TOPIC: TRACE MINERALS: IRON AND COPPER

Iron (Fe)

RDA (Males 19-50): 8 mg
RDA (Females 19-50): 18 mg

UL (Adults): 345 mg

- **Main bodily functions:**
  - Major component of _____ & myoglobin.
    - Bind _____ in the blood (and muscles).
- Body has iron _____ in the liver & bone marrow.

Food Sources	Deficiency	Excess/Toxicity
_____ iron: animal products. ____ -_____ iron: plant products. 	**Iron Deficiency Anemia:** lack of healthy ____ blood cells → not enough _____ to tissues. ◆ *Risk*: age (infants, children) & menstruation. ◆ _____; pale skin. ◆ Weakened immunity.	◆ Nausea. ◆ Vomiting. ◆ Diarrhea. ◆ Constipation. ◆ Organ damage.
Things That _____ Absorption Heme-iron. Meat (_____) Factor, Vitamin ____.		
Main dietary concern: females (esp. vegetarian/_____) are at increased risk for anemia.		

EXAMPLE

Vegetarian females who menstruate are at greater risk for anemia.

a) Why does vegetarianism increase risk of anemia, even when eating vegetables high in iron?

_____

b) Why does menstruation increase the risk of anemia?

_____

PRACTICE

Which form of iron is the most bioavailable?

a) Heme iron. b) Elemental iron. c) Reduced iron. d) Non-heme iron.

PRACTICE

If someone is following a vegan eating pattern, what can they do to help their body absorb iron?

a) Only eat heme iron.
b) Add meat factor to their meals.
c) Combine foods high in vitamin C with foods high in iron.
d) Increase soluble fiber intake.

TOPIC: TRACE MINERALS: IRON AND COPPER

Copper (Cu)

RDA (19-50): 900 µg

◆ **Main bodily functions:**

- Cofactor for many _____.
- Helps with _____ transport in the blood.
- Energy metabolism; collagen & elastin synthesis.
- Regulating _____transmitters (e.g., serotonin).

Food Sources	Deficiency (Rare)	Excess/Toxicity
Organ meats, seafood, nuts, seeds, & whole grains. 	Can impair hemoglobin synthesis. → anemia.	Not a concern.
Things That Limit Absorption		
_____, iron, & vitamin C.		
Main dietary concern: none.		

PRACTICE

Which of the following has NOT been shown to limit copper absorption?

a) Zinc.
b) Vitamin D.
c) Iron.
d) Vitamin C.

PRACTICE

Which of the following are functions of copper in the body?

I) Synthesis of collagen and elastin.
II) Stabilizing the structure of certain proteins.
III) Transport of iron in the blood.

a) I & II.
b) I & III.
c) II & III.
d) I, II, & III.