

## MINERALS

- **Macro minerals are required by the body in larger amounts (more than 100 mg per day).**
- **Micro (trace) minerals are required in very small amounts (less than 100 mg per day), but they are still essential for good health.**

### Macro Minerals

| Mineral    | Functions                                         | Sources of Food                            | Symptoms of Deficiency    | Deficiency Disease/Condition     |
|------------|---------------------------------------------------|--------------------------------------------|---------------------------|----------------------------------|
| Calcium    | Strong bones and teeth; muscle and nerve function | Milk, curd, cheese, ragi, leafy vegetables | Weak bones, muscle cramps | Rickets (children), Osteoporosis |
| Phosphorus | Bones/teeth; energy production                    | Milk, eggs, fish, pulses, nuts             | Bone pain, weakness       | Weak bones                       |
| Magnesium  | Muscle and nerve function; enzyme activity        | Nuts, seeds, whole grains, spinach         | Muscle cramps, fatigue    | Hypomagnesemia                   |
| Sodium     | Fluid balance; nerve impulses                     | Table salt, pickles, soups                 | Muscle cramps, dizziness  | Hyponatremia                     |
| Potassium  | Heart, muscles, nerves                            | Banana, coconut water, potatoes, beans     | Weakness, muscle cramps   | Hypokalemia                      |
| Chloride   | Fluid balance; stomach acid formation             | Table salt, tomatoes, olives               | Weakness, poor digestion  | Hypochloremia                    |

### Micro (Trace) Minerals:

| Minerals | Function                          | Source of food                | Symptoms of deficiency         | Deficiency diseases |
|----------|-----------------------------------|-------------------------------|--------------------------------|---------------------|
| Iron     | Forms haemoglobin; carries oxygen | Spinach, beans, jaggery, meat | Pale skin, tiredness, weakness | Anaemia             |
| Zinc     | Growth,                           | Nuts,                         | Poor                           | Zinc                |

|        |                                 |                             |                                  |            |
|--------|---------------------------------|-----------------------------|----------------------------------|------------|
|        | immunity,<br>wound<br>healing   | seeds,<br>pulses,<br>meat   | growth,<br>slow wound<br>healing | deficiency |
| Iodine | Produces<br>thyroid<br>hormones | Iodised<br>salt,<br>seafood | Swollen<br>neck,<br>sluggishness | Goitre     |