



**M.SC**  
**Semester**  
**III Core**  
**Course XI**  
**Bio-Inorganic**  
**Chemistry**

**TOPIC:- Copper Metabolism**

**Department of Chemistry**  
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# Deficiency

- **Copper deficiency is caused by malnutrition, malabsorption & nephrotic syndrome (increased loss)**
- **Clinical features:**
- **Neutropaenia (decreased number of neutrophils)**
- **Hypochromic anemia in the early stages.**

- **Osteoporosis & various bone & joint abnormalities, due to impairment in copper-dependent cross-linking of bone collagen and connective tissue**
- **Decreased pigmentation of skin due to depressed copper dependent tyrosine kinase activity.**
- **Neurological abnormalities probably caused by depressed cytochrome oxidase activity.**