

Dietary fibre

Modified with permission from a resource produced by the Diabetes Centre, The Queen Elizabeth Hospital, Woodville, SA.

What is fibre?

Dietary fibre is the part of plant foods that cannot be digested in the small intestine. It is found in the skins, seeds and stalks of fruit and vegetables, and in legumes, pulses, nuts and the bran or husk of cereal grains. There is no dietary fibre in animal foods.

Types of fibre

There are two main types of fibre in foods: soluble and insoluble fibre. Resistant starch is a starch that acts like dietary fibre. It is important to have a variety of foods in your diet so you eat enough fibre.

- **Soluble fibre.** Soluble fibre forms a 'gel' solution in the gut, which slows down digestion and absorption of food. It can also help to lower blood cholesterol and may assist in controlling blood glucose levels if you have diabetes. Good sources include fruit, vegetables, legumes, oats and oat bran, barley and barley bran, rice bran, psyllium husks, nuts and seeds.
- **Insoluble fibre.** Insoluble fibre helps regulate bowel function by absorbing water in the gut, forming softer bulkier stools and thus assisting in preventing constipation. Good sources include wheat bran, wheat based breakfast cereals, wholegrain breads and cereals, wholemeal pasta, brown rice, fruit and vegetables.
- **Resistant starch.** About 10% of the starch in food resists digestion in the small intestine and reaches the large bowel where it acts like dietary fibre in improving bowel health. Here it stimulates the growth of 'good' bacteria, which keeps the cells of the bowel healthy and may help prevent bowel cancer. It may also assist in controlling blood glucose levels if you have diabetes. Good sources include wholegrain, wholemeal and high fibre white breads, breakfast cereals such as muesli, oats and those that are bran-based, wholegrain and/or contain added fruit, lentils and other legumes, barley, rice, pasta, cracked wheat, cold cooked potato, green bananas, custard apples, peas and corn.

Why is fibre so important?

Fibre is important for good health and is effective in treating and preventing the disorders listed below.

- **Constipation.** Dietary fibre, in particular insoluble fibre, is effective in preventing and treating constipation. Insoluble fibre acts as a laxative by softening and 'bulking' the stools. Remember to drink adequate fluid (6 to 8 glasses each day) and exercise regularly for healthy bowel function.
- **Diverticular disease.** Diverticulae are sacs or pouches that occur at weak points in the digestive tract. They sometimes become inflamed, resulting in diverticulitis. The biggest cause of diverticular disease is a low fibre diet, and an increase in dietary fibre usually helps improve the condition. Consult your doctor or dietitian for more information.
- **Diabetes.** Most starches are digested to glucose in the small intestine. People with

This handout provides information about fibre in the diet and some hints on increasing your fibre intake.

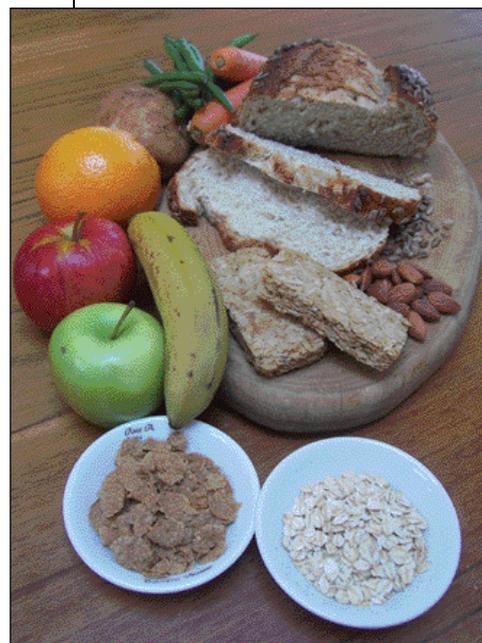


Figure. Cereal foods (especially wholegrain types), fruits and vegetables are good sources of dietary fibre.



