

## Transcript: Preventing Iron Deficiency Anemia for Preschool Children

### Welcome

Welcome to Preventing Iron Deficiency Anemia for Preschool Children.

### About this Course

Iron is an essential nutrient in your child's diet that is important for normal growth and development. Without adequate iron in the diet, iron deficiency anemia can develop. This course provides you with information on iron, iron deficiency anemia, and tips for preventing iron deficiency anemia from developing. What will you learn?

You will learn:

- The recommended amount of iron your child should consume daily.
- Foods that are good sources of iron.
- Tips for enhancing iron absorption.
- The importance of iron in your child's diet.

### What is Iron?

Iron is a mineral found in both plant and animal food sources. Individuals of all ages need to consume iron in their diets to stay healthy and feel their best.

Iron has many important roles in the body.

Click on the icons to the right to learn more.

#### *Chicken icon*

Iron is also necessary for the normal functioning of the immune system, which helps prevent infection and keeps the body healthy.

#### *Fish icon*

Iron is necessary to form hemoglobin, a component in red blood cells that is used to transport oxygen throughout the body.

#### *Beef icon*

Iron is a part of many proteins and enzymes in the body needed for growth, development, and normal body function.

## **What is Anemia?**

Anemia is a condition in which the blood does not have enough healthy red blood cells. Without adequate iron in the diet, your child can become iron deficient and develop anemia.

The circle on the top illustrates a normal level of red blood cells.

The circle on the bottom illustrates an anemic level of red blood cells.

If the body does not have enough iron, red blood cells do not develop normally. They have less hemoglobin and cannot transport as much oxygen, which results in your child feeling weak.

To determine if a child has iron deficiency anemia blood work is done to determine hemoglobin and hematocrit levels in the blood.

## **Symptoms of Anemia**

Symptoms of anemia include: Weakness, fatigue, irritability, pale skin, headaches, loss of appetite, light-headed, and dizziness. In addition, you might find your child has frequent infections and is sick more often since iron has a role with immune function.

## **Recommended Daily Iron Intake**

Iron needs are highest when individuals are going through periods of growth, as iron is needed for the development of body tissues. During the preschool years, children grow at a rapid pace, thus ensuring iron needs are met is important.

The Recommended Dietary Allowance of Iron for Children.

Ages 1-3 years: 7 mg of iron per day

Ages 4-8 years: 10 mg of iron per day

The link below will take you to the national institutes of health iron fact sheet.

## **Foods that Provide Iron**

Iron in the diet can come from both animal and plant sources and is available in two forms. Heme iron comes from animal sources while non-heme iron comes from plant sources.

Click on the two types of iron (heme and non-heme) to learn more.

*Heme iron*

The best sources of heme iron include lean meat (beef, pork, chicken, turkey) and seafood. Our bodies can absorb iron from animal sources better than iron from plant sources.

#### *Non-heme iron*

Sources of non-heme iron include beans (white, kidney, lentils, pinto), spinach and other dark green, leafy vegetables, fortified breakfast cereals, enriched rice/bread/pasta, whole wheat bread, and blackstrap molasses.

### **Amount of Iron in Foods and Drinks**

The amount of iron found in foods and drinks can be found on nutritional labels like the one below.

Click on the various foods and drinks to reveal the iron content.

From left to right:

1 bowl of iron fortified cereal contains 18mg of iron

1 hard boiled egg contains 1 mg of iron

3 ounces of roasted pork contains 1 mg of iron

3 ounces of roasted chicken contains 1 mg of iron

2 tablespoons of peanut butter contains 0.6 mg of iron

1 slice of whole wheat bread contains 1 mg of iron

½ cup of kidney beans contains 2 mg of iron

½ cup of boiled spinach contains 3 mg of iron

3 ounces of broiled sirloin steak contains 2.9 mg of iron

¼ cup of raisins contains 1 mg of iron

3 apricots contain .6 mg of iron

1 medium baked potato contains 1.8 mg of iron

¾ cup of prune juice contains 2.3 mg of iron

3 ounces of canned salmon with bones contains .7 mg of iron

18 cashews contains 2 mg of iron

1 ounce of pumpkin seeds contains .9 mg of iron

3 ounces of beef liver contains 5.8 mg of iron. While not a kid favorite, a very high source of iron.

8 ounces of milk contains 0 mg of iron.

### **Tips for enhancing iron absorption**

As discussed, the iron from plant sources is not absorbed in the body as well as the iron from animal sources. However, there are several ways we can improve the absorption of iron from plant sources.

Click on the tips to reveal some ways to help enhance iron absorption for your child.

*Tip 1* - Consume plant sources of iron with animal sources of iron, as this will improve absorption.

For example, try making chili with beans or chicken with rice and spinach.

*Tip 2* - Combine plant sources of iron with foods that are rich in Vitamin C, as Vitamin C aids in absorption of iron.

For example add strawberries to breakfast cereal, drink orange juice with beans and rice, and add tomatoes and spinach to a turkey sandwich on whole wheat bread.

*Tip 3* - Consider using cast iron skillets, pots, and other cookware for preparing foods.

Iron from the cookware can be released into the foods prepared in them and help with increasing the overall iron content of the diet.

