Major minerals
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• They are the naturally-occurring chemicals we need to live – excluding oxygen, nitrogen, hydrogen and carbon.

• There’s no such thing as *essential* minerals – because all dietary minerals are essential.

• The recommended daily amount of major minerals is 100mg or more
Functions

• Water and electrolyte balance
• Blood pressure regulation
• Growth & development
• Cell metabolism
• Bone health
• Blood cell formation and clotting
• Muscle contraction and relaxation
• Nerve impulse transmission
• Antioxidant defence
The 7 major minerals

1. Calcium
2. Magnesium
3. Potassium
4. Sodium
5. Sulfur
6. Phosphorous
7. Chloride
Calcium functions

• Calcium is the most abundant mineral in our body. About 99% of the calcium in the body is in bones & teeth.

• Normal blood concentration of 9-11mg/dl should be maintained.

• Growth and bone development

• Role in body fluids – to maintain blood pressure

• Blood clotting

• Transmission of nerve impulses

• Muscle contraction
Food sources of calcium

• Dairy products: milk and milk products
• Dried fish
• Green vegetables like kale and broccoli.
• Black-eyed peas
• Orange juice.
Dairy Food Sources of Calcium

Non Dairy Food Sources of Calcium
Problems due to deficiency of calcium

- **Osteoporosis** (weak bones due to low bone density)
• **Rickets** (a condition in children involving softening of the bones)
• **Osteomalacia** is the softening of the bones caused by defective bone mineralization secondary to inadequate levels of available phosphate and calcium.
Problems due to excess intake of calcium

• Increased risk of kidney stone formation

• Affects the absorption of other minerals like iron and zinc

• Calcium supplements may increase calcium deposits in coronary arteries and increase risk of heart attacks
Phosphorous
Functions

- Essential for growth being a part of constituent in DNA & RNA
- Constituent of cell membranes as phospholipids
- Facilitate transport of fats as lipoproteins
- Plays a key role in energy metabolism
- Component of several enzymes and coenzymes
- Important role in buffer system and regulating body pH
- Important constituent of bone and teeth
Food sources of phosphorous

- Almost all types of food contain some phosphorous, and not many people are lacking it.
- It is most prevalent in meat and seafood.
- Cheese nuts and seeds.
Phosphorous food sources
Problems due to deficiency and excess of Phosphorous

• Phosphorus deficiency may cause bone loss, weakness and pain

• Excess amounts can be a problem in kidney diseases