



GUIDE



Nutritional guidelines to help increase your fibre intake



The Ottawa | L'Hôpital
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Disclaimer

This is general information developed by The Ottawa Hospital. It is not intended to replace the advice of a qualified health-care provider. Please consult your own personal physician who will be able to determine if this information is appropriate for your specific situation.

Name: _____

Date: _____

Dietitian: _____

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Introduction

Dietary fibre is the non-digestible remnant of plant material that resist to decomposition by human digestive enzymes. The various simple sugars that make up fibre are linked together in an unusual way, and that's why humans can't digest and absorb them.

The benefits attributed to fibre include control of both constipation and diarrhea, lower blood cholesterol levels, lower blood sugar levels, weight control, treatment of diverticular disease and reduced risk of certain diseases such as colon and breast cancer.

There are two types of dietary fibre: **soluble** and **insoluble**. They are present in varying proportions in different plant sources and have different properties and functions in the body. The amount can vary with the ripeness of the food, where it was grown, how long it was stored, and how it was processed, but it is not affected by cooking. Since various types of fibres work differently, it is important to know how they work to avoid even greater complications.

Types of fibre

Soluble fibre helps to:

- 1) increase viscosity of stomach contents and delay gastric emptying. It helps us feel full!
- 2) slow food passage through small intestine (where they are fermented and degraded by bacteria and yeast which releases gas).

Soluble fibres dissolve in water and include **pectins** and **gums**. They are found in such foods as legumes (peas, beans and lentils), oats, barley, tapioca, flax, psyllium and many fruits and vegetables.

The highest source of soluble fibre of any grain is psyllium. Psyllium, an exclusive grain grown in India, ounce for ounce, provides eight times more soluble fibre than oat bran. It is an ingredient in Metamucil®.

Research shows that other fibres such as the gel-forming pectin of fruits and the guar gum of legumes reduce blood cholesterol levels by binding bile acids which would otherwise be absorbed into the body and converted into cholesterol.

They have also been shown to slow the digestion of carbohydrates and the entry of sugar into the bloodstream, thus being of special interest in the management of diabetes.

But remember that amounts can vary. For example, an unripened apple contains only a small amount of pectin, a ripened apple has much, while a mealy, overripe one has no pectin at all because of breakdown by the apple's own enzymes.

Insoluble fibre helps to:

- 1) increase bulk in the intestine (where it absorbs/binds substances and fluids)
- 2) promote bowel regularity (forms soft and bulky stools which move smoothly and swiftly)

Insoluble fibres do not dissolve in water, but possess considerable water-retaining capacity. They include **cellulose**,

hemicellulose and **lignin**. They are found mainly in cereals and grains, such as wheat, rye, but also in fruits and vegetables.

Wheat bran, for example, is one food which is rich in cellulose and lignin. It speeds the transit of food through the intestines and also absorbs water. The result is more frequent and softer bowel movements which ease constipation. But wheat bran can also absorb water and lessen diarrhea.

The particle size of insoluble fibres also have an influence. Large particles from coarsely ground fibres are much more effective in stimulating laxation than finely ground fibre, which is commonly found in commercial fibre supplements and foods “enriched” with fibre.

Again remember that amounts vary. With vegetables like cauliflower, the more mature or woody they become, the more lignin is present in their stalks.

How much do I need?

How much dietary fibre we need is not easily answered though there is agreement that most people need more than they currently get. Canada’s Food Guide to Healthy Eating recommends a variety of foods from the four food groups. Health professionals have suggested a daily intake of 30 grams.

Any food item that contains at least 2 grams of fibre is a “source of fibre”. Excellent sources contain at least 6 grams of dietary fibre per serving.

REMEMBER... GET MORE FIBRE FROM FOOD.

Increase fibre in your diet gradually to avoid flatulence.

How do I increase my intake?

