

## > INFORMATION SHEET

Bread supplies a significant portion of the nutrients required by the body to maintain health and well-being. It is an excellent source of protein, complex carbohydrates, fibre, vitamins (Thiamine, Riboflavin, and Niacin) and minerals (calcium and iron), while also being in low in fat and cholesterol.

### NUTRITIONAL PROPERTIES OF WHEAT

The composition of wheat is responsible for the nutritional properties of bread. The properties of wheat are dependent on soil, climate and genetic variations and therefore vary between wheat types. New Zealand wheat has a protein content that ranges from 8 to 13% and it also has a high carbohydrate content of about 83% of the weight of the kernel.

Other components of the wheat grain include bran and germ. Bran is the outer coating or 'shell', and is rich in B vitamins and minerals. The wheat germ or 'embryo' is a rich source of B vitamins, oil, vitamin E and fat. The wheat germ is removed during milling as the fat tends to become rancid during storage, although it is a valuable ingredient in its own right and is used in many products.

Minerals contained in wheat include calcium, phosphorous, potassium, iron, magnesium and sodium. Vitamins such as thiamine (B1), riboflavin (B2), folic acid and vitamins B5 and B6 are also distributed throughout the wheat grain.

All the nutrients contained in wheat make bread an essential part of the diet.

### NUTRITIONAL PROPERTIES OF BREAD

When bread is compared with other commonly eaten foods, such as milk, cheese and meat, it is obvious that bread provides a greater range of nutrients than any of the other food products listed.

	PROTEIN	CALCIUM	IRON	THIAMINE	RIBOFLAVIN	NIACIN	FIBRE
BREAD	•	•	•	•	•	•	•
MILK	•	•			•	•	
CHEESE	•	•					
MEAT	•		•	•	•	•	

### BREAD AND ENERGY INTAKE

Bread is perceived to be fattening and is often the target of restrictive diets. However, since it is quite bulky it takes longer to digest, leaving you feeling fuller for longer. The energy content of a slice of bread varies depending on the type of bread, but is approximately 200–400 kJ/slice of bread. This energy intake is actually much lower than other foods that may be snacked on. Due to the fact that bread is an excellent source of protein, complex carbohydrates, fibre, vitamins and minerals, it is best to limit other foods (i.e. high-fat or sugary foods) from the diet first before limiting bread.

### BREAD AND CARBOHYDRATE/FIBRE

All bread contains carbohydrate and fibre, so increasing consumption of bread increases fibre intake. Although white bread provides a good source of soluble fibre, the breads containing the highest amount of fibre are wholemeal and mixed grain breads. There are also high-fibre white breads, for those people who prefer white bread, in which extra fibre has been added to the bread to double the amount present. Fibre is filling, making a person less likely to snack on unhealthy foods in between meals.

### BREAD AND PROTEIN

Bread is an important source of protein in New Zealand, providing 11% of the total protein in the diet. On average, protein in bread ranges from 8 to 15 g per 100 g bread, dependent on the type of bread. Bread is a source of cereal protein and it is important to combine bread with animal proteins, for example cheese or milk, to ensure a good range of different protein.

### BREAD AND FAT

The quantity of fat in bread is small, ranging from 2 to 5 g per 100 g, while saturated fat content is usually less than 1 g. All breads made in New Zealand contain vegetable oil, usually canola oil, in small amounts to improve the texture and keeping quality of the bread. Bread contains no cholesterol as no animal fats are added during its manufacture.

Bread with large amounts of seeds added, such as sesame, pumpkin or poppy, will have higher fat contents as seeds contain high levels of monounsaturated fats and some also contain omega 3, although both of these have health benefits. The total fat content will be higher due to the increase in monounsaturated and omega 3 fats, but the saturated fat will remain low and similar to other breads. It is important to consider toppings on bread as these dramatically increase the amount of fat and energy of a meal/snack. Both butter and margarine are high in fat, with some margarines containing 12–16 g fat/tablespoon. Consider jam and honey on bread without butter/margarine, or alternatives like light cream cheese (3 g fat/ tablespoon) or avocado (4 g fat/tablespoon) for sandwiches.

