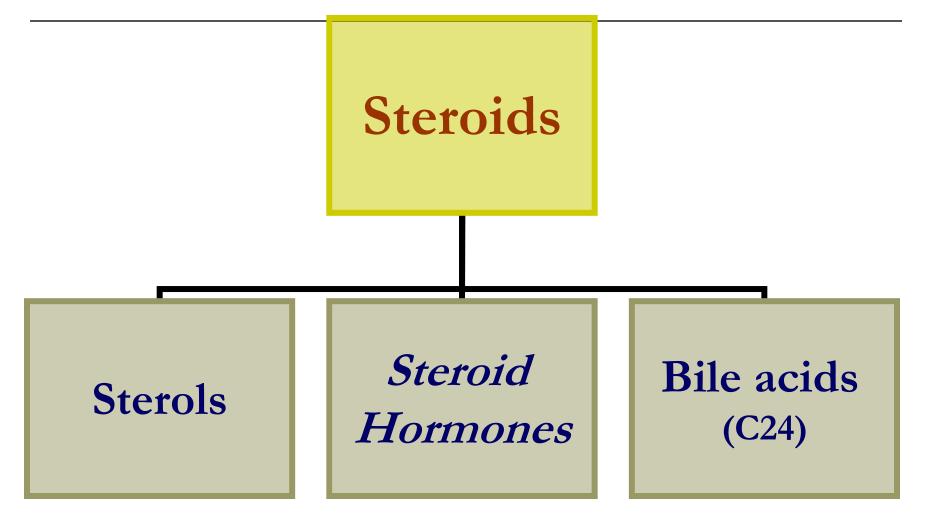
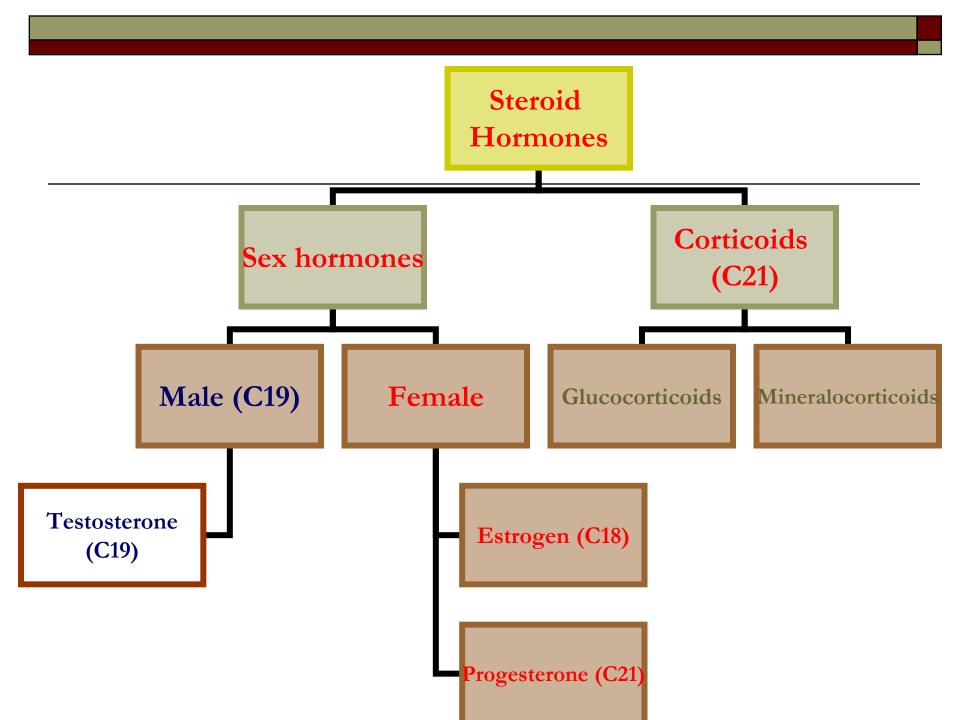
## Steroid Hormones

## **Steroid Hormones**

- Steroid hormones move through the bloodstream (on protein carriers) from their site of production to target tissues, where they enter cells.
- Bind to highly specific receptor proteins in the nucleus, and trigger changes in gene expression and metabolism.

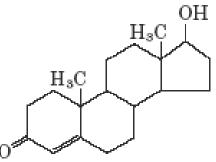
## **Classification of Steroids**





## Male Sex Hormones (Androgens)

- TESTOSTERONE is the main hormone secreted by testis.
- Testosterone acts as prohormone.
- Converted in target cells to active dihydrotestosterone (DHT)
  - by reduction of ring A.



Testosterone

С

В

D

~c\_\_c\_c\_c\_c\_

#### Other androgens:

- Androstenedione
- Androsterone
- Epiandrosterone
- Dehydroepiandrosterone (DHEA)

Some androgens are formed by the ovaries and adrenal cortex

# HO HO

17β—Estradiol

## Female Sex Hormones

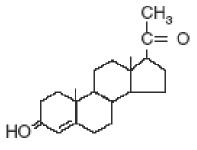
Estrogens:

Estrane group (C18)

- Main hormone secreted by ovaries
  ESTRADIOL
- Also formed by placenta during pregnancy
  - Small amounts are formed in the testis and adrenal cortex

#### Female Sex Hormones (cont.,)

Progesterone:

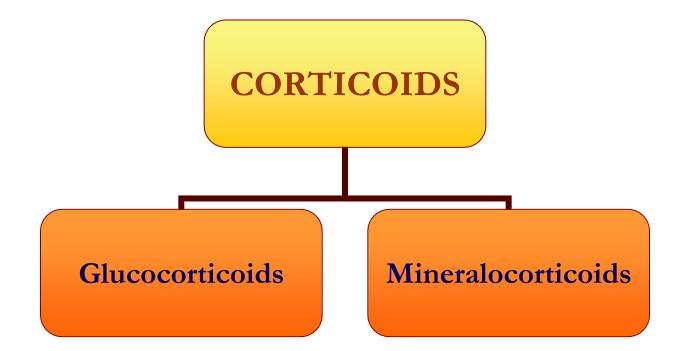


Progesterone

- PROGESTRONE
  - Secreted in females mainly by the ovaries
  - (after ovulation and formation of corpus luteum)
  - Secreted by <u>placenta</u> (during pregnancy)

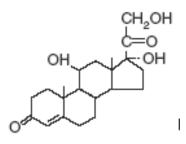
### Adrenal Cortical Hormones (Corticoids)

 Formed and secreted by adrenal cortex (suprarenal cortex)



#### Glucocorticoids

- Named glucocorticoids because they increase blood glucose level
- Derivatives of corticosterone and include:
  - Corticosterone
  - Cortisol (very important)
  - Cortisone

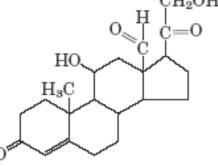


Cortisol

#### Mineralocorticoids

Terms due to their action on minerals

- Aldosterone:
  - It is the main mineralocorticoids secreted by the adrenal cortex.
  - Mainly acts in kidneys
    - Promotes secretion of K<sup>+</sup> and H<sup>+</sup> and reabsorption of Na<sup>+</sup>



Aldosterone