



# SNS COLLEGE OF TECHNOLOGY

(An Autonomous Institution)

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## UNIT IV- METABOLISM OF NUCLEIC ACIDS, VITAMINS AND MINERALS

### Metabolism of micro and macro minerals

Here's an overview of the metabolism of micro and macro minerals:

#### Macro Minerals

Macro minerals are minerals that are required in large amounts by the body. The main macro minerals are:

##### 1. Calcium

- Absorption: Absorbed in the small intestine, with vitamin D enhancing absorption.
- Transport: Bound to albumin or alpha-2 macroglobulin in the bloodstream.
- Storage: Stored in bones and teeth.
- Excretion: Excreted in the urine and feces.
- Functions: Essential for bone health, muscle function, and nerve function.

##### 2. Phosphorus

- Absorption: Absorbed in the small intestine, with vitamin D enhancing absorption.
- Transport: Bound to albumin or alpha-2 macroglobulin in the bloodstream.
- Storage: Stored in bones and teeth.
- Excretion: Excreted in the urine and feces.
- Functions: Essential for bone health, energy production, and nerve function.

##### 3. Magnesium

- Absorption: Absorbed in the small intestine, with vitamin D enhancing absorption.
- Transport: Bound to albumin or alpha-2 macroglobulin in the bloodstream.
- Storage: Stored in bones, muscles, and soft tissues.

- Excretion: Excreted in the urine and feces.
- Functions: Essential for muscle function, nerve function, and energy production.

#### 4. Potassium

- Absorption: Absorbed in the small intestine.
- Transport: Bound to albumin or alpha-2 macroglobulin in the bloodstream.
- Storage: Stored in muscles and other soft tissues.
- Excretion: Excreted in the urine and feces.
- Functions: Essential for muscle function, nerve function, and heart function.

#### 5. Sodium

- Absorption: Absorbed in the small intestine.
- Transport: Bound to albumin or alpha-2 macroglobulin in the bloodstream.
- Storage: Stored in bones, muscles, and other soft tissues.
- Excretion: Excreted in the urine and feces.
- Functions: Essential for fluid balance, nerve function, and muscle function.

#### 6. Chloride

- Absorption: Absorbed in the small intestine.
- Transport: Bound to albumin or alpha-2 macroglobulin in the bloodstream.
- Storage: Stored in bones, muscles, and other soft tissues.
- Excretion: Excreted in the urine and feces.
- Functions: Essential for fluid balance, nerve function, and muscle function.

### Micro Minerals

Micro minerals are minerals that are required in small amounts by the body. The main micro minerals are:

#### 1. Iron

- Absorption: Absorbed in the duodenum, with vitamin C enhancing absorption.
- Transport: Bound to transferrin in the bloodstream.
- Storage: Stored in the liver, spleen, and bone marrow.
- Excretion: Excreted in the feces.

- Functions: Essential for the production of hemoglobin and energy production.

## 2. Zinc

- Absorption: Absorbed in the small intestine.

- Transport: Bound to albumin or alpha-2 macroglobulin in the bloodstream.

- Storage: Stored in the liver, pancreas, and kidneys.

- Excretion: Excreted in the urine and feces.

- Functions: Essential for immune function, wound healing, and protein synthesis.

## 3. Iodine

- Absorption: Absorbed in the small intestine.

- Transport: Bound to albumin or alpha-2 macroglobulin in the bloodstream.

- Storage: Stored in the thyroid gland.

- Excretion: Excreted in the urine and feces.

- Functions: Essential for the production of thyroid hormones.

## 4. Selenium

- Absorption: Absorbed in the small intestine.

- Transport: Bound to albumin or alpha-2 macroglobulin in the bloodstream.

- Storage: Stored in the liver, kidneys, and pancreas.

- Excretion: Excreted in the urine and feces.

- Functions: Essential for antioxidant function and immune function.

## 5. Copper

- Absorption: Absorbed in the small intestine.

- Transport: Bound to ceruloplasmin in the bloodstream.

- Storage: Stored in the liver, brain, and other tissues.

- Excretion: Excreted in the bile and urine.

- Functions: Essential for connective tissue health, immune function, and energy production.

## 6. Manganese

- Absorption: Absorbed in the small intestine.

- Transport: Bound to albumin or alpha-2 macroglobulin in the bloodstream.

- Storage: Stored in the liver, bones, and kidneys.

- Excretion: Excreted in the urine and feces.

- Functions: Essential for bone health, wound healing, and metabolism.