#### *Vitamin C Food Sources*

Good Sources of Vitamin C include: Oranges, orange juice, strawberries, pineapple, pineapple juice, grapefruit, grapefruit juice, melon, kiwis, broccoli, tomatoes, tomato juice, and green/red bell peppers.

## What reduces iron absorption?

Similar to there being some foods in the diet that can enhance absorption of iron, there are some items that can decrease iron absorption. Click on the substances below to learn more.

From left to right:

Coffee and tea

Large amounts of milk

Polyphenols and phytates

Graphic: Iron absorption

### *Coffee and tea*

Coffee and tea contain substances that interfere with the absorption of iron in the body.

Avoid serving either tea or coffee with meals/snacks. Instead serve your child water or a 100% juice that is a good source of Vitamin C.

### *Large amounts of milk*

Drinking large amounts of milk (more than 3 cups per day) can increase the risk of iron deficiency in young children. Milk is a poor source of iron. If children drink too much milk, they may not have enough room to consume the iron rich foods they need in their diet.

### *Polyphenols and phytates*

There are several other substances such as phytates (found in bran, grains, and beans), oxalates (found in chocolate and spinach), and some polyphenols (found in cereals and legumes) that inhibit the absorption of non-heme iron.

## Tips for Preventing Iron Deficiency Anemia

Click on the tips (Tip 1 on the left and Tip 2 on the right) to learn how you can help prevent Anemia in your child.

*Tip 1* - Ensure that your child eats an balanced diet that contains foods rich in iron.

This diet should contain a variety of lean meats, seafood, whole grains, beans, nuts, fruits, and vegetables.

Aim to include at least one food that is a good source of iron with each meal and snack.

Iron rich snack idea: trail mix made with raisins, nuts, pumpkin seeds, and iron fortified breakfast cereal.

*Tip 2* - Purchase breakfast cereals that are fortified with iron.

Both hot and cold cereals can be fortified with iron.

Allow your child to pick a favorite breakfast cereal that is fortified with iron – good choice for both meals and snack time!

### **Tips for Preventing Iron Deficiency Anemia**

Click on the tips (Tip 3 on the left and Tip 4 on the right) to learn how you can help prevent Anemia in your child.

*Tip 3* - Add beans to soup, chili, spaghetti sauce, and casseroles to increase iron content of meals.

Meal idea that is high in iron: Top a baked potato with chili made with lean meat, beans, and tomatoes.

*Tip 4* - Allow your child to help select high iron foods.

If your child is a picky eater, consider allowing your child to help select which food high in iron he/she wants to eat at each meal and snack.

Allowing your child to be involved in the selection can help prevent meal time struggles.

### **Tips for Preventing Iron Deficiency Anemia**

Click on the tips (Tip 5 on the left) to learn how you can help prevent Anemia in your child.

*Tip 5* - Speak with your pediatrician or Registered Dietitian.

If you are concerned about the iron status of your child, discuss this with your Pediatrician.

Iron supplementation should only be done under the guidance of the pediatrician or a Registered Dietitian.

### **Build a High Iron Meal**

Click on a food/drink to see how to build a meal high in iron.

From left to right: Steak, baked potato, chicken, spinach, orange juice, and strawberries.

The large yellow plate is split into two sections, heme sources of iron on the left and non-heme sources of iron on the right.

The small orange plate with Vitamin C on it.

*Heme iron* - Our bodies can absorb iron from animal sources better than iron from plant sources.

*Non-heme iron* - Sources of non-heme iron include beans, spinach, fortified breakfast cereals, enriched rice, bread, and pasta.

*Vitamin C* helps to enhance the absorption of non-heme iron.

### **Select high iron snacks.**

From left to right: peanut butter on whole wheat bread, candy, dried apricots, chips, raisins, and a brownie.

The yellow plate represents iron rich snacks.

The blue plate represents iron poor snacks.

Click on the snacks above to see if they are iron rich or iron poor.

#### *Whole wheat bread*

Whole wheat bread with two tablespoons of peanut butter combine to provide 1.6mg of iron.

#### *Chips*

Chips are an unhealthy iron poor snack.

### *Candy*

Candy is an unhealthy sugary snack that is also iron poor.

### *Dried apricots*

Dried apricots are an iron rich snack that provides .6 mg per three apricots.

### *Raisins*

A variety of raisins can be a healthy iron rich snack that provides 1 mg for every 1/4 cup.

### *Brownies*

Brownies are a sugary snack that is unhealthy and iron poor.

## **Resources for Additional Information**

National Institutes of Health

Academy of Nutrition and Dietetics

Linus Pauling Institute – Micronutrient Information Center

## **Congratulations!**

You have successfully completed this course.

In this course you learned that iron is a nutrient that is essential for normal growth and development and for the transport of oxygen throughout the body. You learned the recommend amount of iron children should consume daily along with sources of iron in the diet. Finally, you learned tips for enhancing iron absorption and preventing the development of iron deficiency anemia.

We hope you will use the information learned in this course to help your child consume the recommended amount of iron on a daily basis.

Stop!

Follow the instructions on the next page to print your Certificate of Completion.