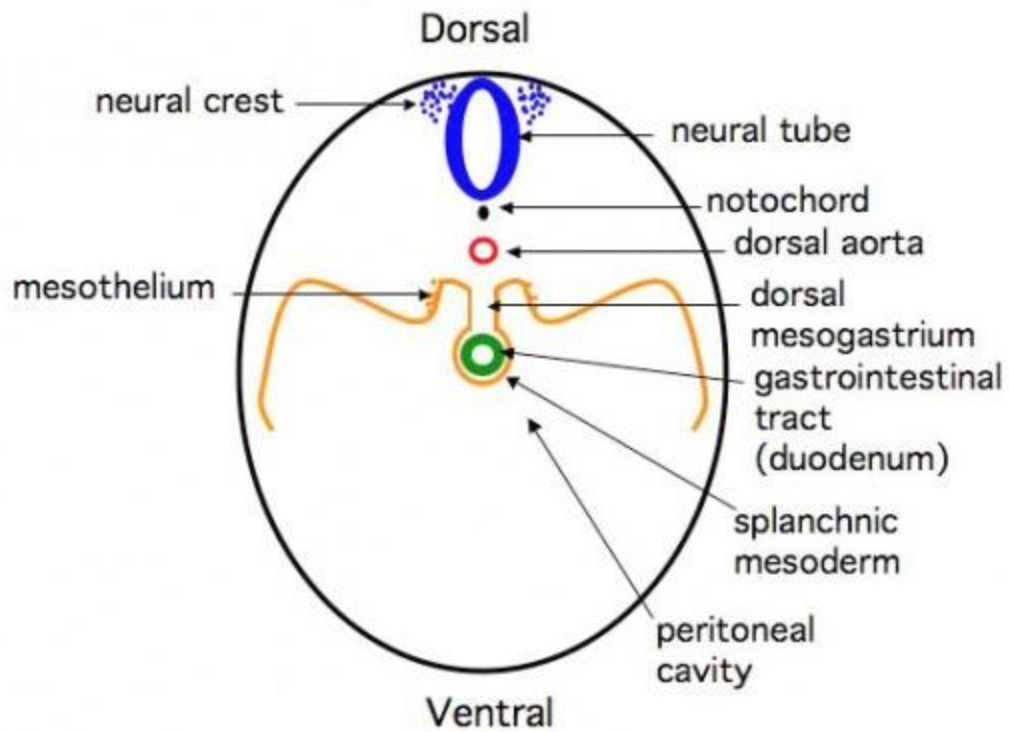
\* ***FATE:***

- The **fetal cortex** regresses rapidly except its outer layer which differentiated into ***zona reticularis***.
- The **permanent cortex** differentiates into: ***zona glomerulosa and zona fasciculate***.
- Zona glomerulosa and zona fasciculate are present at birth while zona reticularis not recognizable until the end of third year.

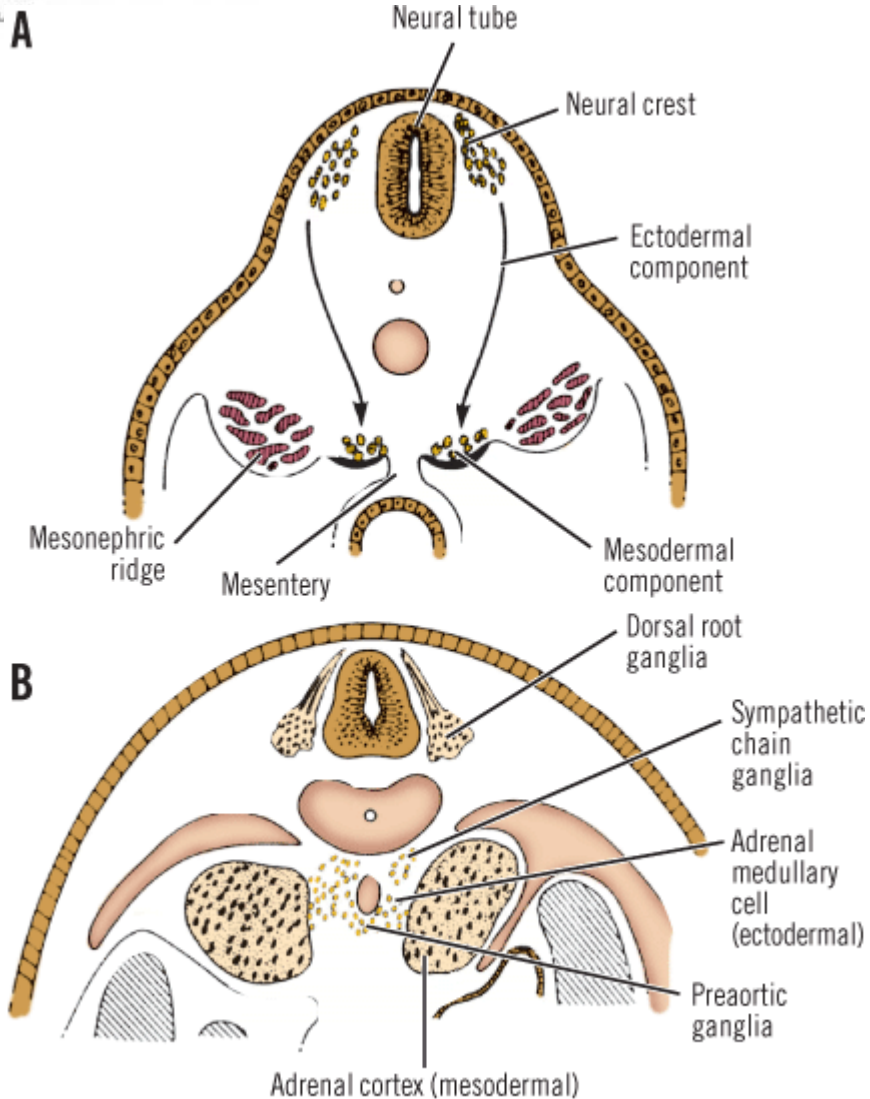
\* ***CONGENITAL ADRENAL HYPERPLASIA:***

