HEALTH BASICS

Low-carb diets for weight loss

A low-carb diet limits carbohydrate-rich foods as one approach to losing weight.

WHAT IT IS
An eating pattern that limits carbohydrate-rich foods

WHERE IT COMES UP
Weight-loss plans, food labels, and diabetes care

WHY IT MATTERS
It can change weight, blood sugar, and food quality

WHAT IT IS NOT
Not a disease or a diagnosis

WHO TO ASK
A registered dietitian or primary care clinician

HOW IT IS CHECKED
Food records, weight trends, and relevant blood tests

Overview

A low-carbohydrate, or low-carb, diet limits foods that contain carbohydrate. These include bread, rice, pasta, potatoes, breakfast cereals, fruit, milk, sweets, and sugary drinks.

There is no single definition of "low carb." Some plans make a modest reduction, while very-low-carb or ketogenic diets allow much less. A ketogenic diet aims to produce ketosis , a state in which the body uses more fat and makes substances called ketones for energy.

Low-carb diets can help some people lose weight. They are not clearly better for everyone than balanced weight-loss diets over the longer term. The amount and quality of food, the size of the calorie reduction, and whether you can maintain the pattern all matter.

Low carb does not have to mean no carb. It also does not have to mean eating large amounts of meat, cheese, or butter. A plan can include vegetables, nuts, seeds, beans in suitable portions, fish, eggs, unsaturated oils, and other nutrient-rich foods.

How it works

Carbohydrate is one of the body's main energy sources. During digestion, many carbohydrates

are broken down into glucose, a type of sugar that enters the blood. The hormone insulin helps move glucose into cells for energy or storage.

Reducing carbohydrate often removes or limits foods that provide many calories, such as sugary drinks, sweets, chips, and large portions of refined grains. Protein, fat, and high-fibre foods may also help you feel full. Together, these changes can reduce how much energy you eat.

Early weight loss may partly reflect water loss. The body stores carbohydrate as glycogen in the liver and muscles, and glycogen is stored with water. When glycogen stores fall, some of that water is released. Continued loss of body fat still requires an ongoing energy deficit-using more energy than you take in.

Very-low-carb diets can lead to nutritional ketosis. This is not the same as diabetic ketoacidosis , a dangerous build-up of ketones and acids that mainly affects people with diabetes.

Why it matters for your health

Research comparing low-carb diets with balanced-carbohydrate weight-loss diets generally finds little or no important difference in average weight loss after one to two years. Individual results differ, and either approach may work if it is safe, nutritionally adequate, and practical to continue.

A low-carb plan may improve blood glucose levels in some people, especially when it reduces sugary drinks and highly refined foods. Weight loss itself can also improve blood pressure, blood glucose, mobility, sleep, and some blood fat measurements.

Food quality remains important. Replacing refined carbohydrates with vegetables, nuts, seeds, fish, and unsaturated fats is different from replacing them mainly with processed meat, butter, and foods high in salt. Some people see an increase in LDL cholesterol-the type linked with artery disease-on a diet high in saturated fat.

Carbohydrate-containing foods can provide fibre, vitamins, minerals, and beneficial plant compounds. Cutting them without suitable replacements can make a diet less balanced. Whole grains, fruit, beans, and starchy vegetables do not need to be removed simply because they contain carbohydrate.

What can go wrong

A sudden large reduction in carbohydrate can cause constipation, headache, tiredness, nausea,

muscle cramps, or difficulty concentrating. These effects often occur early, but persistent or troublesome problems deserve routine medical advice.

Restrictive plans may provide too little fibre or too few vitamins and minerals. They can also be expensive, difficult to follow socially, or likely to trigger an unhelpful cycle of strict dieting and overeating.

People who use insulin or medicines that increase insulin release can develop hypoglycaemia , meaning blood glucose that is too low, if carbohydrate intake falls without medication adjustment. Warning signs can include sweating, shaking, hunger, dizziness, confusion, or unusual behaviour. Medication changes should be planned with the clinician managing your diabetes.

