Healthy eating and stroke

Did you know that the food you eat can affect your chances of having a stroke? Certain foods can help protect you against stroke, but having too much fat and salt in your diet can increase your risk. This factsheet explains how and why what you eat affects your risk of stroke and suggests some simple ways you can make your diet healthier.

You may be aware that a healthy diet can help reduce your risk of heart disease, diabetes and cancer. But you might not realise that **healthy eating also lowers your chances of having a stroke or transient ischaemic attack (TIA).** Many strokes can be prevented and healthy eating is one important way to reduce your risk. To do this, the best diet is:

- high in fruit and vegetables,
- high in wholegrains and fibre,
- low in salt and saturated fat,
- high in foods rich in potassium,
- and including oily fish.

If your doctor advises that you have an increased risk of stroke, or you have already had a stroke or TIA, they may give you medications to control your risk. Yet, as well as medical treatment, **eating more healthily is important.** Even making small, gradual improvements to your eating habits over time can offer big benefits.

As everyone is different, your doctor might be able to refer you to a dietitian for advice on how to improve your eating habits while continuing to enjoy food. We’ve put together a few suggestions in this factsheet for ways you can change your diet and why.

### Healthy eating tips to reduce your risk of stroke:

- Fruit and vegetables should make up a third of your daily diet. Eat at least five portions a day and choose a variety of colours.
- Starchy foods – based on wholegrains, these should make up another third of your daily diet.
- Fat – only eat this in small amounts. Cut down on full-fat milk, cream and cheese, fatty meat, processed meats and take-aways, to avoid the ‘bad fats’ in food.
- Salt – limit to a teaspoon a day (or 6g). This includes hidden salt in ready-made and processed foods.
- Protein – eat more oily fish, plus beans, peas and pulses. Eat more nuts and seeds and their oils too.
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Why eat more fruit and vegetables?

Eating high amounts of fruit and vegetables can **reduce your risk of stroke by up to 30 per cent**. Eating five or more portions a day is likely to reduce your risk of stroke significantly. Every extra portion may reduce the risk by around another five percent and the more you eat, the lower your risk.

What is a ‘portion’ of fruit or vegetables?

- One portion weighs 80g.
- For fruit, that could be an apple or two plums, a handful of berries, three heaped tablespoons of fruit salad, or one heaped tablespoon of dried fruit.
- A glass of fruit juice (150ml) counts as a maximum of one daily portion, as it is low in fibre and may affect blood sugar levels.
- For any vegetable, one portion is three heaped tablespoons whether raw, cooked or tinned.
- A dessert bowl of salad also counts as one portion.

How do fruit and vegetables help?

- **Vitamins and minerals**
  Eating a variety of different fruits and vegetables daily means you benefit from a range of vitamins, minerals and other nutrients. These include antioxidants such as vitamins A, C and E and beta-carotene. Among many benefits, antioxidants help prevent damage to your arteries that can lead to stroke.

- **Potassium-rich foods**
  Getting a good amount of the mineral potassium may reduce your risk of stroke. While salt increases blood pressure, potassium lessens this effect and may help prevent or delay the onset of high blood pressure. Uncontrolled high blood pressure is the most common cause of stroke. Eating more fruit and vegetables is the best way to increase potassium in your diet. However, potassium supplements should only be taken on medical advice as they can be harmful, especially for older people.

Tips for eating five a day

- Choose canned fruit in juice, rather than syrup, and canned vegetables in water without sugar or salt.
- Snack on fruit in place of sugary foods and sweetened drinks.
- Broccoli, cauliflower, cabbage, Brussels sprouts and other types of so-called ‘cross-shaped’ vegetables may be particularly protective against stroke due to high levels of antioxidants.
- Citrus fruits and their juices may be particularly protective against stroke for the same reason.
- A glass of unsweetened fruit juice (150ml) counts as a maximum of one portion a day.
- Choose bananas, tomatoes and avocados for more potassium.
- Choose a colourful variety of fruits and vegetables. This way you will eat a range of vitamins and minerals.
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• **Fibre**
  Fruit and vegetables are an important source of fibre. Fibre helps maintain a healthy digestive system. Fruit and vegetables contain a type of fibre called ‘soluble fibre’ that can help lower cholesterol and so reduce stroke risk. Apples, citrus fruits and strawberries are good sources. High fibre foods may also help to control body weight, as they are bulky, digest slowly and so help you feel fuller for longer.

