Resistant Starch

What is Resistant Starch?

Resistant starch (RS) is regarded by many as a component of dietary fibre. It avoids digestion and absorption in the small intestine (hence the term 'resistant'), and moves on to the large intestine where it is broken down by fermentation. Like regular dietary fibre, resistant starch plays an important role in digestive function.

Why is Resistant Starch not digested?

There are several reasons why resistant starch is not digested:

1. The tough outer coating of seeds and grains may make it physically inaccessible to the body's digestive enzymes.
2. The starch granules are structured in a way which prevents digestive enzymes from breaking them down. This form of starch is found in raw potatoes and unripe bananas.
3. Food containing starch that has been heated and then cooled can form crystals which are resistant to enzyme digestion. This form of 'retrograded' starch is found in foods such as cornflakes or cooked and cooled potatoes.
4. Chemical treatment can sometimes make starch resistant to breakdown by digestive enzymes.

Where is Resistant Starch found?

Resistant starch can be found naturally in foods such as legumes, unripe bananas, and cooked and cooled potatoes. Some processed foods such as breakfast cereals (e.g. cornflakes) and breads also contain added resistant starch called Hi-Maize® derived from corn.

Resistant Starch in Foods

FOOD	Resistant Starch (g/100g)
Chick Peas	10.0
Four Bean Mix	5.2
Corn kernels	3.9
Red Kidney Beans	2.6
Boiled potato (cooled)	2.4
Oats	1.8
White bread	0.8
Wholemeal bread	0.8

What are the health benefits of Resistant Starch?

- **Digestive health**

A healthy digestive system is essential for overall quality of life. Resistant starch positively effects digestive health by:

- promoting regularity by producing more bulk in the bowel, and acting as a mild laxative;
- functioning as a *prebiotic*, which promotes the growth and protection of beneficial bacteria in the bowel, while suppressing harmful bacteria;
- reducing pH in the intestine and reducing the production of potentially harmful substances; and
- increasing the levels of short chain fatty acids (SCFA), particularly butyrate, which encourages the growth of normal cells and inhibit the formation of cancer forming cells in the bowel.

- **Improved glycaemic response**

Because resistant starch is not digested in the small intestine, blood glucose levels rise at a slower rate, making it ideal for people with diabetes. This slower, more controlled glycaemic response also helps suppress hunger and keep energy levels up throughout the day.

- **Weight control**

Resistant starch may also be of benefit to healthy individuals who are trying to achieve and maintain a healthy body weight. Due to its indigestible nature, resistant starch provides less kilojoules (calories) than digestible starch and should be included as part of a healthy balanced diet.

How much Resistant Starch do I need?

It has been estimated that resistant starch intake in Australia is around 5-7 grams/person/day. The CSIRO recommend that 20 grams should be eaten each day to obtain the health benefits of resistant starch[1].

How can I increase RS intake?

- Add canned or soaked legumes such as red kidney beans or chick peas to your soups, casseroles and salads.
- Add butter beans to your mashed potato or pumpkin.
- Include more intact wholegrains, seeds and cereals such as oats, barley corn and linseeds.
- Eat your fruit before its ripe!
- Eat salads that have been cooked and cooled, such as potato salad, rice salad and pasta salad.
- Look for breads and cereals with added resistant starch.

1 CSIRO Division of Human Nutrition (1996) Dietary Fibre, Non-Starch Polysaccharides and Resistant Starch – A Review. Food Australia, 48(3).