SGLT2 medicines, such as empagliflozin or dapagliflozin, are linked to a risk of ketoacidosis. Very-low-carb or ketogenic eating may add to that risk. If you take an SGLT2 medicine, discuss major carbohydrate restriction with your prescribing clinician before starting.

Get emergency help for severe vomiting, significant abdominal pain, deep or rapid breathing, marked drowsiness, confusion, or fruity-smelling breath, especially if you have diabetes or take an SGLT2 medicine. Unconsciousness or a seizure related to low blood glucose is also an emergency.

Seek routine advice before making a major dietary change if you are pregnant or breastfeeding, under 18, have kidney or liver disease, take glucose-lowering medicine, or have a current or previous eating disorder. These situations may require a tailored plan and monitoring.

What you can do

Start by deciding what "low carb" means in the plan you are considering. Ask whether it sets a daily carbohydrate target, excludes whole food groups, or provides a way to meet fibre and nutrient needs.

You can keep a short food record to see where your carbohydrate comes from. Food labels list total carbohydrate and sugars. "Net carbs" is a marketing term calculated in different ways and may not match the carbohydrate value used for blood glucose management.

Focus first on changes that are usually easier to sustain:

If you have diabetes, ask how the diet may affect your medicines, glucose checks, and ketone testing. Do not stop or reduce prescribed medicine on your own.

A registered dietitian can help assess whether the plan supplies enough protein, fibre,

vitamins, and minerals. A primary care clinician may recommend checking blood pressure, blood glucose, kidney function, or cholesterol based on your health and medicines. There is no blood test that proves a low-carb diet is the right weight-loss method for you.

Arrange routine follow-up if the plan causes ongoing constipation, weakness, dizziness, repeated low blood glucose, or a worsening relationship with food. It is also reasonable to change approaches if the diet is too restrictive or does not fit your daily life.

- Replace sugary drinks with water or unsweetened drinks
- Choose mostly minimally processed foods
- Include non-starchy vegetables at meals
- Select unsaturated fats, such as olive oil, nuts, and seeds
- Include enough fibre and fluids to support regular bowel movements
- Track weight as a trend rather than reacting to daily changes

Common questions

Do I need to count every gram of carbohydrate?

Not always. Some people use a set carbohydrate target, while others begin by reducing sugary drinks, sweets, and large portions of refined grains. A food record can show whether a less rigid approach is working.

Is a low-carb diet the same as a ketogenic diet?

No. Ketogenic diets are very low in carbohydrate and are designed to produce ketosis. Many diets described as low carb allow more carbohydrate and do not consistently cause ketosis.

Can I eat fruit?

Many low-carb plans include fruit, although the type and portion may be limited. Whole fruit provides fibre and nutrients. Juice and sweetened fruit products are easier to consume in large amounts and may contain more rapidly absorbed sugar.

Will avoiding bread or pasta cause weight loss by itself?

Not necessarily. Weight loss depends on the overall eating pattern and energy intake. Removing one food may not help if its calories are replaced by similar or larger amounts from other foods.

Is low carb better than low fat?

Neither approach is consistently best for everyone. Trials have found similar average

longer-term weight loss. The better option is usually the safe, nutritious pattern you can maintain.

Sources

- Naude CE, Brand A, Schoonees A, and colleagues. Low-carbohydrate versus balanced-carbohydrate diets for reducing weight and cardiovascular risk . Cochrane Database of Systematic Reviews . 2022.
- Gardner CD, Trepanowski JF, Del Gobbo LC, and colleagues. Effect of low-fat versus low-carbohydrate diet on 12-month weight loss in overweight adults and the association with genotype pattern or insulin secretion . JAMA . 2018;319(7):667-679.
- Gardner CD, Vadiveloo MK, Petersen KS, and colleagues. Popular dietary patterns: Alignment with American Heart Association 2021 dietary guidance . Circulation . 2023;147:e799-e809.
- National Institute of Diabetes and Digestive and Kidney Diseases. Choosing a safe and successful weight-loss program . National Institutes of Health.
- U.S. Food and Drug Administration. FDA revises labels of SGLT2 inhibitors for diabetes to include warnings about ketoacidosis and serious urinary tract infections . Drug Safety Communication. Revised 2022.