



## LESSON 6

## FOOD FOR THE PRESCHOOLER

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## IRON DEFICIENCY IN PRESCHOOLERS

We are concerned about the food habits of preschoolers as they often become the pattern for a lifetime of eating. But, they are also important in helping the child avoid nutritional deficiencies as he grows. A common nutritional problem of preschoolers in this country is iron deficiency which is usually the result of poor eating habits.

Iron is one of the components of blood. It plays an important role in the movement of oxygen to the body cells which is essential for maintaining normal growth, development, and health in the young child. Children with iron deficiency may look pale, have little energy, are often irritable, and have very short attention spans. For this reason, they may be misdiagnosed as having a learning disability.

Iron deficiency is seldom considered to be life-threatening. However, there is clear evidence that severe nutritional iron-deficiency anemia is detrimental to health. Growth rates in children and physical and mental performance have been shown to be altered in severe deficiency. Even mild iron deficiency appears to hamper mental performance and growth in preschool children. The effect of mild iron deficiency on learning behavior is an especially important area of concern in preschoolers. Attention and attention maintenance have been shown to improve in young children when iron intake has been deficient and is increased.

Growth is an important factor influencing an organism's need for dietary iron. It has been estimated that through infancy and childhood, the iron requirement for growth alone amounts to 30 mg for every 2.2 pound increase in body weight. The recommended dietary allowances for preschool-age children are shown below:

Age	Iron (mg)
1 - 3	15
4 - 6	10

You can see that the older child who is not growing as rapidly has a lower iron requirement.

Children are likely to develop iron deficiency if (1) they have not built up adequate iron stores during infancy or (2) they do not eat iron rich foods.

Diet appears to be a major factor in iron deficiency in the preschool-age group. Children in the first year of life are fed iron-fortified formulas and cereals or are given iron supplements. But as the infant grows into a toddler and preschooler, less attention is paid to the iron content of the diet. The child is taking small amounts of iron-rich foods, such as meat. Fruits, vegetables, dairy products, unfortified bakery products and cereals have little iron. One- to two-year-olds often take in only about 55 percent of the recommended iron intake. Mean intakes for three-to-five-year-olds appear to almost meet the recommended dietary allowance. Thus, it is infants in

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the second half of the first year of life and toddlers who appear to be at the greatest risk for developing iron deficiency.

The iron content of the average American diet tends to be low, approximately 6 mg of iron for each 1000 calories or kcal consumed. It is a challenge to supply needed iron on diets containing fewer than 2000 kcal. Do you remember that the energy requirement for one- to three-year-olds is just 1300 kcal. Thus, a child consuming an average diet that meets energy needs may not ingest adequate amounts of iron unless particular attention is paid to including iron-rich foods in the diet.

One way of helping to meet the iron needs of the preschooler is to continue the use of an iron-fortified cereal. Read the label to determine how much iron has been added.

A single serving of one food may supply the total amount needed of some nutrients (i.e., a glass of orange juice supplies enough vitamin C for a day; a carrot enough vitamin A) but that's not true for iron. Iron occurs in small amounts in foods, so it is necessary to select several in order to meet the need. The following table lists some of the better sources of iron.

Some preschoolers limit their consumption of meat because it is difficult to chew. If that's true for your child, try chopped or ground meat in soups, stews, casseroles, and meat sauces. Eggs, fish, peanut butter, and dry beans can also be used to supply protein. Hot dogs and luncheon meats are fine but try to limit them to once or twice a week as they are high in fat and salt.

Consumption of more milk than is needed to meet calcium needs may crowd out foods that contain iron. If your preschooler regularly consumes more than three 8-ounce glasses of milk a day, you may need to limit consumption.

