

## UNIT 4

### MINERALS

Mineral elements are inorganic substances found in the body tissues and fluids. They comprise 4-6% of our body weight.

Two distinct characteristics are:

- They do not provide energy
- They are not destroyed during food preparation

Minerals are classified into 3 groups

1. Macro minerals/major : calcium, phosphorus, sodium, chlorine
2. Minor minerals : iron, manganese
3. Trace minerals : iodine, fluorine, zinc, molybdenum

### Calcium

Functions:

- Structural component- required for the formation and maintenance of skeleton and teeth.
- For normal contraction of muscles like to make heartbeats
- Required for nervous activity
- Has a role in blood clotting.

Food sources:

- Rich amongst animal sources are milk and milk products like curd, paneer, buttermilk, skim milk powder

- Amongst plant foods Green leafy vegetables, fenugreek, drumstick
- Ragi is a rich source in cereal and millets and sesame seeds (til).
- Small fresh and dried fish
- Deficiency:
- Severe deficiency will lead to fragility/weakness of bones. This leads to osteoporosis in adults and rickets in children which is the manifestation of Vit. D.
- Excessive intake leads to Tetany: symptoms are muscular pain and twitching of facial muscles.

## Iron

### Functions:

- Essential element for the formation of Hb.
- An important role in the transport of oxygen

### Food sources:

- Liver, organ meat are excellent sources as are readily available form
- Rich sources are cereals like whole wheat flour, rice flakes, millets like bajra, ragi, pulses

Vitamin C helps in iron

absorption

### Deficiency:

- Deficiency of Iron causes Iron Deficiency Anaemia.
- Symptoms are general fatigue, breathlessness on exertion, giddiness and pallor of skin (paleness), spoon-shaped nails.