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diabetes will have better control over their blood glucose levels when these starches are digested slowly. Soluble fibre in food slows down the digestion of starch and, therefore, the release of glucose into the blood stream.

- **Weight control.** Fibre can help in weight management. A high fibre diet provides bulk and a feeling of fullness. Soluble fibre can slow down the digestion of your meal, making you feel more satisfied and less likely to eat more.
- **Cholesterol.** Soluble fibre has been shown to reduce the levels of cholesterol in the blood.

How much fibre?

The recommended intake of dietary fibre for adults is about 30 g each day. The table shows the fibre content of some common foods.

Hints for increasing fibre intake

- Use wholemeal flour when baking. For cakes, muffins, biscuits and pastries, use half wholemeal and half white flour, or add 1/3 cup oat bran to one cup of white flour (you will need to add a little extra liquid). You can also include dried or fresh fruit and vegetables such as grated carrots.
- Add extra vegetables when cooking. Substitute some of the meat in stews or casseroles with cooked lentils, split peas, kidney beans or chickpeas, and add extra vegetables. When making spaghetti bolognaise substitute half of the lean mince with kidney beans or lentils. Include grated vegetables (e.g. carrot, zucchini) and cracked wheat in homemade rissoles or hamburger patties.
- Use more oats when cooking. Use rolled oats ('quick cook') to bind rissoles or meat loaf. Use processed oat bran or mashed beans as a thickener in soups or casseroles.
- Make high fibre salads. Base salads on beans, rice, pasta, cracked wheat or barley mixed with vegetables.
- Don't peel fruit and vegetables; eat the skins where possible. Leave skin on potatoes.
- Eat whole fruit rather than drink fruit juice. There is no fibre in fruit juice.
- When shopping, choose products with the highest amount of dietary fibre per 100 g (aim for more than 5 g per 100 g).

Important facts

- Cooked, frozen and canned fruits and vegetables are valuable sources of fibre. Cooking foods containing fibre only softens the fibre; it does not destroy it.
- Drink plenty of fluid, preferably water, each day. About 2 litres or 8 glasses are recommended.
- Increase your fibre intake gradually, distributing it evenly throughout the day. Increasing fibre intake suddenly may lead to gastrointestinal discomfort.
- Exercise regularly and maintain a healthy weight.

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Table. Dietary fibre content of some foods*

Food	Serve size	Fibre (grams)
Bread		
Wholemeal	2 slices	4.0
Mixed grain	2 slices	3.0
Wholemeal with grain	2 slices	6.0
White high fibre	2 slices	2.4
White	2 slices	1.5
Dark rye	1 slices	5.0
Cereals		
Allbran	1/2 cup	9.5
Muesli	1/2 cup	6.0
Weetbix, Vitabrits	2 biscuits	3.0-3.5
Rolled oats/porridge	1 cup cooked	3.4
White pasta	1 cup boiled	3.0
Wholemeal pasta	1 cup boiled	8.0
White rice	1 cup boiled	1.2
Brown rice	1 cup boiled	2.4
Nuts and seeds†		
Almonds	50 g	4.5
Peanuts	50 g	4.0
Vegetables		
Broccoli	1 floret	2.0
Carrot	1/2 cup	2.4
Peas	1/2 cup	5.4
Potato with skin	100 g	2.3
Baked beans	1 cup	10.6
3-bean mix	1 cup	11.2
Fruit		
Apple with skin	1 medium	3.0
Banana	1 medium	3.0
Orange	1 medium	3.2
Sultanas	50 g	2.0

* Figures taken from: Food Standard Australia New Zealand *Nutritional values of Australian foods*, Canberra; Commonwealth of Australia; 1991 (out of print); Stanton R. *Find out about fibre*, St Leonards: Allen and Unwin; 1998 (out of print); and Borushek A. *Pocket calorie, fat and carbohydrate counter*, 2007 ed, Perth: Dietclub; 2007.

† As nuts and seeds are high in fat, limit their intake if you are trying to lose weight.



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