

## Iron – Are You Getting Enough?

### Did You Know?

Iron deficiency is the most common nutrient deficiency in the world, affecting more than 1 billion people.

### Why Do Our Bodies Need Iron?

- Component of *hemoglobin*, which transports oxygen in the blood
- Component of *myoglobin*, which makes oxygen available for muscle contraction
- Helps the body utilize energy

### How Much Iron Do We Need?

Gender	Age Range	Iron Requirement (mg/day)
<i>Males</i>	9-13	8
	14-18	11
	19-70+	8
<i>Females</i>	9-13	8
	14-18	15
	19-50	18
	>50	8
	Pregnancy (all ages)	27
	Lactation ( $\geq$ 19 years)	9

### Factors that Influence Iron Absorption:

- Type of Iron
  - *Heme* Iron
    - Found only in animal foods – meats, poultry, fish, shellfish
    - About 25% absorbed by the body
  - *Nonheme* Iron
    - Found in both plant-derived and animal-derived foods
    - About 10% absorbed by the body
- Factors that enhance nonheme iron absorption:
  - *MFP factor* found in meat, fish and poultry
  - *Vitamin C* in tomatoes, oranges and other citrus fruits
  - *Citric acid* and *lactic acid* from foods
  - *Hydrochloric acid* in the stomach
  - *Sugars*, including those in wine
- Factors that inhibit iron absorption:
  - *Phytates* and *fibers* – in grains and vegetables
  - *Oxalates* – in spinach
  - *Calcium* and *phosphorus* – in milk and dairy products
  - *EDTA* – food additive
  - *Tannic acid* and other *polyphenols*– in tea and coffee

**Iron-Rich Foods to Include:**

- Fish and shellfish – tuna, salmon, oysters, clams, shrimp, etc.
- Lean meats – beef, pork, lamb
- Poultry – chicken and turkey
- Organ meat – beef liver
- Beans and legumes – kidney, black, soy, pinto, navy, garbanzo, lentils
- Tofu and soy-based meat alternatives like veggie burgers
- Greens – spinach, kale; mustard, collard and turnip greens
- Vegetables – broccoli, asparagus, parsley, Brussels sprouts, potatoes, peas
- Dried fruits – raisins, dates, prunes, apricots
- Iron-fortified whole grains – cereals, breads, tortillas, rice, pasta
- Blackstrap molasses, egg yolks, nuts

**Putting It All Together:**

Some foods that are high in iron (such as whole grains) contain the less bio-available, nonheme type of iron. In addition, some of these foods also contain factors that further inhibit the absorption of iron – like spinach, which is a nonheme iron source that also contains oxalates. Combining these foods with “iron-absorption enhancers,” such as vitamin C-rich oranges or tomatoes, improves the bio-availability of iron.

**References:**

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