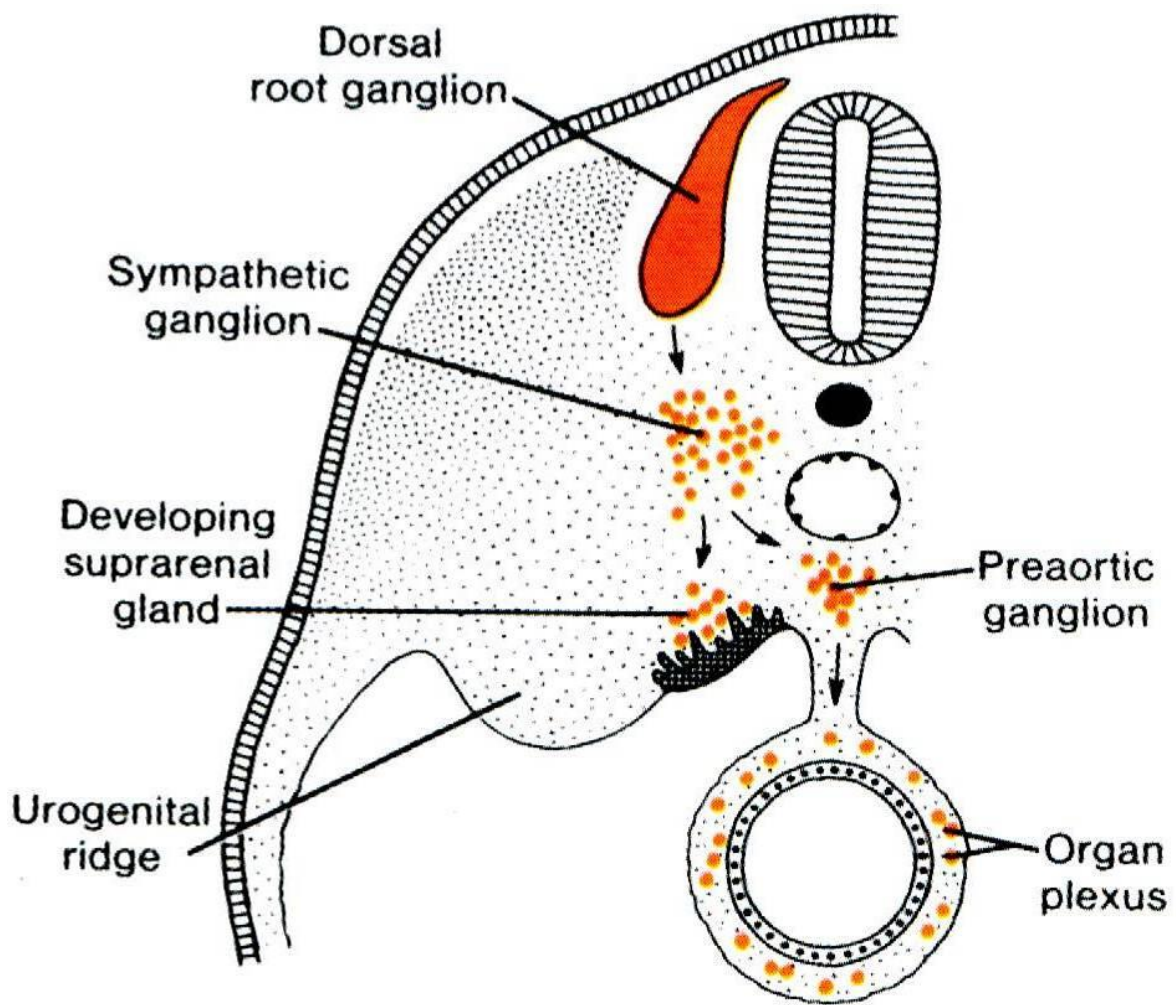
- It is a genetic disorder associated with excess ACTH secretion by the pituitary leading to hypertrophy of suprarenal cortex and over production of androgens.
- It results in pseudohermaphroditism in the female.

