

## **Starch**

Starch is the major carbohydrate reserve in plant tubers and seed endosperm. Starch consists of two types of molecules, amylopectin molecules (70-80%) and amylose (20-30%). Amylopectin and amylose differ in molecular shape, but each contains glucose as its basis. Starches are also called polysaccharides, because they are made up of a number of glucose molecules linked together. "Poly" refers to many. Starches are therefore referred to as complex carbohydrates.

Starch is one of the main forms of carbohydrate in our diets. Starches are found in plant sources and not in animals. Common starches in our diets include potatoes and cereal products such as, bread, pasta, wheat, rice etc. For most of us, starchy food accompanies meals and forms the basis of our diet.

Together with simple carbohydrates, e.g. sugary foods, the average carbohydrate intake per day should amount to 50% of our total calorie intake. In many parts of the world starchy food is the staple food of the diet and the intake would be above 50% of total calorie intake, e.g. in parts of Africa, maize and maize products are staple foods.

Digestible starches are broken down by digestive enzymes in the small intestine into glucose molecules, which are then absorbed into the blood and used to provide energy for the body. Not only does starchy food provide energy, but is also a source of protein, vitamins and minerals. Starchy food usually is very very low in fat, yet it is often thought of as being fattening. The only reason why starchy food could contribute to weight gain is if the portion size is too big or if fat is added! A good example is: a medium sized jacket potato served with butter and plenty of grated cheese.

In recent years, low carbohydrate diets, e.g. the Atkins diet and The South Beach diet became very popular. The average amount of carbohydrate consumed by an adult amounts to approximately 200-250g/day. The Atkins Diet suggests a carbohydrate intake of approximately 50g/day. This would mean avoiding all starchy food, making allowance for a very small amount of certain fruit, some vegetables and minimal amounts of dairy. These low carbohydrate diets have been criticized by experts and show no advantage above any other calorie restricting diet.

Apart from the starches we know, another new name, receiving plenty of media attention is 'resistant starch'.

Resistant starch represents the products of starch degradation that are not digested in the small intestine, and pass into the large intestine (colon). Resistant starch is regarded as a component of dietary fibre and is found in a wide range of foods including, intact wholegrains, legumes, pasta, unripe bananas, and some foods containing modified starches such as breads and cakes. Resistant starch has many health benefits such as improving bowel health and controlling the release of glucose from the food into the blood stream. Resistant starch also functions as a prebiotic.

Here is a guide of portion sizes for some of our favourite starchy foods:

- 1 slice of bread or toast
- 2 crispbreads
- 2 egg-sized potatoes or ½ a jacket potato
- 100g sweet potato

- 2 tablespoons mashed potato
- 2 heaped tablespoons boiled rice (25g uncooked)
- 2 tablespoons boiled pasta, egg noodles or cous cous (25g uncooked)