

# Iron-deficiency Anemia

## What is anemia?

Anemia is not a disease; it is a symptom of either a reduction of the number of red blood cells in the bloodstream or not enough hemoglobin in each red blood cell. Since hemoglobin combines with and transports oxygen to the body cells for nourishment as well as collecting carbon dioxide for transport to the lungs, any condition that reduces the number of red blood cells or decreases the hemoglobin concentration also lowers the amount of oxygen getting to the rest of the body.

## How might anemia affect me?

- Tiredness
- Dizziness
- Paleness
- Heart palpitations
- Shortness of breath
- Nausea
- Loss of appetite
- Hair loss
- Constipation
- Slow healing
- General weakness
- Susceptibility to infection
- Desire to eat non-food
  - Clay, chalk, paint, dirt, etc

Being anemic does not predispose a woman to postpartum hemorrhage, but it can worsen its impact. Anemic mothers take longer to recover postpartum, and experience more difficulties coping due to excessive tiredness and weakness. Ideally, the aim in pregnancy should not only be to avoid anemia, but to reach *optimal* hemoglobin levels so that your postpartum transition is as easy as possible.

## How can anemia affect my baby?

During the last six weeks of pregnancy, the baby stores iron in its liver to supplement its needs for the first three to six months of life. Like with other nutrients, the mother's body prioritizes the baby's needs over her own, thus it is rare that the baby will develop iron-deficiency anemia unless the mother is severely iron deficient.

## What causes iron-deficiency anemia?

The cause of anemia in the large majority of cases is nutritional deficiency. Anemia may also occur as a result of illness, or blood loss such as can occur at birth.

Iron depletion is common among women because we lose blood every month. It is estimated that one third to one half of women begin their pregnancies with low iron, and about 1 in 10 of these women are already anemic.

Growing a healthy baby increases a woman's iron requirements. In addition, in mid-pregnancy the amount of blood volume increases rapidly, peaking around 28-32 weeks. Because the blood plasma increases before the blood hemoglobin, this causes the relative concentration of hemoglobin to drop temporarily. This is normal and is referred to as hemodilution.

## How is anemia diagnosed?

Iron-deficiency anemia is the most common problem of pregnancy. It is recommended that all women be tested for anemia at their first prenatal visit, and then again around 28 -32 weeks or as symptoms arise. A simple blood draw will check the hemoglobin concentration in the blood, as well as the amount of iron stored in the liver as ferritin (think of this as "backup"). If diagnosed with nutritional anemia, it is recommended to have follow-up testing after 3-4 weeks of treatment.

## What are my options for treatment?

### *Prevention*

If you are not anemic, a nutritious diet high in iron-rich foods will help keep you that way. Regular exercise can also help prevent or treat anemia, because it helps increase the body's oxygen carrying capacity.

If you are taking multivitamins, it is important to remember that these should be in addition to, not a substitute for, a nutritious diet. Although multivitamin supplements for pregnant women all contain iron, this iron frequently causes side effects such as nausea, diarrhea, heartburn and/or constipation leading to worse nutrition habits! As well, the iron in multivitamins is usually blocked from being absorbed by the calcium and zinc content.

Iron overload can be toxic, causing liver damage. Women who are not anemic or who have Thalassemia should not take iron supplements.

### *Mild anemia*

Treatment depends on how severe your anemia is, what other approaches you may have already tried, and what your body tolerates. For mild anemia, therapies with herbs and nutrition may work well.

- Floradix (take double the recommended dose)

### *Moderate or symptomatic anemia*

For more moderate anemia, it is traditionally recommended that women take iron supplements.

- We can suggest something specific for you as needed.

## Iron-rich foods

HEME iron is found only in animal sources and is absorbed more easily than NON-HEME iron, which is found in vegetable sources. Regardless, both types of iron are valuable, and may be absorbed effectively to boost iron levels.

