

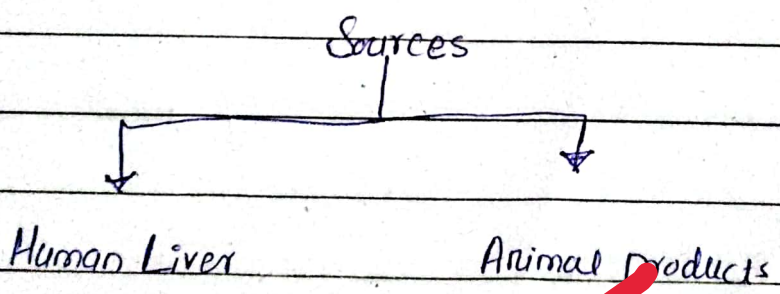
① Discuss Cholesterol and vitamins.

Cholesterol

① Introduction:

Cholestrals are waxy substances that are found in human body and perform different functions like hormone synthesis and vitamin D manufacturing. However, excess of cholesterol in the body may have serious health repercussions.

② Sources of Cholesterol:



There are mainly two sources of cholesterol. In human body they are produce by the liver. Also, they are present in animals products like meat, and milk, etc.

③ Types of Cholestrals:

Cholestrals are mainly of two types: 'Good' and 'Bad'. Their excess in the body or having not enough amount in the body may have serious side effect. It should be noted that ~~both~~ cholestrals do not dissolve in blood so for their transport, carriers are used which are called lipoproteins made up of lipids and proteins. The lipoproteins involved in the transport of cholestrals in the ~~the~~ blood-stream are ~~Low~~ Low-density lipoproteins (LDL) and ~~High~~ High-density lipoproteins (HDL). The types of cholestrals are based on the lipoprotein associated with cholestrals, i.e.

LDL cholestrals and HDL cholestrals.

2.1 LDL Cholestrals:

They are also called 'bad' cholestrals.

These cholestrals are responsible for the plaque in the arteries.

of the body. Plaque is a thick, hard deposition on the walls of the arteries that is made up of LDL cholesterol. This plaque on the walls causes the arteries to be narrowed. Hence restrict the flow of blood and sometimes leads to the formation of clots in the arteries.

3.1 Health Risks

If the clot is in the artery that feeds the brain then there is a risk of a Stroke; and if it is in the coronary artery, then a heart attack (Myocardia Infarction) may happen.

3.2 HDL Cholesterol:

HDL cholesterol are the good cholesterol. They bring the LDL cholesterol to the liver where it is broken down and pass from the body. Hence they help in the reduction of the excess LDL cholesterol from the body.

Vitamins

① Definition:

Vitamins are essential organic molecules that are required in a very small amount to the human body to perform its metabolic activities.

It should be noted that vitamins do not produce energy; rather, they only ensure energy supply to the body.

② Number of vitamins:

Vitamins are total 13 in numbers. 4 out of these 13 vitamins are fat-soluble while 9 are water soluble.

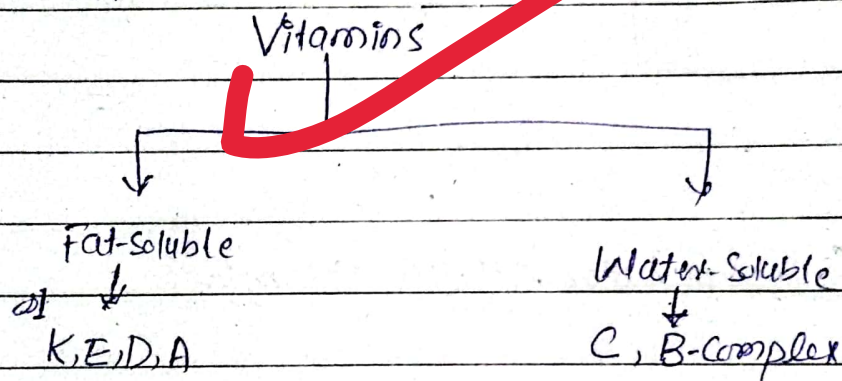
③ Storing Vitamins in the body:

Only the fat-soluble vitamins (K, E, D, A) are stored in the body. The water-soluble vitamins, on the other hand, cannot be

Stored in the body, and hence should be taken on daily basis from the food.

(4) Types of vitamins:

Vitamins can be divided into the two types based on the solubility: Fat-soluble vitamins and water-soluble vitamins.



4.1 Fat-Soluble Vitamins:

The vitamins are soluble in fats. When they enter into the body, usually with fatty food, bile from the liver breaks down the food and release the vitamins which are stored in the body fat if they are in excess. These vitamins are not needed to be taken on

daily basis.

Vitamin	Other Name	Deficiency effect
K	Menadiol	Haemorrhage
E	Tocopherol	sterility
D	D ₁ , D ₂	Rickets
A	Retinol	Night blindness.

4.2 Water-Soluble Vitamins:

Water soluble vitamins are 9 in numbers. They cannot be stored in the body; therefore, should be taken in diet on daily basis.

→ Vitamin C

Water Soluble Vitamins

- Vitamin B₁
- Vitamin B₂
- Vitamin B₃
- Vitamin B₅
- Vitamin B₆
- B-Complex
 - Vitamin B₇
 - Vitamin B₉
 - Vitamin B₁₂