- Keep some cans of cooked beans on hand or cook a package of dried beans and freeze in usable quantities. Toss into salads, spaghetti sauce or casseroles.
- Wheat bran, wheat germ or oat bran can be used to add fibre to cereal, pancakes, muffins, quick breads or casseroles (chili, sloppy Joes, meatloaf).
- Have a whole grain cereal every day (morning, lunch or bedtime snack) or mix a high fibre cereal (at least five grams per serving) with one that is not as high in fibre.
- Choose whole grain breads, muffins and even pizza dough, sub buns, bagels, pitas and tortillas. **A dark colour isn't enough: compare the fibre values on the labels.**
- Opt for brown rice. Look for crackers with at least two grams of fibre per ounce.
- Don't underestimate corn, including popcorn!
- Serve hummus, made from chickpeas, instead of sour cream dips.
- Incorporate whole wheat flour in your baking, as well as bran, nuts, seeds and coconut.
- Snack time! Have a whole fresh fruit rather than its juice.
- Eat more fruits and vegetables—unpeeled whenever possible. Be lazy! Don't peel these potatoes, just scrub them well. Don't throw out the broccoli stalks. Just remove the thickest skin at the bottom.
- Replace traditional meats, fish and poultry with legumes, such as peas (pea soup), beans (baked beans) and lentils (lentil stew).
- Eat more nuts, seeds and dried fruits. Add them to desserts, salads or casseroles.

- Top off yogurt, pudding, ice cream or cereal with chunks of your favourite fresh fruit.
- Add bran cereals to sandwich spreads, ground meat mixtures, and coating preparations for chicken and fish. Sprinkle a little over ice cream, yogurt and puddings.
- Instead of iceberg lettuce, choose romaine or spinach for a salad.
- When thinking sandwich spreads, think of fibre. Add nuts, celery, bran cereals, carrots and raisins to traditional egg, tuna and chicken salad mixtures. And don't forget that perennial fibre filler—peanut butter.
- TRY SOME NEW HIGH FIBRE RECIPES.

Eating at regular times, increasing your water intake—hot and cold (at least eight glasses a day) and maintaining an appropriate level of physical activity are also key elements to healthy bowel function.

Fibre content of common foods

| Food | Portion | Amount of Fibre (grams) | | |
|--------------------|---------|----------------------------|-----------|-------|
| | | Soluble | Insoluble | Total |
| Barley | 125 ml | 8.10 | 7.50 | 15.60 |
| Psyllium | 45 ml | 7.15 | 1.85 | 9.0 |
| Bran | 28 g | 1.45 | 7.27 | 8.72 |
| Black-eyed peas | 125 ml | .88 | 7.33 | 8.21 |
| Almonds, roasted | 125 ml | .78 | 7.17 | 7.95 |
| Prunes, canned | 125 ml | 3.94 | 2.94 | 6.88 |
| Flour, whole wheat | 125 ml | 1.10 | 5.45 | 6.56 |
| Flour, rye | 125 ml | 1.76 | 4.67 | 6.42 |
| Peanuts, roasted | 125 ml | 2.38 | 3.96 | 6.34 |
| Beans, kidney | 125 ml | 1.38 | 4.10 | 5.48 |
| Rice, brown | 125 ml | .37 | 4.90 | 5.27 |
| Lentils | 125 ml | .56 | 4.65 | 5.22 |
| Beans, brown | 125 ml | 1.04 | 3.60 | 4.64 |
| Pear, with skin | 1 med. | 1.00 | 3.32 | 4.32 |
| Beans, Lima | 125 ml | .85 | 3.57 | 4.25 |
| Oat bran | 28 g | 2.04 | 2.13 | 4.08 |
| Wheat germ | 28 g | .45 | 3.60 | 4.05 |
| Artichokes | 1 med. | 2.20 | 1.76 | 3.96 |
| Blackberries | 125 ml | .46 | 3.26 | 3.72 |
| Grapefruit | 1 med. | 2.21 | 1.40 | 3.61 |
| Cornmeal | 125 ml | .04 | 3.55 | 3.59 |
| Peas, green | 125 ml | .48 | 3.04 | 3.52 |
| Brussel sprouts | 125 ml | .41 | 2.09 | 3.51 |
| Oat flakes | 28 g | 1.56 | 1.87 | 3.39 |
| Raspberries | 125 ml | .25 | 2.90 | 3.15 |
| Orange | 1 med. | 1.90 | 1.19 | 3.14 |

