



## rough and regular

Fibre is a vital part of the digestive process, but are you eating enough? Dietitian/nutritionist Vanessa Jones shows how, by making small changes in what you eat, you can easily go from a low-fibre diet to one that is high in fibre.

**Y**our mother describes it as 'roughage', the kids call it 'those yucky grainy bits' and your partner scoffs and labels it 'horse feed'. The word 'fibre' often conjures up thoughts of scratchy, hard bits found in tasteless food which has one purpose – to keep you regular. But fibre is often invisible, does a lot more than keep the bowels moving, and is definitely not confined to food stored in chaff bags in the stables.

Dietary fibre – not a nutrient but still a vital part of our diet – is only found in foods of plant origin such as breads, cereal products, fruits, vegetables, legumes, seeds and nuts. The key feature of fibre is its ability to pass through the stomach and small intestine undigested and reach the large intestine virtually unchanged. Most other food components and nutrients we eat are digested and used in other parts of the body before this stage.

However, fibre is not 'indigestible'. In the large intestine, some components of fibre are broken down by millions of 'friendly' bacteria. As part of this process, the bacteria multiply by the million and produce special acids. Once they die, their bodies add bulk to our faeces and are excreted. This is a natural and desirable process. In fact, one of the acids produced (butyric acid) has been shown to have cancer-

preventing properties within the bowel.

Just as there are different types of vitamins, there are also different types of fibre, 'soluble' or 'insoluble', both playing a different role in the body.

### SOLUBLE FIBRE

This type of fibre tends to be less visible and less famous for its benefits than insoluble fibre. Soluble forms of fibre include pectin (found mainly in fruits and citrus peel), gums (present in oats, oat bran, legumes such as kidney beans, baked beans and lentils, and many processed foods where gum has been used as a food additive), and mucilages (found in some seeds and seaweed). Psyllium seed husk, found in many commercial fibre laxatives, is an excellent form of soluble fibre.

Soluble fibres either dissolve or swell with water in the gut to form a thick gel, which plays an important role in slowing down the rate at which sugar from food is absorbed into the bloodstream. It is therefore beneficial to people with diabetes who need to closely control their blood sugar levels.

The soluble fibre found in oats and oat bran has been shown to bring blood cholesterol levels down. When we eat oats, the soluble fibre they contain forms a gel. Bile acid (which is naturally rich in cholesterol) is secreted into the intestine to help break down

and digest any fat eaten. The oat fibre gel binds to bile acids and drags them out of the body in faeces. Removing bile acids rich in cholesterol from the body means that some cholesterol in the bloodstream must be diverted to the liver to make more bile acids. And so the blood cholesterol-lowering effect in the bloodstream begins.

### INSOLUBLE FIBRE

This type of fibre tends to be better known as it is more visible and often adds texture to our food. Insoluble forms of fibre include cellulose (present in all edible food plants), hemicelluloses (found especially in cereal bran) and lignin (found mainly in cereals and woody vegetables). Best sources include cereal bran (wheat, corn and rice bran), wholegrain breads and cereals, dried beans, peas, nuts, seeds and the skins of fruit and vegetables.

Insoluble fibre has a sponge-like effect, soaking up water and swelling in size. This action produces a feeling of fullness which can prevent overeating and, in turn, help in losing weight. This process also adds bulk to stools, making waste matter heavier and speeding it through the large intestine. Having softer faeces is of value for preventing or treating disorders such as constipation, haemorrhoids, hiatus hernia and diverticular disease.

## RESISTANT STARCH

Most starches are digested and absorbed into the body through the small intestine, but some resist digestion and pass through to the large intestine where they act just like fibre. This type of starch, called 'resistant starch', has a mild laxative effect and increases both the level of butyric acid in the large intestine and 'friendly' bacteria in the gut.

A relatively new ingredient called Hi-maize™, from a special type of Australian maize (corn), is a rich source of resistant starch. Referred to as 'invisible fibre' (you can't see it or taste it), this innovative ingredient is a hidden blessing for all of those white-bread lovers who still value their health.

Hi-maize™, which was developed by Goodman Fielder, has been added to white bread (Buttercup Wonder White), buns (McDonald's burger buns and muffins), pasta (Heinz Kidz pasta and Freedom Foods gluten-free pasta), breakfast cereals (Uncle Toby's Healthwise and Grinners, Team Australia cereal), beverages (Sanitarium Up & Go Liquid Breakfast), fruit bars (Uncle Toby's Oven-Baked Fruit Bars and Twists), biscuits (Lanes Premium High-Fibre Crispbread and Freedom Foods gluten-free cookies) and even yogurt (Pauls Vaalia breakfast yogurt).

## HOW MUCH FIBRE IS ENOUGH?

The average Australian adult eats about 20 grams of fibre a day, but there appears to be general consensus amongst our leading health professionals that we should aim for 30-35 grams a day. Eating fibre in an isolated form, such as taking large amounts of unprocessed wheat bran, is not the answer to boosting your fibre intake, as bran can actually reduce the absorption of some minerals. It is far more beneficial, not to mention palatable, if it is eaten as part of food, rather than as bran supplements or fibre-containing drinks.

By making small changes to the food you eat, you can easily go from a low-fibre-eating pattern to one which is rich in fibre (see table).

## INCREASE YOUR FIBRE INTAKE BY SIMPLE SUBSTITUTIONS

INSTEAD OF THIS...	FIBRE (grams per serve)	TRY THIS...	FIBRE (grams per serve)
Regular white bread – 2 slices	1.5g	Wonder White OR wholemeal bread – 2 slices	4.0g
Corn flakes – 1 cup	1.0g	Hi-Bran Weet-Bix – 2 biscuits	7.0g
Canned spaghetti – 220g	2.0g	Canned baked beans – 220g	10.5g
Sour cream dip – 1/4 cup	0g	Hoummos dip – 1/4 cup	4.0g
Puffed crispbread – 4 serves	0.5g	Puffed rye crispbread – 4 serves	3.0g
Cream of chicken soup – 1 cup	0g	Split pea & ham soup – 1 cup	6.0g
Bottled orange juice – 1 cup	0g	Fresh orange – 1 medium	3.5g
White rice – 1 cup cooked	1.5g	Brown rice – 1 cup cooked	3.0g
White pasta – 1 cup cooked	3.0g	Wholemeal pasta – 1 cup cooked	8.5g
Garden salad – 1 cup	1.0g	Bean salad – 1 cup	10.0g
Beef bolognese – 250g	0g	Chilli con carne (beef mince with kidney beans) – 250g	8.0g
Chicken rissoles – 2 serves	0g	Lentil burger patties – 2 serves	14.0g
Ice-cream & topping	0g	Ice-cream and fresh fruit salad – 1 cup	3.5g
Soft lollies – small handful	0g	Dried apricots – 6 whole	9.0g
Sweet cream-filled biscuits – 2 serves	0.5g	Fresh pear – 1 large	6.0g
Cheesecake – 1 slice	0g	Fruit cake (with nuts) – 1 slice	5.0g
Plain white flour – 1 cup	5.0g	Wholemeal flour – 1 cup	14g

*A high-fibre diet requires a high water intake. Both insoluble and soluble fibre need to soak up water in order to swell. Not drinking enough water can result in very hard stools, which are then difficult and painful to eliminate. So, remember that six to eight glasses of water a day go hand-in-hand with your fibre-rich diet.* ■