Some medications can be affected by the foods we eat. If you take statin drugs (which lower cholesterol) then you should avoid grapefruit juice. If you take warfarin (a blood thinning medication) then you should avoid grapefruit and cranberry juice.

**Why eat more wholegrains?**

Starchy foods, like rice, cereals, potatoes and bread, should make up about a third of your diet. However, wholegrain varieties generally contain more vitamins and minerals than, for example, refined white flour products or white rice. Wholegrains play an important role in preventing stroke.

• **Vitamins and minerals**
  Wholegrains are a better source of B-vitamins, like B6, B12 and folate (also called B9 or folic acid). Low levels of B-vitamins in the diet are linked to high levels of a chemical in the body called homocysteine. High homocysteine levels, in turn, may lead to increased risk of cardiovascular disease and stroke.

Tips for eating more wholegrains

• Cut down on white bread, white rice and sugary cereals, and eat fewer white flour products like biscuits, cakes, pastries and plain pasta.

• Gradually eat more wholegrain breads, wholegrain breakfast cereals, wholemeal pasta and brown rice.

• Oats can help lower cholesterol and so reduce stroke risk. Oat bran, oatmeal and barley all help too.

• Millet and quinoa are other, gluten-free wholegrain alternatives.

• Fortified breakfast cereals can be a source of essential B-Vitamins (folate, B6 and B12), but folate may be harmful in supplement form.

• **Fibre**
  Wholegrains are another major source of fibre, or ‘roughage’, and better than refined grains and white flour. Some wholegrains, such as oats, contain soluble fibre – this can help lower cholesterol and reduce your stroke risk. Drink the recommended minimum of six to eight glasses of water, or other fluids, each day to aid digestion of wholegrains. You should also be sure to drink more water in hot weather or when exercising, to avoid dehydration.

What proteins can help?

Your body needs small amounts of protein every day from meat, fish or vegetarian alternatives. Select lower fat options wherever possible. Eating any fish at least
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Once a month reduces your risk of the main type of stroke (stroke caused by a blockage in the blood supply to your brain). You should eat one to two servings per week including one of oily fish. Due to low levels of pollutants in fish, you should eat no more than four portions a week, and no more than two if you are pregnant, breastfeeding or plan to become pregnant in future.

Try eating beans and pulses in place of some meat, as these are high in protein. They also contain a type of fibre called 'soluble fibre' that can help lower cholesterol, as do soya products like soya milk and tofu. Beans and pulses are high in vitamins and minerals, and three heaped tablespoons can count as one daily portion of fruit and vegetables.

Why eat less fatty food?

If you are overweight then this can lead to a number of things which increase your chances of having a stroke, including high blood pressure, diabetes and high cholesterol. Even if you are not overweight for your height, changing the types of fat you eat may still help reduce your risk of stroke.

- A healthier body weight can reduce your risk of stroke.
  It’s thought that you have a higher risk if your body is an ‘apple’ shape (with excess fat around your waist), rather than if it’s a ‘pear’ shape (with excess fat lower down around your hips). Seeking help to improve your eating and reduce your weight can help reduce the risks.

- The fat you eat can reduce your risk.
  There are different types of fat in food. ‘Bad fats’ can do more damage than others to your blood vessels and increase your risk – especially if you are already overweight. However there are also ‘good fats’ in food which can help reduce this damage and limit risk.

What are the ‘good fats’ in food?

