

## Cholesterol

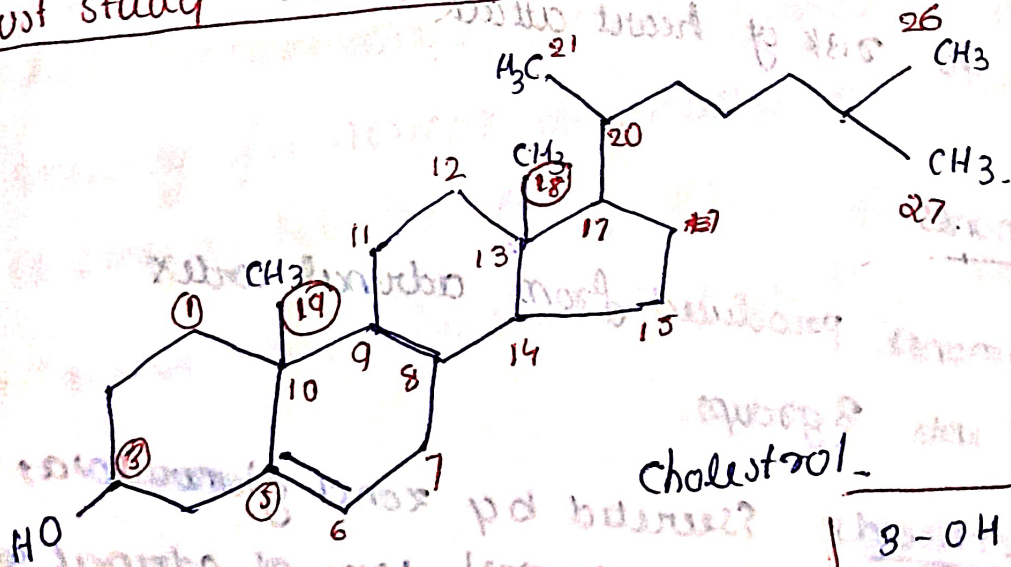
- cholesterol is the most imp't animal steroid which is the precursor of all other steroid in the body.

- 27 carbon compound contain.

9mp't Cyclopentanoperhydrophenanthrene ring.

- absent in plants.

must study name & structure



3-OH

5-6 = D.B.

CH<sub>3</sub> → 18, 19.

## Functions.

- Component of cell membrane.
- Biologically important substances formed from cholesterol - steroids, vitamin D<sub>3</sub>, Bile acids and Bile salts.
- Nerve conduction.

## Clinical Significance.

- Normal level of total cholesterol level in blood = 150 - 200 mg/dl.  
1 mark  
unit is mpt.

- elevated level in blood lead to atherosclerosis increased the risk of heart attack.

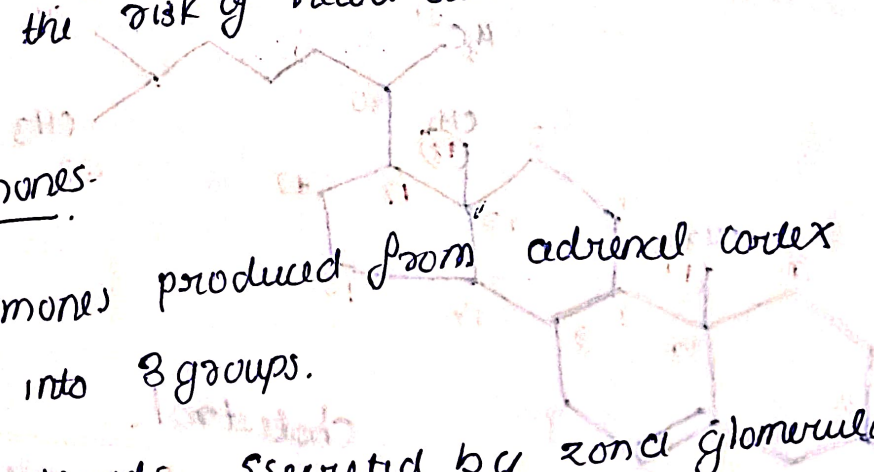
## Steroid hormones.

- steroid hormones produced from adrenal cortex are divided into 3 groups.

1. mineralocorticoids (secreted by zona glomerulosa, the outermost layer of adrenal cortex)

- aldosterone.

- 11-deoxycorticosterone.



## Function

- aldosterone increases sodium reabsorption from renal tubules, leading to sodium retention & water retention.

2. Glucocorticoids { secreted by zona fasciculata, middle zone of adrenal cortex }

- cortisol
- corticosterone.
- cortisone.

M.C.  
11/10/24

## function.

- Anti insulin effect.
- regulation of metabolism - carbohydrates, fat, proteins.
- Anti inflammatory action, immunosuppression
- necessary for normal distribution of water and electrolytes between ECF & ICF.
- decrease bone formation, leads to osteoporosis.

3. Sex Steroids. { from zona reticularis, the innermost layer of adrenal cortex }

- androgens - dehydroepiandrosterone and androstenedione.

actions of Androgens - sex differentiation & descent of testis in fetus.

- dehydroepiandrosterone and androstenedione are then converted to testosterone, major male hormone in humans.

### Testosterone

- Help in the development of secondary sex characters at puberty.
- Growth & maintenance of sex organs in adults.

Estrogen {estradiol is most imp't estrogen}  
and progesterone in small amounts.

- maintain female secondary sex characters.
- regulate reproductive cycle oogenesis.
- maintenance of pregnancy, lactation.