# Adrenal Gland Development



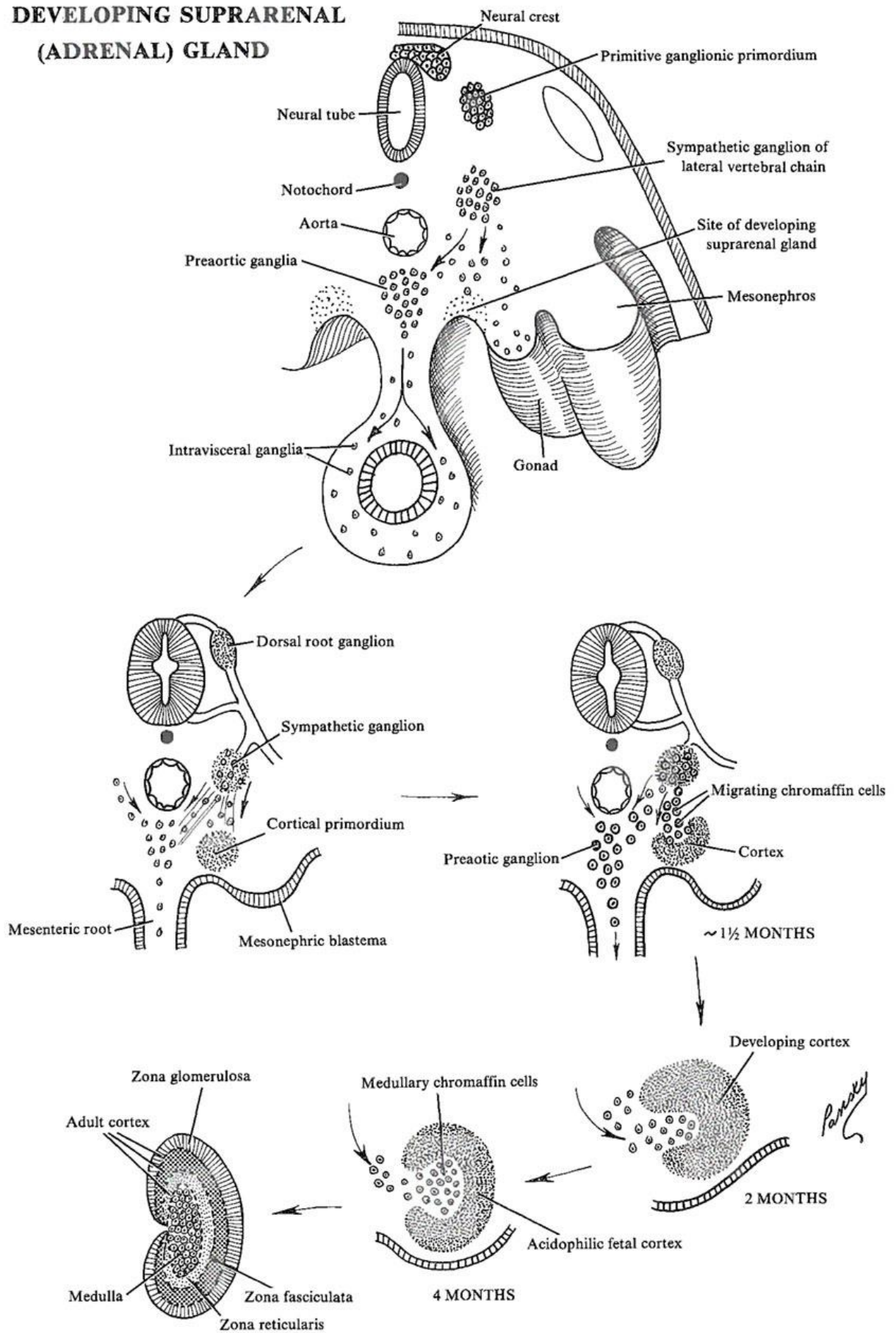
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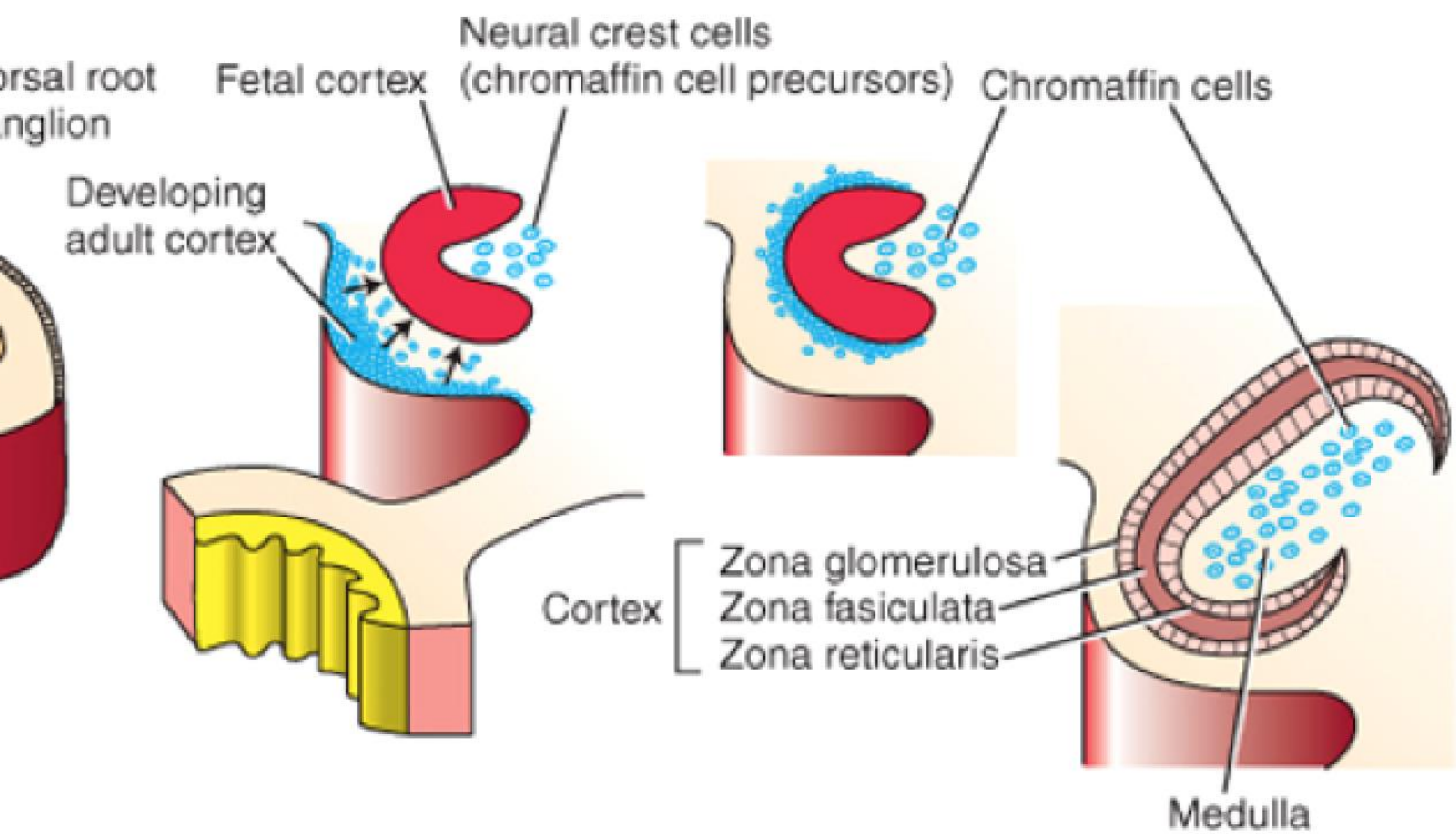




*Development of suprarenal gland*

# DEVELOPING SUPRARENAL (ADRENAL) GLAND





### Embryology

Medulla =  
neural crest

Cortex =  
mesoderm

### Anatomy

Zona **G**lomerulosa

Zona **F**asciculata

Zona **R**eticularis

**M**edulla

**M**nemonic:

**G**ood  
**F**or  
**R**eason  
**M**other

### Physiology

Zona Glomerulosa =  
aldosterone (mineralocorticoid)

Zona Fasciculata and Reticularis =  
cortisol (glucocorticoids), androgens

Medulla = catecholamines (epinephrine,  
norepinephrine, dopamine)

### Pathology

Pheochromocytoma and related tumors

Syndromes of corticosteroid excess

Neuroblastomas

Feminizing and masculinizing syndromes

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***Congenital adrenal hyperplasia***