- Unsaturated fats are better for our health. They are mainly found in fish and in plant-based foods, like nuts and seeds or the oils that come from them. You may see names like ‘polyunsaturated’, ‘mono-unsaturated’ and ‘Omega fatty acids’ – these are different types.

- Omega 3 is a type of fatty acid. It is found in seeds, but the best source is believed to be oily fish such as salmon or mackerel. It’s particularly important in reducing stroke risk as it can prevent blood clots, lower cholesterol and lower blood pressure.

What are the ‘bad fats’ in food?

- Saturated fats. These are mainly found in meat and dairy products, including fatty red meats, meat products (like sausages and meat pies), full-fat butter, cream and cheese, or processed foods that contain these. Palm oil, coconut oil, coconut cream and ghee are also high in saturated fat.

- Trans fats. These fats are made from liquid oils that are partially processed (or ‘hydrogenated’) to turn them into semi-hard fats. You can find them in processed foods like margarine, cakes, biscuits and pastries.

- We all need some saturated fat in our diet. But too much saturated or trans fats can contribute to the ‘furring’ of your arteries, increasing your risk of
stroke. It’s the **cholesterol** in these foods that is bad for you.

Too many ‘bad fats’ in your diet can lead to a build-up of fatty deposits, or patches called ‘atheroma’, inside your arteries. This causes them to become more ‘furred up’ over time. The patches make your arteries narrower so that less blood flows through them (this is called ‘atherosclerosis’). As your artery walls are damaged, blood clots may form. This increases the chance of blockages (and strokes) occurring. Replacing ‘bad fats’ with ‘good fats’ in your diet can help reduce this damage.

**What is cholesterol?**

Cholesterol is a type of fat. It is made in your liver from the food you eat. It helps your body to digest food, make hormones and build cell walls. It’s carried in your blood, along with another important type of fat called triglycerides. Triglycerides are made in your liver and intestines and your body uses them for energy. If your body doesn’t need to use this fat, it’s stored as fatty tissue.

Your blood carries these fats (or ‘lipids’) around your body in particles called lipoproteins. There are several different types of lipoproteins. Some move cholesterol around your body, some deliver triglycerides to your fat cells for storage while others remove excess cholesterol from your body and bring it back to your liver for disposal. This last type is called ‘high density lipoprotein (HDL)’ or ‘good’ cholesterol.

Your liver can produce all the cholesterol your body needs. However, saturated fats and trans fats all contain additional cholesterol and triglycerides. This can cause too many lipoproteins in your blood, leading to the so-called ‘bad’ cholesterol that can damage your arteries (called low density lipoprotein or LDL). Having low levels of good cholesterol has been proven to be linked to a higher risk of stroke, especially if your triglyceride levels are high and you have other stroke risk factors too. High triglyceride levels can be harmful for health in other ways as well.

**What causes high cholesterol?**

For many people, high total cholesterol levels are a result of **eating too much food high in saturated fat**. Regularly drinking too much alcohol, being overweight or not exercising enough can also contribute. However, bad cholesterol increases slightly with age. A family history of early stroke may also affect your risk of developing high cholesterol yourself.

High cholesterol can also run in families. **Familial hypercholesterolemia (FH)** is a genetic condition that causes bad cholesterol to build up in your bloodstream. People of South Asian background in the UK are more likely to have a higher risk of stroke than the rest of the population. This is partly because they are genetically more at risk of higher cholesterol levels.

**How is cholesterol measured?**

Cholesterol levels are measured with a **blood test**. If your doctor requires a full lipid profile test, you should not eat for 12-14 hours before the test. This looks at your total levels of cholesterol, lipoprotein and triglycerides.

In the UK, it is recommended that your total
cholesterol levels should be **below 5mmol/L** and your LDL level below 3.0mmol/L. That’s a measure of the amount of cholesterol per litre of blood.

