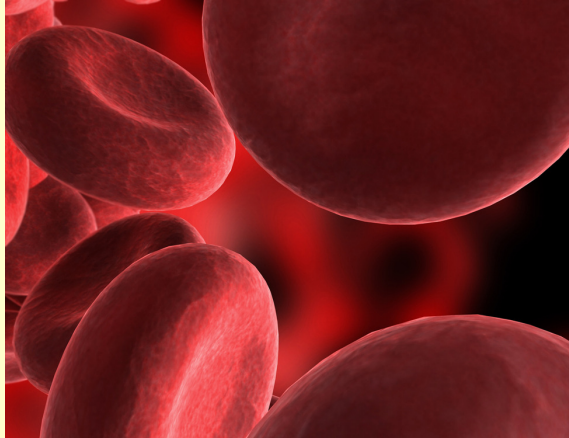


# NMS Nutrition Notes

## Iron

Iron is a mineral that your body needs to stay healthy. Your body contains less than a teaspoon of iron. However, maintaining that small amount seems to be a problem for many Canadians.



### Why Iron Is Important For Your Body

Iron is essential for keeping the body functioning at its best. Iron is needed to form hemoglobin, a component of red blood cells. Hemoglobin's role is to pick up oxygen breathed into the lungs and carry it through the blood stream to every cell in the body. In each cell, oxygen is used to release maximum energy from the food you eat – energy to breathe, grow, move, and make the heart beat and keep warm. That's how iron works for you.

### How Much Iron Do You Need?

	Age	Amount (mg)
Youth	1-3	6
	4-12	8
Males	13-18	10
	19+	8
Females	13-19	14
	50+	7
Pregnant Females	Second Trimester	18
	Third Trimester	23



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# Getting Enough Iron



**What happens if my body doesn't get enough iron?** Without enough iron, the body cannot produce normal amounts of hemoglobin and, as a result, the blood transports less oxygen. This condition is called iron deficiency anemia.

## Lack of Iron = Lack of Energy

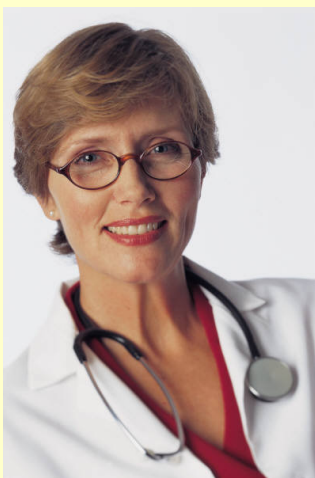
With less oxygen reaching the cells, including muscle cells, you become weakened and tired. Lack of energy and iron can cause a short attention span, fatigue, poor appetite, weight loss, pale appearance and irritability. In children, low iron levels can result in lower learning ability and depressed growth. Most often, iron deficiency anemia develops slowly, so that you feel no sudden change in your vitality level.

**What are the causes of iron deficiency anemia and who is at risk?** Poor food habits are frequently the cause of iron deficiency anemia. If the foods you eat do not provide your body with enough iron, anemia may develop.

Major stress to the body, such as pregnancy, or unusually large or prolonged blood loss, may cause anemia to develop quickly.

Low iron intake is a common nutritional problem for many women and children in Canada. Children and pregnant women especially, need iron to promote the growth of new body tissue. Teenage girls and women need more iron than men do, in order to replace the iron that is lost through menstruation.

A very few people actually suffer from too much iron in their diet, usually due to an inherited genetic abnormality. However, don't reduce iron intake without checking with your doctor or registered dietitian.



**How can I be sure that I'm getting enough iron in my diet?** If you're healthy, follow Canada's Food Guide and include some high iron choices in your diet every day, you are likely getting enough iron in your diet. Sensible eating is the key to getting enough iron, as it is to getting all the other nutrients you need as well.

**What if I'm not getting enough iron in my diet?** People who do not eat meat, fish or poultry may need more iron, due to the lower availability of iron from plant foods and eggs. If you suspect that you may need to increase your iron intake, begin now to include more iron rich foods in your diet. You can also consult your doctor who may conduct tests to see if you have an iron shortage. Your doctor may recommend an iron supplement, but in the meantime you can help yourself by increasing the high iron content foods in your diet.



