



MIDDLEBORO PEDIATRICS

2 LAKEVILLE BUSINESS PARK, LAKEVILLE, MASSACHUSETTS 02347 TEL (508) 947-0630 FAX (508) 947-0639

NEAL G. BORNSTEIN, MD, FAAP MARTIN A. GROSS, MD, FAAP HILARY A. WELLAND, MD, FAAP AARON D. BORNSTEIN, MD, FAAP
FIONA PAUL, RN, CPNP ELLEN CARTY CORDRY, RN, FNP AMY HATCH, RN, CPNP

HIGH FIBER DIET

WHAT IS FIBER?

In simplest terms, fiber is part of food that you don't digest. It is defined as the part of the cell wall that gives a plant its structure and rigidity and resists digestion in the gastrointestinal tract. Only foods from plants contain fiber. These foods include fruits, vegetables, cereals, nuts, seeds, peas and beans.

BENEFITS OF FIBER

Fiber is not nourishing in the usual sense of the word. Its benefits to the body are related to its effect on the consistency and bulk of the stool and the time it takes to go through the intestines. Since fiber holds water, stools produced by a high-fiber diet tend to be bulkier and softer and pass more quickly and easily through the intestines. This, in turn, means less strain and pressure on the bowel and blood vessels. A high-fiber diet has long been an established method of relieving and preventing constipation. More recent scientific data also suggests that fiber may have a protective effect against the development of some degenerative diseases frequently seen in highly industrialized Western countries, including diverticulitis, colon cancer, cardiovascular disease, and diabetes. Remember that the entire family can benefit from these dietary modifications.

ADDING FIBER TO THE DIET

Clearly, some fiber in the diet is desirable for optimal digestive function for everyone. Many studies suggest that a safe and desirable intake of dietary fiber for adults is from 25-45 grams (gm.) per day. The ideal amount of fiber needed by children being treated for constipation has yet to be determined. A general guideline of approximately 1/2 to 1/3 gram of dietary fiber per pound of body weight may be used. Remember that these are suggested amounts and may vary with individuals.

Dietary fiber guidelines for children

Age	Grams of fiber recommended each day
*2-6 years	10-20
6-12	20-30
12+	30-45

*Because overuse of fiber can lead to particular problems with mineral absorption, consult your doctor about increasing dietary fiber in a child under 2 years of age.

We recommend that approximately 1/3 of the total dietary fiber intake come from bran. Bran is the

outermost layer of the wheat kernel and is one of the richest and least expensive sources of natural food fiber.

The Chart below may be used as a guideline for the amount of bran your child should try to eat daily until normal bowel movements are maintained. At that time, bran may slowly be decreased unless symptoms reoccur.

Age	Tablespoons per day
2-6yr	1
6-12yrs	2-3
12+yrs	4-5

GENERAL GUIDELINES

- Use whole-grain cereals such as bran, bran flakes, shredded wheat. Use whole-grain bread products such as cracked wheat and rye.
- Use potatoes, brown or wild rice, whole-wheat pasta and other cooked whole cereal grains rather than refined products.
- Include two salads daily, emphasizing raw fruits and vegetables.
- Eat whole fruits including skins.
- Include stewed or dried fruits and juices such as stewed prunes, prune juice, apricots, figs, raisins, and nuts.

SOME CAUTIONS ABOUT INCREASING FIBER

If your child's diet is presently low in fiber, you may find it easier to gradually introduce more high-fiber foods. Here are a few obstacles to be aware of:

- Flatulence (gas), abdominal distention, bloating, and occasionally diarrhea may result from an overzealous introduction of fiber to the diet. These discomforts can be minimized by starting with small amounts of fiber at each meal and slowly increasing the quantity to the recommended amounts until normal bowel movements are obtained.
- Stomach rumblings may occur and are caused by changes in the material passing through the intestines.
- Bran should never be eaten dry because it draws water and absorbs fluids. Drinking plenty of water or fruit juices each day is essential for maintaining proper bowel functioning.

FIBER CONTENT OF SELECTED FOODS

The following table may help you obtain the recommended amount of dietary fiber in your child's diet. Many new high-fiber foods are coming on the market each week. Watch for them! Check food labels

for actual grams of dietary fiber per serving.

BREADS AND CRACKERS

	SERVING SIZE	DIETARY FIBER (GRAMS)
Fiber rich bread	1 slice	4.3
Seven grain bread	1 slice	3.2
High bran "health bread"	1 slice	3
Cornbread	1 square (2 ½")	3
100% whole wheat bread	1 slice	2.4
Cracked wheat bread	1 slice	2.1
Whole wheat crackers	6	2
Rye crackers	3	2
Rye bread	1 slice	1.2
White bread	1 slice	0.8

CEREALS

	SERVING SIZE	DIETARY FIBER (GRAMS)
Fiber One	½ cup	12
100% bran cereal	0.5	10
Corn Bran	1 cup	8
Cracklin' Oat Bran	1 cup	8
Fruit n' Fiber	1 cup	8
Granola	1 cup	7
Shredded Wheat & Bran	1 cup	6
Raisin Squares	1 cup	6
Bran Muffin Crisp	1 cup	6
Raisin Nut Bran	1 cup	6
Grape Nuts	1 cup	5.3
40% Bran Flakes	1 cup	5
Most	1 cup	5
Raisin Bran	1 cup	4

