

Weight loss and carbohydrates

Carbohydrates are essential for a well-balanced diet and healthy body. They provide the only fuel source for many vital organs including the brain, central nervous system and kidneys. The digestive system breaks down carbohydrates into glucose and the pancreas secretes a hormone called insulin to help the glucose move from the blood into the cells.

Weight gain, kilojoules and low-carb diets

Low-carbohydrate (low-carb) diets are becoming popular again for weight loss. Yet, despite their claims, research suggests very low-carbohydrate diets tend not to lead to long-term weight loss and may lead to other serious health problems especially if the diet is very high in unhealthy saturated fats. The basic principle underlying the recommendation to eat less carbohydrates is concern that carbohydrates cause weight gain. This is misleading because weight comes from an excess in overall kilojoules (or calories), which can come from carbohydrate, fat or protein sources.

The best way to lose weight and keep it off is to combine a diet high in fruits and vegetables, whole grains, legumes and low-fat dairy products with daily exercise.

Low-carb diets restrict healthy food choices

Very low-carbohydrate diets are unlikely to meet your daily nutritional needs. Advocates of these diets advise people to consume kilojoules mainly from protein and fat sources and often recommend eating less than 100g of carbohydrate per day. Many health professionals do not support these diets as they can have a high fat content (particularly saturated fat) and tend to restrict important food sources of nutrients.

Very low-carb diets tend to contain few fruits and vegetables and may be:

- High in saturated fat
- Nutritionally inadequate because they are low in thiamine, folate, vitamins A, E and B6, calcium, magnesium, iron and potassium
- Low in fibre
- Missing important antioxidant phytochemicals.

Typical foods eaten on a low-carbohydrate diet include beef, chicken, bacon, fish, eggs and non-starchy vegetables as well as fats such as oils, butter and mayonnaise. Foods that are restricted include fruit, bread, grains, starchy vegetables and dairy products other than cheese, cream or butter.

Carbohydrates to meet your nutritional needs

To be healthy, your daily diet should include at least:

- **Four serves of bread or cereals** – for example, two slices of bread; one cup of porridge; one bread roll; one cup of cooked pasta or rice.
- **Two serves of fruit** – for example, one apple, orange or banana; one cup of canned fruit or four dried apricot halves.
- **Five serves of vegetables** – for example, one cup of salad vegetables; half a cup of cooked dried beans or legumes; one potato or parsnip; one cup of other cooked vegetables (equals two serves).
- **Two serves of dairy food** – for example, one cup of low-fat milk; two slices (40g) of cheese or one small tub (200g) of yoghurt.

Potential short-term effects of low-carbohydrate diets

In the short term, low-carbohydrate diets **may** cause you to lose weight because they restrict kilojoules or energy. The body begins to use body stores of glucose and glycogen (from the liver and muscles) to replace the carbohydrates it is not getting from food. Around 3g of water is needed to release 1g of glycogen, so the rapid initial weight loss on a low-carbohydrate diet is mostly water, not body fat. As carbohydrate stores are used up, the body begins to rely on other sources of fuel such as fat. This can lead to the development of ketones in the body which can make the body acidic. This can lead to metabolic changes, which may be dangerous for some people, such as those with diabetes.

Some people may also experience some of the following effects of a low-carbohydrate diet:

- Nausea
- Dizziness
- Constipation
- Lethargy
- Dehydration
- Bad breath
- Loss of appetite.

Potential long-term effects of low-carbohydrate diets

The long-term safety of a diet very low in carbohydrates but high in saturated fat is still uncertain and the potential effects on a person's health are not known. Some experts believe it's a recipe for a heart attack. Follow-up studies are needed over years to determine the safety of very low-carbohydrate diets.

Possible long-term effects may include:

- **Weight gain** – when a normal diet is resumed, some muscle tissue is rebuilt, water is restored and weight quickly returns.
- **Bowel problems** – restricted intake of antioxidants and fibre from fruits and vegetables can increase a person's risk of constipation and of developing bowel or colon cancers.
- **Dieting problems** – such as the 'yo-yo' effect where people lose and re-gain weight many times over a long period of time, rather than sustaining weight loss. A recent study has shown that weight loss on a low-carbohydrate diet was not different to a low-fat diet after a 12 months period.
- **High cholesterol, abdominal obesity and obesity-related disorders** – diets that are high in protein and fats are associated with a number of conditions including heart disease, diabetes and cancer. This can occur if the diet is very high in fat particularly from high-fat meats such as salami, sausages and bacon.
- **Kidney problems** – in people with impaired kidney function or diabetes.
- **Osteoporosis and related conditions** – due to loss of calcium from the bones.

Weight loss needs a healthy approach

A diet high in fruits and vegetables, whole grains, legumes and low-fat dairy products, and moderate in fat and kilojoules, is the best way to lose weight and keep it off.

Vegetarians and people who consume predominantly plant-based diets are generally slimmer and have much lower rates of obesity, heart disease and cancer compared to people who eat meat-based diets. This supports current thinking that diets high in unrefined carbohydrates help to prevent overweight and obesity.

Ultimately, to avoid weight gain, energy intake should not be more than energy output over a period of time. Avoiding large portion sizes will help keep energy intake in check. Regular exercise is also critical for long-term weight loss success.

Select carbohydrates, proteins and fats carefully

If you do choose to follow a low-carbohydrate diet, do not avoid carbohydrates completely – you need some in your diet to metabolise fat. Choose carbohydrate-rich foods that are unrefined or unprocessed, including whole grains and fruit, rather than the more refined and energy-dense forms such as cakes, sweets and soft drinks. Have a variety of vegetables daily.

Select a variety of protein-rich foods that are also low in saturated fat, for example:

- Lean cuts of red meat
- Fish (including fatty fish)
- Lean chicken and pork.

You could also select protein-rich foods that are plant based, for example:

- Nuts
- Legumes such as beans and pulses
- Soy products, including tofu.

Choose fats from plant sources (such as olives, olive oil, canola oil, peanuts, peanut oil, soy or soy oil) rather than from animal sources (butter or meat fat).

Where to get help

- Your doctor
- An Accredited Practising Dietitian, contact the Dietitians Association of Australia Tel. 1800 812 942
- Nutrition Australia

Things to remember

- Carbohydrates are essential for a healthy body and should not be removed from the diet.
- A very low-carbohydrate diet combined with very high protein intake is not recommended.
- Very low-carbohydrate diets tend not to lead to long-term weight loss.

This page has been produced in consultation with, and approved by:

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