



# Sports & Physical Education

**Nutrition**

**Minerals**

Sports & Physical Education



# Minerals

## Macro Minerals

- Calcium
- Phosphorus
- Sulphur
- Potassium
- Chlorine
- Sodium
- Magnesium

## Micro Minerals

- Copper
- Iron
- Zink
- Cobalt
- Iodin
- Manganese
- Selenium
- Chromium
- Molybdenum
- Fluorine

# Minerals



## Calcium(Ca)

- Important for formation and growth of teeth and bone.
- Muscle Contraction
- Blood Clotting

## Sources:-

- Milk, Green Vegetables, Almonds, Eggs, Fish, Pulses etc.

## Deficiency:-

- Decreased rate of growth; Osteomalacia

# Minerals



## Phosphorus(P)

- Important for formation and growth of bone and teeth with Calcium.
- Essential for life because it acts as a phosphate for DNA, RNA, ATP and phospholipids.

## Sources:-

- Milk, Butter, Fish, Meat, Egg York, Green Vegetables, Pulses, Rice etc.

## Deficiency:-

- Development of body stops, Osteoporosis, Hypophosphatamia

# Minerals



## Potassium(K)

- Helps in Muscle Contractions and acid-base balance.

## Sources:-

- Leafy greens, beans, nuts, dairy foods, and starchy vegetables like winter squash are rich sources.

## Deficiency:-

- Hypopotassemia

# Minerals



## Sulphur(S)

- Growth of hair and nails.
- Important for the digestion and the formation of the protein
- Proper growth of muscle formation.

## Sources:-

- Egg, Meat, Liver, Fish, Wheat, Corn etc.

## Deficiency:-

- Hair Fall, Obesity, Heart diseases, Chronic Fatigue etc.

# Minerals



## Sodium(Na)

- Important for Water Balance, Muscle Contraction and acid-base balance.
- Maintains body temperature.

## Sources:-

- Sodium Chloride(salt), Sea Salt, Stone Salt, Green Vegetable etc.

## Deficiency:-

- Cramp, Tiredness, Hypoatremia

# Minerals



## Magnesium(Mg)

- Formation of Bone and teeth.
- Helps in metabolism.
- Controls the growth of the body.

## Sources:-

- Green Vegetables, pulses, nuts, whole grains etc.

## Deficiency:-

- Weak Bones



# Minerals



## Chlorine(Cl)

- Regulates flow of fluids and nutrients.
- Stimulates stomach acid.

## Sources:-

- Table salt, Sea salt, Tomatoes, lettuce etc.

## Deficiency:-

- Hypochloremia.

# Minerals



## Zinc(Zn)

- Insulin Function
- Converts Glucose to Glycogen
- Lowers Blood Sugar

## Sources:-

- Fish, meat, salads, Mushroom etc.

## Deficiency:-

- Skin Diseases, Weaker Immune system, Infertility etc.

# Minerals



## Copper(Cu)

- Formation of Red Blood Cell
- Important for growth of bone .

## Sources:-

- Liver, Fish, Egg, Apple, Green Vegetables, Nuts etc.

## Deficiency:-

- Hypocupraemia

# Minerals



## Iodine(I)

- Important for Physical and Mental Development
- Helps in formation of Thyroxine Hormone.

## Sources:-

- Common Salt, Fish, Milk, Sea food, onion etc.

## Deficiency:-

- Goitre, Cretinism, Myxoedema, Dwarfism etc.

# Minerals



## Fluorine(F)

- Formation of bones and teeth.

## Sources:-

- Sea food, Water, cottage cheese, tea etc.

## Deficiency:-

- Dental and bone Caries.

# Minerals



## Iron(Fe)

- Formation of Hemoglobin in blood
- Helps in Muscle Formation

## Sources:-

- Liver, Apple, Guava, Banana, Eggs, Meat, Butter etc.

## Deficiency:-

- Anaemia, Glositis

# Minerals



## Cobalt(Co)

- Formation Red Blood Cell
- Vitamin B<sub>12</sub>.
- Maintain nervous system.

## Sources:-

- Fish, nuts, broccoli, spinach etc.

## Deficiency:-

- Anemia, Vitamin B<sub>12</sub> deficiency etc.

# Minerals



## Manganese(Mn)

- helps activate many enzymes in metabolism

## Sources:-

- Tea, bread, grains, green leafy vegetables, soyabeans etc.

## Deficiency:-

- Abnormal growth of bones, skin diseases.



# Minerals



## Selenium

- Prevents immune system and cell or tissue from destruction.
- Formation of Vitamin C
- Help in Growth in Thyroid Gland.

## Sources:-

- Egg, meat, grains etc.

## Deficiency:-

- Risk of cancer. Problem related to vitamin C and thyroid.

# Minerals



## Molybdenum

- Helps to process proteins and genetic material like DNA.
- Found in bones, liver and kidney.

## Sources:-

- Pea, Cauliflower, green leafy vegetables etc.

## Deficiency:-

- Headache, mental problems etc.

# Minerals



## Chromium(Cr)

- Activates insulin

## Sources:-

- Meat, grains, cauliflower, spices, potato etc.

## Deficiency:-

- Diabetes, arthrosclerosis etc.



# Thank You for Watching



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