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# Two Types of Iron

**Heme Iron** is only found in red meat, fish and poultry. It is more readily absorbed by the body than non-heme iron (approximately 23% of consumed iron is absorbed). Heme iron absorption is not affected by other foods you might eat. Good sources of heme iron are:

- Organ meats (liver, kidney)
- Beef
- Liverwurst
- Braunschweiger sausage
- Some shellfish (clams, oysters, and scallops)
- Turkey (dark meat only)



**Non-Heme Iron** is found in vegetables, fruits, grains, and eggs. It is absorbed less than heme iron (approximately 3-8% of consumed iron is absorbed). Non-heme absorption can be increased or decreased by other types of foods you might eat. Good sources of non-heme iron are:

- Dried fruits (raisins, apricots)
- Whole grain cereals
- Enriched cereals and pasta
- Dark green, leafy vegetables (spinach, chard, kale)
- Legumes (lentils, dried peas or beans)



## Iron Absorption

Recommended daily level of iron intake is based on the iron content of foods, but it is important to remember that some sources are better absorbed than others. Vitamin C enhances the absorption of iron from cereal and vegetable products. Furthermore, a diet which contains meat, fish, or poultry enhances the absorption by the body of iron in other foods. The body absorbs more iron when there is a greater need for iron. If body stores of iron are low, the body adapts to absorb more iron from the diet; absorption is more efficient in people who are anemic.

### Iron Content Vs. Iron Absorption

	Name of Food	Iron Content mg	Iron Absorbed mg
<b>Heme Iron Sources</b>	Beef liver, pan fried (90g)	5.7	0.64
	Sirloin steak, broiled (90g)	2.8	0.42
	Lamb chop, broiled (90g)	1.8	0.27
	Pork tenderloin, roasted (90g)	1.4	0.16
	Veal loin, roasted (90g)	0.8	0.11
	Chicken breast, roasted (90g)	0.9	0.13
	Sole, baked (90g)	0.4	0.04
<b>Non-Heme Iron Sources</b>	Bran flakes (175ml)	4.7	0.23
	Kidney beans, canned (125ml)	2.3	0.12
	Tofu (90g)	1.7	0.09
	Enriched pasta (125ml)	1.1	0.06
	Spinach, raw (125ml)	0.8	0.04
	Whole wheat bread (1 slice)	0.8	0.04



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# Maximizing Absorption

**To maximize iron absorption** in your body choose foods with higher iron content from each food group. Not many foods are rich enough in iron to provide all your iron needs. Instead, smaller amounts of iron must be obtained from several different foods.

**Iron is usually found in more colourful foods** such as red meats, dark green vegetables, and the browns of whole grains. When reading nutrition labels, remember that they may state the iron content of a food, but not the amount of iron actually absorbed by your body.

**Eat iron enhancers** with your meals to increase the amount of non-heme iron absorbed by the body. Iron enhancers include: meat, poultry, fish, and foods rich in vitamin C (oranges, grapefruit, strawberries, and cantaloupe).

**Beware of some foods that contain iron inhibitors** which decrease iron absorption. Oxalates in spinach and phytates in whole grains inhibit the absorption of iron from these foods. Other examples of common foods that contain inhibitors are: tea, coffee, bran, and legumes (soybeans, split peas, dried beans, and lentils). A high fibre intake in general may act as an iron inhibitor. To help your body absorb more iron, eat foods that contain heme iron and/or vitamin C when you eat foods that act as iron inhibitors.

## Easy Choices to Increase Iron Intake

- ➔ **Liver, kidney, and other organ meats** - Experiment with different ways of cooking them as tasty main courses. Add them to family favorites such as meatloaf or stew. Serve pate as an appetizer or snack on whole grain crackers or toast, or for lunch on a bagel, bun or bread.
- ➔ **Dried peas, beans, and lentils** - Add them to soups and casseroles and use in baked beans and chili.
- ➔ **Wheat Germ** - Sprinkle over cereals. Add to muffins and homemade breads. Shake onto salads and cooked vegetables for added crunch.
- ➔ **Sardines** - Delicious with a salad or as a snack on whole grain crackers or toast.
- ➔ **Blackstrap Molasses** - Add to muffins or baked beans in place of sugar
- ➔ **Eggs** - Use in eggnog, as a main dish or garnish, or hard-boiled as a snack.
- ➔ **Brown Barley** - Use to thicken soups and stews
- ➔ **Currants, raisins, and other dried fruits** - Sprinkle on cereals. Add to favorite desserts and breads.
- ➔ **Prune and tomato juices** - Good to drink. Use in cooking too.
- ➔ **Granola** - Make your own with whole grain and enriched cereals, dried fruit, wheat germ, molasses, and nuts.
- ➔ **Mix & Match** - Coupling two iron sources together, or serving the iron source with an enhancer, will ensure that you make the most of your iron intake. Try one of these ideas: Grapefruit + Whole Wheat Toast, Chicken + Brown Rice, Orange Juice + Oatmeal, Beef Sirloin Strips + Spinach Salad, Kiwi + Egg Sandwich.



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