## Increasing iron absorption

- Do not take calcium or zinc supplements at the same time as iron, since they combine in the intestine and prevent absorption. Consume concentrated sources of calcium at different times than iron sources.
- Eating foods high in vitamin C with your iron will increase absorption.
- Cooking in cast-iron will aid in increasing hemoglobin levels.
- Minimize caffeinated tea and coffee, or drink between meals only – the polyphenols decrease iron absorption
- Combine heme and non-heme sources of iron in the same meal

<b>Heme IRON sources</b>	<b>Serving</b>	<b>Iron (mg)</b>
Mussels*	75 g (2 ½ oz)	5.0
Beef	75 g (2 ½ oz)	2.4
Shrimp*	75 g (2 ½ oz)	2.3
Sardines*	75 g (2 ½ oz)	2.0
Turkey/Lamb	75 g (2 ½ oz)	1.5
Tuna/herring/mackerel*	75 g (2 ½ oz)	1.0
Chicken	75 g (2 ½ oz)	0.9
Pork	75 g (2 ½ oz)	0.8
Salmon (canned*/wild)	75 g (2 ½ oz)	0.6
Flatfish (flounder/sole/plaice)*	75 g (2 ½ oz)	0.3
*Due to mercury content, limit certain fish/shellfish to no more than 12 ounces total per week.		
Pregnant women should not eat liver, as the high vitamin A content can be harmful to the baby.		
<b>Non-heme IRON sources</b>	<b>Serving</b>	<b>Iron (mg)</b>
Pumpkin seeds, kernels, roasted	60 mL (1/4 cup)	8.6
Tofu, medium firm or firm	150 g (3/4 cup)	2.4 - 8.0*
Infant cereal, dry	28 g (10 Tbsp)	6 - 7*
Soybeans, dried, boiled	175 mL (3/4 cup)	6.5
Instant enriched oatmeal	1 package	4.2 - 6.0*
Lentils, cooked	175 mL (3/4 cup)	4.9
Enriched cold cereal	30 g	4.0*
Dark red kidney beans, boiled	175 mL (3/4 cup)	3.9
Blackstrap molasses	15 mL (1 Tbsp)	3.6
Refried beans	175 mL (3/4 cup)	3.1
Cream of wheat, instant, prepared	175 mL (3/4 cup)	3.1
Soy beverage	250 mL (1 cup)	2.9
Wheat germ, ready to eat, toasted, plain	30 g (2 Tbsp)	2.7
Chickpeas, canned	175 mL (3/4 cup)	2.4
Soybeans, green, boiled	125 mL (1/2 cup)	2.4
Tahini, sesame seed butter	30 g (2 Tbsp)	2.3
Lima beans, boiled	125 mL (1/2 cup)	2.2
Swiss chard, boiled	125 mL (1/2 cup)	2.1
Asparagus, canned	6 spears	2.0
Potato, baked, with skin	1 medium	1.9
Bagel	1/2	1.8
Cherries, sour	125 mL (1/2 cup)	1.8
Shredded Wheat	30 g	1.8*
Quinoa, cooked	125 mL (1/2 cup)	1.7
Seaweed, agar, dried	8 g (1/2 cup)	1.7
Beets, canned	125 mL (1/2 cup)	1.6
Prune juice, canned	125 mL (1/2 cup)	1.6
Cream of wheat, regular, prepared	175 mL (3/4 cup)	1.5
Green peas, boiled	125 mL (1/2 cup)	1.3
Sunflower seeds, kernels, roasted	60 mL (1/4 cup)	1.2
Whole wheat bread	35 g (1 slice)	1.2
Eggs	2	1.1
Oats, quick or large flakes, prepared	175 mL (3/4 cup)	1.1
Pearled barley, cooked	125 mL (1/2 cup)	1.1
Sauerkraut	125 mL (1/2 cup)	1.1
Pasta, enriched, cooked	125 mL (1/2 cup)	1.0
Molasses, fancy	15 mL (1 Tbsp)	1.0
Raisins	60 mL (1/4 cup)	0.7
Broccoli, cooked	125 mL (1/2 cup)	0.6
Peanut butter	30 mL (2 Tbsp)	0.6

\* Iron amounts in enriched foods vary; check the label for accurate information. If the iron amount is given as a percentage of the daily value (DV) standard used is 14 mg (or 7 mg for infant cereals). For example, if a serving of cereal has 25% of the daily value, it has 3.5 mg of iron (0.25 x 14).