### Tips for lowering your cholesterol

- Cut down on the foods high in saturated fat, such as:
  - full-fat dairy - milk, cheese, cream, yoghurt and butter
  - fatty meat, meat products and lard
  - pastries, biscuits and cakes
  - foods high in coconut oil, palm oil or ghee.

- Eat more foods high in fibre that help lower cholesterol - oats, beans, peas, pulses, nuts, fruit and vegetables.

- Eat oily fish, as it helps lower cholesterol. For example: salmon, mackerel, sardines, trout, pilchards or fresh tuna.

- Eat five portions of fruit and vegetables a day.

- Use olive oil for salad dressing, but cook other foods with rapeseed oil (it’s healthier at higher temperatures).

- Cholesterol from eggs, liver and kidneys and some seafoods has little effect on your cholesterol levels.

- Get regular exercise – this helps improve the balance of fats in your blood.

- Drink sensibly and give up smoking. (See factsheets F13, Alcohol and stroke and F19, Smoking and stroke).

### Your cholesterol levels should be measured every five years.**

It is more important to get cholesterol checked if you are over 40, overweight or have a family history of stroke, high blood pressure or other medical conditions such as heart disease or diabetes.

### Medication to control cholesterol

If you have abnormal levels of fat (lipids) in the blood, **your doctor may recommend a low fat diet and plenty of exercise**. If, after several months, your cholesterol levels have not dropped, your doctor may advise you to take medication to control cholesterol. Your doctor will consider many aspects of your health, including other risk factors, when choosing which type of medication is best for you.

Lipid-lowering drugs (called **statins**) help prevent fatty deposits forming on the walls of your arteries and may also help reduce those that are already there. They would usually be taken while also eating a low-fat diet and, if necessary, losing weight, giving up smoking or reducing the amount of alcohol you drink. You may also need advice from a dietitian and you can ask your GP to refer you.

People with **diabetes** have an increased risk of high blood pressure and diseased arteries and are often prescribed medication at an earlier stage for lowering cholesterol and reducing their blood pressure. People who are **obese** may also be prescribed medication sooner if they have developed other risk factors for stroke and cardiovascular disease.
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Tips on controlling your weight

- Eat balanced meals, high in vegetables, salad, wholegrain starches and fruits, but low in salt, fat and sugar.
- Eat at least 5 portions a day of fruit and vegetables.
- Make sweet fatty foods and takeaways occasional treats and think about healthier snacks instead.
- Choose low fat options for milk, cheese, yoghurt, spreads and salad dressings.
- Choose lean cuts of meat and trim off visible fat. Replace some red meat with leaner varieties like chicken and turkey, and remove the skin, or buy skinless.
- When food labelling implies low-fat, look at the nutrition information panel per 100g to check.
- Steam, grill, bake, poach or simmer, rather than frying your food.
- Try only to eat as much as you need. If you eat more calories than your body needs, then the extra energy is stored – usually as fat.
- Use smaller plates and bowls to help control portion sizes.
- Try to build exercise into every day. This can help burn off calories or maintain a healthy body weight.
- Drink sensibly and keep within recommended alcohol limits.
- Speak with your GP, practice nurse or dietitian before starting any new diet.

Why eat less salt?

Eating a lot of salt has been linked to causing high blood pressure. Salt contains sodium. Sodium helps to keep your body fluids at the right level. But if you have too much salt, the volume of fluids in your body increases and this pushes your blood pressure up.

High blood pressure, or hypertension, is the single biggest risk factor for stroke. It contributes to hardening of the walls of your arteries, increasing the risk of blood clots forming. This can cause stroke. High blood pressure also puts a strain on your blood vessel walls, increasing your risk of a blood vessel bursting and bleeding into the brain – another cause of stroke. Cutting down on salt in your diet will help to lower your blood pressure and may reduce your risk of stroke. (Our factsheet, F6, High blood pressure and stroke, provides more information about this and available treatments).

How much salt do I need?

