

NUTRITION: ROLE OF ZINC

Zinc is an essential trace mineral running in the body in larger amounts than any other trace element except Iron. It is present in all tissues. Human body contains approximately 2 to 3gm of Zinc.

Function Of Zinc

- Fight disease and protect immune system.
- Involved in energy production through Krebs cycle
- Eye sight in the elderly
- Male sex and potency

Zinc as constituent of Enzymes

Constituent of at least 200 enzymes involved in digestion and metabolism

- Tissue respiration enzyme. Carbonic anhydrase-energy production
- Alcohol detoxification-breakdown of alcohol.
- Protein synthesis including RNA & DNA synthesis.
- Bone and protein metabolism.

Role of Zinc in reproduction

- Zinc is involved in general growth and proper development of reproductive organs and normal function of prostate gland.
- Involved in DNA synthesis which carry inherited traits and direct the activity of each cell
- Zinc is involved in healing wounds and burns.

Source of Zinc

- Zinc value in food we eat is adversely affected by soil exhaustion and food processing.
- Natural unprocessed foods as the best source
 - Whole grain products
 - Brewers yeast
 - Wheat bran and germ
 - Pumpkin
 - Diet high in protein

Absorption and Storage of Zinc

- Absorbed in the upper small intestine
- Only the required amount is absorbed
- Large amount of calcium and fiber in diet reduces absorption.
- Excretion through faeces

- Stored in liver, pancreas, kidney, bones and muscles
- Stored in large amounts in prostate gland and spermatozoa.

Zinc Requirement

- Daily dietary intake 15mg in adult male and 12mg adult females.
- Additional 15mg in pregnancy and 25mg during lactation.
- Average diet yield 8 to 11mg daily.

Zinc Toxic Effect

- Minimal serious side effects
- Nausea and vomiting
- Large amount of zinc intake reduces copper and iron utilization and vitamin A.

Zinc Deficiency and Symptoms

Zinc deficiency can be caused by

- Unbalanced diet
- Alcohol consumption flushes zinc out of liver
- Strenuous exercises, stress, fatigue

Effect of zinc deficiency

- Retarded growth
- Delayed sexual maturity
- Poor healing of wounds
- Brittle nails and hair
- Irregular periods in teen women
- Impotence in young males
- Painful knee and hip joints in teenagers
- Stretch marks and white spots in fingernails
- Chronic depletion predisposes to cancer
- Fatigue
- Loss of taste and poor appetite

Zinc deficiency in reproduction

- Zinc deficiency causes sterility and dwarfism.
- Prostate gland contains largest amounts of zinc and deficiency causes abnormal size and structure
- Offspring mentally retarded birth, defects and still born