### BREAD AND SODIUM

Salt is added to bread to enhance the flavour and aid processing. In recent years, New Zealand bread producers have lowered the amount of salt added to bread to reduce the sodium levels. Bread contains on average less than 550 mg sodium per 100 g. This is equivalent to approximately 1.4 g salt per 100 g of bread.

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### WHICH BREAD?

White bread has approximately the same carbohydrate and protein content as wholemeal bread, contains soluble and insoluble dietary fibre, and a good percentage of the whole wheat nutrients. It is made from unbleached flour made from the inner 78% of the wheat grain. If you prefer white bread to wholegrain breads, you can get your extra fibre from other wholegrain foods such as breakfast cereals, wholemeal crackers and biscuits.

Some consumers perceive white bread as fattening. Energy in bread comes from the complex carbohydrates present, not from fat or sugar as with most processed foods. The energy content of white bread is approximately 1040 kJ per 100 g, or 380 kJ in each 37 g slice. This is actually a lot lower than other snack foods, such as snack bars (1600 kJ per 100 g). White bread may not contain the same high levels of fibre that wholemeal or multigrain breads contain, but it is still a valuable source of fibre, especially if the total amount of white bread consumed in the diet is considered. A 100 g serving of white bread contains approximately 2.5 g fibre, whereas wholemeal and mixed grain products contain between 4 g and 7 g fibre per 100 g bread. However, there are now high-fibre white breads available on the market, which contain added vegetable or cereal fibre increasing the amount of fibre present to approximately 4.8 g fibre per 100 g. White bread is also an important source of protein in the New Zealand diet. A 100 g serving of white bread contains 8 g of protein – that's 8%. For comparison, milk contains 3% protein and eggs contain 12% protein.

Wholemeal and wheatmeal breads are popular. In New Zealand wholemeal breads must have 90% or more wholemeal flour in the recipe, and wheatmeals any level of wholemeal flour mixed with white flour. Wholemeal bread contains higher concentrations of minerals and vitamins than white bread as it retains the bran and germ of the wheat. It is an excellent source of dietary fibre, containing twice that of white bread and more than multigrain breads.

Multigrain breads are made from a mixture of wholemeal, white or rye flour and may contain wheatgerm, honey, gluten, non-fat milk solids, cracked and whole grains of wheat and other cereals such as rye, oats, corn, barley, rice millet and triticale. 'Light' multigrain bread has an openness similar to white bread, with small kibbled grains, oats or other wheat mixed through the bread. 'Heavy' multigrain breads are characterised by small volume, dense texture and a high grain content. Multigrain breads, like wholemeal breads, offer higher concentrations of minerals and vitamins due to the inclusion of the bran and germ of the wheat. Also, multigrain breads offer other nutrients due to the range of inclusions, such as seeds, which are a good source of omega 3.

### A HEALTHY DIET WITH BREAD

The NZ Ministry of Health recommends eating at least six serves a day from the Bread and Grains food group, where a serving is equivalent to one slice of bread or a small bread roll. For people of a healthy weight, four to six slices of bread daily is recommended, preferably wholegrain. In addition to breads and cereals, the NZ Ministry of Health recommends that a well balanced diet can be achieved including the following foods in the diet each day – five servings of fruit and vegetables, at least two servings of milk and milk products (cheese, yoghurt), and at least one serving of meat (chicken, fish) or alternatives (nuts, seeds and eggs).

### REFERENCES

How to choose bread? [www.healthyfoodguide.co.nz](http://www.healthyfoodguide.co.nz). – [Accessed March – May 2010].

Ministry of Health 2003. Food and nutrition guidelines for healthy adults: a background paper. Wellington, Ministry of Health.

Nutrition information. [www.bakeinfo.co.nz](http://www.bakeinfo.co.nz) – [Accessed March – May 2010].

Professional views on bread and nutrition in New Zealand. Wellington, Baking Information Centre.