As a nation, we eat far too much salt. On average, we eat 9.5g of salt (3.7g sodium) a day. We should eat no more than 6g of salt (2.5g sodium) a day. Small children and babies need even less salt in their diet. Babies should have less than 1g of salt a day.

Where is the ‘hidden’ salt in our diet?

Most of the salt we consume comes from processed or ready-made foods. In fact, 75 per cent of the salt we eat is already in the food we buy. Many everyday foods have high salt content.

A quick and easy way to keep track of the amount of salt you are eating each day is by reading the salt (and sodium) content on the

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nutritional labels on foods:

- A high amount of salt is more than 1.5g per 100g (0.6g sodium).
- A low amount of salt is 0.3g per 100g (or 0.1g sodium).

If you can only see a figure for sodium, multiply it by 2.5 to get the total salt.

When comparing two similar products, try to go for the one with the lowest salt content. Even a small variation can make a big difference for something you eat a lot. Being more selective about the products you buy can help to reduce your intake of hidden salt.

Tips on reducing the amount of salt you eat

- Remember the maximum daily intake recommended for adults is just one teaspoon of salt. This is roughly 6g (or 2.5g of sodium).
- Take salt off the dinner table.
- Don’t add salt when cooking – instead flavour meals with garlic, chilli, herbs or spices, lemon or lime juice.
- Make you own sauces, pickles or chutney to control how much salt goes in.
- Beware of added salt in foods like:
  - bread and breakfast cereals
  - crisps and other salty snacks
  - cheese, butter and margarine
  - meat like bacon and meat products like sausages and meat pies
  - ready made meals and soups
  - smoked fish and baked beans
  - ketchups and sauces in jars.

Useful organisations

All organisations are UK wide unless otherwise stated.

**Stroke Association**
**Stroke Helpline:** 0303 3033 100
**Web:** stroke.org.uk
**Email:** info@stroke.org.uk
Contact us for information about stroke, emotional support and details of local services and support groups.

**www.nhs.uk/livewell/5aday**
NHS Choices ‘5 A Day’ website advises about the benefits of eating at least five portions of fruit and vegetables daily.

**www.nhs.uk/Change4Life/**
NHS Choices ‘Change 4 Life’ website supports adults and their young children to eat well and get active.

**British Dietetic Association**
**Tel:** 0121 200 8080
**Website:** www.bda.uk.com
Provides food factsheets on various aspects of diet and nutrition.

**Freelance Dietitians**
**Website:** www.dietitiansunlimited.co.uk
Find a registered dietitian working in private practice on this website from the British Dietetic Association.

**British Nutrition Foundation**
**Website:** www.nutrition.org.uk
Information on nutrition and healthy eating, based on nutrition science.
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CASH (Consensus Action on Salt and Health)
Tel: 020 7882 5941
Website: www.actiononsalt.org.uk
Information on salt and its effects on health, including links to obesity and blood pressure.

Coeliac UK
Helpline: 0845 305 2060
Website: www.coeliac.org.uk
Charity working to support people with coeliac disease and providing information on gluten-free diets.

Heart UK - The Cholesterol Charity
Helpline: 0845 450 5988
Website: www.heartuk.org.uk
Information on lifestyle and diet to reduce cholesterol, inherited high cholesterol and cholesterol-lowering medications. Helpline staffed by specialist nurses and dietitians.

Institute for Optimum Nutrition
Website: www.ion.ac.uk
Charity providing information and education on nutrition.

The Vegetarian Society
Tel: 0161 925 2000
Website: www.vegsoc.org
Recipes and information on vegetarian food and healthy eating.

Weightwise
Website: www.bdaweightwise.com
Hints and tips to help you manage your weight on this website from the British Dietetic Association.

Weight Concern
Tel: 020 7679 1853
Website: www.weightconcern.org.uk
Offers information and support programmes in tackling the causes of excess weight.

Disclaimer: The Stroke Association provides the details of other organisations for information only. Inclusion in this factsheet does not constitute a recommendation or endorsement.