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MATRIC NO.: 18/MHS01/343

DEPARTMENT: ANATOMY

COURSE: BCH 204

**ASSIGNMENT:**

1a. What are coenzymes

b. Differentiate between fat and water soluble vitamins

c. Describe niacin in relation to its coenzymic function

**ANSWERS:**

1. **Coenzymes** are small molecules. They cannot by themselves catalyze a reaction but they can help enzymes to do so., **coenzymes** are also organic nonprotein molecules that bind with the protein molecule (apoenzyme) to form the active enzyme (holoenzyme).

**Water-Soluble Vitamins** ;Water-soluble vitamins are those that are dissolved in water and readily absorbed into tissues for immediate use. Because they are not stored in the body, they need to be replenished regularly in our diet. Any excess of water-soluble vitamins is quickly excreted in urine and will rarely accumulate to toxic levels. With that being said, certain types of water-soluble vitamin, such as [vitamin C](https://www.verywellhealth.com/the-benefits-of-vitamin-c-supplements-89083), can cause diarrhea if taken in excess.

## Fat-Soluble Vitamins

Fat-soluble vitamins are dissolved in fats. They are absorbed by fat globules that travel through the small intestines and distributed through the body in the bloodstream. Unlike water-soluble vitamins, excess fat-soluble vitamins are stored in the liver and fatty (adipose) tissues for future use They are found most abundantly in high-fat foods and are better absorbed if eaten with fat.

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| WATER SOLUBLE VITAMINS. | FAT SOLUBLE VITAMINS |
| No carrier protein | Carrier proteins present. |
| No storage | Stored majorly in the liver |
| Regular dietary is required | The treatment of deficiency involves single large doses |
| Deficiency manifest rapidly due to no storage. | Deficiency manifests only when stored ones are depleted. |

1. **Niacin** assists **functions** of **the** nervous and digestive system. It plays **a role** in food metabolism and in **the** formation of red blood cells and skin. NAD and NADP are coenzymes that are part of **the** energy production system of **the** body. This system works by means of oxidation and reduction (redox) reactions.