Oatmeal, cooked	¾ cup	3
Shredded Wheat	1 biscuit	3
Wheat Chex	1 cup	3
Ralston, cooked	¾ cup	2.7
Wheaties	1 cup	2
Cheerios	1 cup	1.7

FLOUR

	SERVING SIZE	DIETARY FIBER (GRAMS)
Bran (millers)	1 cup	48
Cornmeal, stone ground	1 cup	16.5
100% whole wheat	1 cup	14.4
100% Rye	1 cup	14.4
Rolled Oats	1 cup	12
All purpose white flour	1 cup	1.6

FRUITS (unless otherwise indicated)

	SERVING SIZE	DIETARY FIBER (GRAMS)
Figs, dried	2	8
Apricots, dried	8	7.8
Dates, dried	10	7
Raisins	½ cup	5.4
Prunes, dried	4	5.2
Orange	1 medium	4.5
Banana	1 medium	4
Apple, with peel	1 medium	3.3
Strawberries	1 cup	3.3
Pear	1 medium	3.1
Cantaloupe	¼ medium	2.5
Plums	2	2.5
Apricots	3	2.4

NUTS AND SEEDS

	SERVING SIZE	DIETARY FIBER (GRAMS)
Brazil nuts	10	5.5
Peanuts	½ cup	5.5
Almonds	10	3.6
Soy nuts	2 tbsp	3
Sunflower seeds	2 tbsp	3
Corn nuts	2 tbsp	3
Walnuts	½ cup	3
Peanut butter	2 tbsp	2.3
Poppy seeds	2 tbsp	2
Sesame seeds	2 tbsp	2

VEGETABLES (fresh /raw, unless otherwise indicated)

	SERVING SIZE	DIETARY FIBER (GRAMS)
Baked beans	1 cup	18.6
Peas	1 cup	11.3
Corn	1 cup	9.3
Broccoli	2 spears	7
Yams, baked with skin	1 medium	6.8
Brussel sprouts	1 cup	6.5
Green Beans	1 cup	3.5
Spinach	1 cup	3.5
Carrots	1 cup	3.2
Potatoes, baked w/skin	1 medium	3
Tomato	1 medium	3
Cauliflower	1 cup	2.5
Cabbage, shredded	1 cup	1.9
Lettuce	1 cup	0.8
Celery	1 stalk	0.7

MISCELLANEOUS

	SERVING SIZE	DIETARY FIBER (GRAMS)
Kidney beans	1 cup	20
Chili	1 cup	17
Macaroni and pasta (whole wheat, cooked)	1 cup	5.7
Brown rice	1 cup	4
Coconut, shredded	2 tbsp	3
Popcorn, popped	1 cup	1

HIGH-FIBER COOKING TIPS

- experiment with whole grain such as brown rice, bulgar, barley and whole wheat pasta. Use these in soups, casseroles, etc.
- Use dried beans, peas and lentils in main dishes, soups and salads.
- Use high-fiber breads for sandwiches (see table 5).
- Make homemade soups from dried peas, barley and lots of vegetables.
- Prepare desserts like cookies, cakes, pies and bars using dried fruits, nuts or rolled oats whenever possible.
- Have raw vegetables cut up for snacking. Don't forget the dip!
- Try baked or fried potatoes skins - kids love them.
- Invest in a whole grain or high fiber cookbook.

BRIGHT IDEAS FOR BRAN

- Use raw flour as part of white or wheat flour in recipes.
- Use part bran flour when coating chicken or fish for frying.
- Make pancakes from "scratch" using bran as part of the flour.
- Mix 1 tbsp of bran into a mixture of egg and milk; dip whole wheat bread in this and fry for french toast.
- Add bran flour to cookies, bars, muffins and yeast breads as part of white or wheat flour used in your favorite recipes.
- Add bran to cooked cereal, casseroles, thick soups, stew chili and sloppy joes.
- Use bran as part of flour for crusts and toppings such as on apple crisp or fruit pies.
- Extend ground meats used for meatloaves, meatballs and patties by adding up to $\frac{3}{4}$ cup 100% bran cereal for each pound of ground meat increase liquid ingredients by 2 or more tbsp; soften cereal in the liquid ingredients for 2 minutes before adding to ground meat.
- Use bran crackers for snacks; spread with peanut butter, jam, honey or frosting for better taste acceptance.
- Use your imagination and start with small amounts! Too much bran will make a recipe dry and crumbly and the distinctive bran flavor may become overpowering.

BROWN-BAGGING

- Increase fiber in your child's lunches by using some of these ideas.

SANDWICHES

- Use whole grain breads, crackers, rolls and muffins with a favorite filling. Whole wheat pocket bread can add variety, too.

FRUITS AND VEGETABLES

- green pepper strips
- celery (stuffed with chunky peanut butter and raisins)
- pickles
- cucumber slices
- cherry tomatoes
- fresh oranges, quartered
- carrot sticks
- cut-up fruit in season (include a toothpick)

SPECIAL TREATS

- box of raisins
- popcorn
- granola bars (purchased or homemade)
- sunflower seeds
- graham crackers
- oatmeal raisin cookies

BEVERAGES

- A small can or carton of fruit juice can be frozen ahead of time and packed in a lunch. It will be defrosted when needed.