

Iron

What is iron?

Iron is a mineral that is important to all body cells. It is particularly important for blood cells because iron is needed to make hemoglobin. Hemoglobin is the protein in blood cells that carries oxygen to body tissues.

If you don't have enough iron you may develop iron deficiency anemia, a condition in which your blood contains less hemoglobin than normal. People who have iron deficiency anemia are often tired and lack energy.

Iron deficiency anemia may result from:

- a diet that lacks enough iron
- blood loss
- body changes during pregnancy.

How much iron do I need?

How much iron you need depends on your age and whether you are male or female. The recommendations are:

What foods are good sources of iron?

Iron is found in a variety of foods. Heme iron is found in meat, poultry, and fish. Non-heme iron is found in fruits, vegetables, grains, nuts, and legumes. The body absorbs heme iron better than non-heme iron.

Many cereals and breads are fortified with extra iron. Check the labels.

Do I need an iron supplement?

If you get enough iron in your diet you don't need a supplement. Taking unnecessary sup-

Food sources of iron

| Food | Serving size | mg iron (approximate) |
|---------------------------|---------------------|------------------------------|
| beef | 3 oz | 2.5 |
| chicken, white | 3 oz | 0.8 |
| chicken, dark | 3 oz | 1.1 |
| lamb | 3 oz | 1.5 |
| pork, loin | 3 oz | 0.7 |
| pork, shoulder | 3 oz | 1.0 |
| pork, leg | 3 oz | 0.6 |
| turkey, white | 3 oz | 1.1 |
| turkey, dark | 3 oz | 2.0 |
| fish | 3 oz | 1.1 |
| clams, raw | 2 oz | 8.0 |
| shrimp | 3 oz | 2.6 |
| liver, beef | 3 oz | 5.0 |
| liver, chicken | 3 oz | 7.2 |
| tofu, extra firm | 4 oz piece | 1.0 |
| navy beans | 1/2 cup | 2.5 |
| black-eyed peas | 1/2 cup | 4.0 |
| garbanzo beans | 1/2 cup | 4.5 |
| green peas | 1 cup | 2.5 |
| lentils | 1/2 cup | 3.3 |
| apricots, dried | 10 | 1.7 |
| dates | 10 | 1.0 |
| raisins | 1/4 cup | 1.0 |
| prune juice | 8 oz | 2.7 |
| green beans | 1 cup | 1.6 |
| spinach | 1/2 cup | 3.2 |
| potato, baked with skin | 1 | 2.7 |
| bagel | 1 | 2.5 |
| molasses, blackstrap | 1 tablespoon | 2.5 |
| macaroni, enriched cooked | 1 cup | 2.0 |
| wheat germ, toasted | 2 tablespoons | 1.0 |

Iron**Daily Recommended Requirement for Iron**

| Group | mg Iron/day |
|---|--------------------|
| Children 1 through 10 years old | 10 |
| Males 11 through 18 years old | 12 |
| Men over 18 years old | 10 |
| Premenopausal females over 11 years old | 15 |
| Postmenopausal women | 10 |
| Pregnant and breast-feeding women | 15 to 30 |

plements may be harmful. You can accumulate too much iron in your body, which can damage various organs.

If you have iron deficiency anemia your doctor may recommend a supplement. Some

supplements cause constipation. Make sure you drink enough fluid and have enough fiber in your diet.

Does anything affect the way the body absorbs iron?

Vitamin C (found in citrus fruits and tomatoes) helps the body absorb nonheme iron. Eating heme-iron-rich foods with nonheme-iron-rich foods helps increase absorption. Consuming coffee and tea (even decaffeinated), excess dietary fiber, or calcium supplements within 2 hours of eating iron-rich foods can decrease iron absorption.

Precompetition meals

What's the purpose of the precompetition meal?

The precompetition meal serves two purposes:

- to keep you from feeling hungry before and during the event
- to maintain the levels of sugar in your blood for your muscles to use during training and competition.

Many athletes often skip meals before they train or workout, especially if the workout is in the early morning. Skipping meals or not eating before an early morning workout lowers the stored energy in your body and can impair your performance. This is particularly true if your workout involves endurance training that lasts for 30 minutes or longer.

When should I eat my precompetition meal?

Your stomach should not be full during your event. In general, it takes 1 to 4 hours for your stomach to digest a meal and empty it into your intestines. If you are nervous, that process may take even longer. Food that remains in your stomach during an event may cause stomach upset, nausea, and vomiting. If you

eat your meal 1 to 3 hours before the start of your competition, your stomach will be almost empty during the event.

What is a good precompetition meal?

Your pre-event meal should include foods that are high in carbohydrates, such as breads, pasta, fruits, or vegetables. Your stomach and intestines digest these foods quickly. Carbohydrates also help build up stored energy in your body for use later during your event.

To avoid stomach upset or nausea, the closer you are to the time of your event the less you should eat. You can have a liquid meal closer to your event than a solid meal because your stomach digests liquids faster. This is especially useful if you are nervous and tense.

If you compete at all-day events such as track meets, swimming meets, or tournaments, you may be tempted by whatever is available at concession stands. Consider the amount of time you have between your events, bring healthy foods, and plan accordingly. Suggested pre-event menus include the following:

1 hour or less before competition

- fruit or vegetable juice such as orange, tomato, or V-8, and/or
- fresh fruit such as apples, watermelon, peaches, grapes, or oranges and/or
- up to 1 and a half cups of a sports drink, such as Gatorade.

2 to 3 hours before competition

- fresh fruit, fruit or vegetable juices, and/or
- bread; bagels; English muffins with limited amounts of
- butter, margarine, or cream cheese; or low-fat yogurt; and/or
- up to 4 cups of a sports drink, such as Gatorade.

3 to 4 hours before competition

- fresh fruit, fruit or vegetable juices, and
- bread; bagels; baked potatoes; cereal with low-fat milk;
- low-fat yogurt; sandwiches with a small amount of peanut butter, lean meat, or low-fat cheese; and/or
- up to 7 and one-half cups of a sports drink.