



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

TOPIC:- Copper Metabolism

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Copper Metabolism

- **Total body copper is about 100 mg.**
- **It is present in all tissues.**
- **The highest concentrations are found in liver, kidney, with significant amount in cardiac and skeletal muscle & in bone.**
- **Sources:**
- **Shellfish, liver, kidneys, egg yolk & some legumes are rich in copper.**

- **RDA:**
- **2to 3mg/day.**
- **Metabolism:**
- **Absorbed from upper small intestine.**
- **Absorbed copper is transported to the liver bound to albumin & exported to peripheral tissues mainly as ceruloplasmin & to lesser extent to albumin.**

- **Metallothionein is a transport protein that facilitates copper absorption.**
- **Phytate, zinc & molybdenum decrease copper uptake.**
- **Plasma copper: 100– 200mg/dl.**
- **Most of this (95%) is tightly bound to ceruloplasmin, small fraction is loosely held to albumin.**
- **Plasma ceruloplasmin: 25– 50mg/dl.**