Food Ready-to-Eat	Serving Size	Iron Content mg
Beans, dry	1/4 cup	1.25
Braunschweiger	1 oz.	1.7
Chicken leg	1.3 oz.	0.9
Egg	1	1.0
Ground beef	1 oz.	1.0
Liver, beef	1 oz.	2.5
Peanut butter	1 T.	0.3
Pork chop	1 oz.	1.1
Tuna	1 oz.	0.5
Broccoli	1/3 cup	0.4
Raisins	1 1/2 T.	0.5
Spinach	1/3 cup	1.3
Watermelon	4X8" wedge	2.1
Biscuit, enr. flour	1	0.2
Corn flakes, fortified	1/2 cup	0.3
Macaroni, enr.	1/2 cup	0.65
Oatmeal	1/2 cup	0.7
White bread, enr.	1 slice	0.6
Whole wheat bread	1 slice	0.8
Custard, baked	1/2 cup	0.5

If you think your child needs supplemental iron, discuss it with the physician. He can determine whether the child is anemic and, if so, can prescribe the appropriate supplement.

### SNACK TIME

Snacks selected from the meat group can increase the iron and protein intake of the diet. Leftover cooked meats may be cubed and served as snacks. Skewer a few cubes of meat with fruit or vegetable pieces for a different look. Slice the meat for sandwiches or grind or chop for a salad or spread. Save a chicken wing or drumstick for snack time.

Eggs can be served in several ways. Hard cook an extra egg at breakfast to eat later as a snack. Scramble eggs with cheese or other ingredients (leftover meats, chopped vegetables, etc.).

Peanut butter is a good choice. Peanuts and other nuts (and popcorn) are not good choices for the small child. These foods need to be thoroughly chewed before swallowing

to avoid choking and children don't always remember to do that.

Braunschweiger and liverwurst would add iron to the diet.

## KIDS IN THE KITCHEN

CUTTING AND GRATING - Five year-olds  
Cutting

The five-year-old can use a table knife for cutting soft foods such as cheese, hard-cooked eggs, and bananas.

Show the child how to hold the knife so fingers are not under the blade. Review safety rules for working with knives.

Grating

Use a four-sided grater that can be held firmly in place. Show the child how to hold food to keep fingers away from the sharp edges.

The child can practice with carrots and other raw fruits and vegetables for salads, or for cooked mixtures such as potato pancakes.

## MEALTIME MANNERS

How do you expect your child to behave at mealtime? Here's a list of some behaviors that might be on your list by the time the child is ready to go to school.

Be on time for meals.

Come to the table with clean hands and face.

Be able to handle a glass, spoon, and fork.

Can feed self without making a mess--on face, lap, table, or floor.

Eat (at least try) all of the foods served.

Chew with mouth closed.

Take bites that are small enough to chew with mouth closed.

Empty mouth before talking.

Keep food on the bowl or plate, not on the table or floor.

Sit up straight.

Keep elbows off table.

Is this the behavior the child sees? Remember, children are great imitators.

## FAMILY ACTIVITIES

GROCERY SHOPPING

When food shopping, take advantage of the time to start teaching children decision-making skills. Here are some ideas for the grocery store.

Some questions help children learn simple classifications such as colors and food groups.

- What orange vegetables are there?

- What fresh fruits are there?

Other questions help children learn how foods are packaged.

- Can you find fresh peas, canned peas, frozen peas, and dried peas?

- Can you find fresh orange juice, canned orange juice, and frozen orange juice?

- Can you find plain macaroni noodles, packaged macaroni mixes, and frozen macaroni dinners?

Some questions help children learn standards or ways to check for quality.

- Does the vegetable/fruit have brown spots?

- Does the vegetable/fruit have soft, bruised spots?

- What does it smell like?

- Are cans dented? or bulging?

- Are boxes or packages broken?

Let your preschooler make decisions, but guide the choice.

- We need a green vegetable; which one should we buy? Will you pick it out?

- What kind of fruit should we buy?

- Which loaf of bread should we buy for sandwiches?

## IN CONCLUSION

This is the end of the six lesson series, Food For the Preschooler. Your participation in this home-study series indicates that you agree that nourishing a preschooler is a challenging and important task, deserving of our very best efforts. We trust that this information has been and will

be helpful to you as you help your preschooler develop good eating habits.

This is just one of many educational programs available through the Virginia Cooperative Extension Service. If you would like information about other topics relating to the home and family, please contact your local office.

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