| Food | Portion | Amount of Fibre (grams) | | |
|---------------------|---------|----------------------------|-----------|-------|
| | | Soluble | Insoluble | Total |
| Corn | 125 ml | 1.31 | 1.72 | 3.03 |
| Squash, acorn | 125 ml | 1.64 | 1.23 | 2.87 |
| Macaroni, w/w | 28 g | .69 | 2.12 | 2.81 |
| Apple, w skin | 1 med. | .97 | 1.79 | 2.76 |
| Bread, bran | 1 slice | .58 | 2.08 | 2.66 |
| Shredded Wheat | 28 g | .45 | 2.18 | 2.64 |
| Broccoli | 125 ml | 1.15 | 1.42 | 2.58 |
| Oatmeal | 28 g | 1.00 | 1.50 | 2.51 |
| Carrots | 125 ml | .94 | 1.48 | 2.42 |
| Cauliflower | 125 ml | .77 | 1.54 | 2.30 |
| Banana | 1 med. | .64 | 1.55 | 2.19 |
| Bread, cracked w | 1 slice | .46 | 1.65 | 2.11 |
| Bread, whole wh | 1 slice | .46 | 1.65 | 2.11 |
| Spinach | 125 ml | .47 | 1.61 | 2.07 |
| Potato, w skin | 125 ml | .70 | .78 | 1.95 |
| Strawberries | 125 ml | .52 | 1.42 | 1.94 |
| Watermelon | 1 slice | .96 | .96 | 1.93 |
| Bread, multigrain | 1 slice | .42 | 1.50 | 1.92 |
| Beans, green/string | 1 slice | .46 | 1.43 | 1.89 |
| Beans, yellow/wax | 1 slice | .46 | 1.43 | 1.89 |
| Apricots | 125 ml | .63 | 1.14 | 1.77 |
| Bread, pumpernickle | 1 slice | .36 | 1.35 | 1.72 |
| Bread, rye | 1 slice | .36 | 1.35 | 1.72 |
| Noodles, egg | 28 g | .99 | .64 | 1.63 |
| Granola | 28 g | .45 | 1.05 | 1.50 |
| Cabbage | 125 ml | .56 | .95 | 1.50 |
| Asparagus | 125 ml | .31 | 1.17 | 1.48 |
| Rice, white | 125 ml | .31 | 1.11 | 1.42 |

| Food | Portion | Amount of Fibre (grams) | | |
|---------------------|----------|----------------------------|-----------|-------|
| | | Soluble | Insoluble | Total |
| Spaghetti | 28 g | .74 | .55 | 1.29 |
| Onions | 125 ml | .64 | .64 | 1.28 |
| Zucchini | 125 ml | .27 | .99 | 1.26 |
| Macaroni, white | 28 g | .72 | .53 | 1.25 |
| Bread, corn | 1 slice | .12 | 1.12 | 1.24 |
| Cauliflower, raw | 125 ml | .60 | .69 | 1.20 |
| Tomato, raw | 125 ml | .45 | .72 | 1.17 |
| Cantaloupe | 1 slice | .64 | .43 | 1.07 |
| Plum | 1 med. | .66 | .33 | .99 |
| Eggplant | 125 ml | .02 | .93 | .96 |
| Celery, raw | 125 ml | .42 | .54 | .94 |
| Cherries | 125 ml | .36 | .58 | .94 |
| Pineapple | 125 ml | .24 | .69 | .93 |
| Cabbage, green, raw | 125 ml | .27 | .46 | .73 |
| Bread, French | 1 slice | .42 | .25 | .67 |
| Grapes | 125 ml | .17 | .39 | .56 |
| Popcorn | 125 ml | .30 | .23 | .53 |
| Cucumber | 125 ml | .10 | .42 | .52 |
| Bread, white | 1 slice | .24 | .25 | .50 |
| Corn flakes | 28 g | .10 | .35 | .45 |
| Puffed rice | 28 g | .11 | .26 | .37 |
| Cracker, Graham | 1 square | .03 | .22 | .25 |
| Lettuce, iceberg | 125 ml | .06 | .19 | .24 |
| Cracker, saltine | 1 | .02 | .06 | .08 |
| Ground hamburger | 100 g | .00 | .00 | .00 |
| Steak, tenderloin | 100 g | .00 | .00 | .00 |
| Chicken, roasted | 100 g | .00 | .00 | .00 |
| Milk | 250 ml | .00 | .00 | .00 |