

A photograph of a man with short dark hair and glasses, wearing a yellow t-shirt and dark trousers, sitting in a wheelchair in a kitchen. He is looking off-camera to the right with a slight smile. The kitchen has wooden cabinets, a white countertop with a kettle and a microwave, and a washing machine on the left. An orange triangle is overlaid on the bottom left of the image, containing the text 'Diet and nutrition'.

Diet and nutrition

We're the MS Society and we're here for you. Funding world-leading research, sharing information, making voices heard and campaigning for everyone's rights.

Together we are a community. And together we will stop MS.

We rely on the generosity of people like you to fund our vital work. If you would like to make a donation, you can do so by:

- Calling us on: **0300 500 8084**.
Lines are open Monday to Friday
- Visiting us at: mssociety.org.uk/donate
- Posting your donation to: MS Society, National Centre, 372 Edgware Road, London NW2 6ND. Please make cheques payable to the 'MS Society.'

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A word from Yasmin, who has MS

Being diagnosed with an unpredictable and incurable condition like MS can leave you feeling powerless. It certainly did with me.

When I heard diet could help with MS symptoms I assumed that this would be a 'special', unusual and probably expensive diet. But the reality was just to eat good nutritious food and include lots of vegetables. With this in mind, we get a weekly veg box delivered to make sure we have a supply of fresh produce to cook with. I recently completed an Open University degree and believe that eating healthy food helps when trying to study.

This booklet has some helpful information on how to manage your MS symptoms by making changes to your diet. I try to eat smaller meals more often to help me feel less tired and I always make sure I drink enough liquids. I often feel I'm easily dehydrated,

and drinking a lot of fluids helps me feel better. I feel it also helps fight off any infections.

The impact that the food you eat makes on your 'brain health' is undeniable and not only for people with MS but for anyone. But for people with MS, eating well is another way to take control of your condition. Chronic illness takes so much away from a person's life, but being able to eat and share good food with friends and family gives back some of what has been lost.

A handwritten signature in black ink that reads "Yasmin". The letters are cursive and fluid, with a large 'Y' and 'M'.

Five things to know

1

Aim for a balanced diet so you get enough of the main nutrients: carbohydrates, fats, proteins, vitamins and minerals.

2

There isn't an 'MS diet' that's been proven to help treat multiple sclerosis. And some special diets, like The Swank, McDougall, Paleo or Best Bet, cut out certain foods, so if you try them, be careful not to miss out on vital nutrients.

3

A balanced diet and healthy weight, could help you manage your MS.

4

Make a plan for your diet that helps your own personal needs - to help with fatigue, the bladder or bowel, swallowing difficulties or keeping a healthy weight.

5

If you need help with meals - with planning, shopping, preparing or clearing up - ask your GP or MS nurse for an occupational therapist assessment and a referral to a dietitian. They can help make sure you can get a good diet, and help you eat healthily within your budget.



About this booklet

Eating is more than just something we need to do. It's something to be enjoyed – it can be a fun social activity, a cultural experience and something to make you feel good. And a healthy diet that suits how you live can make a difference to how you feel.

In this booklet we describe the kind of healthy diet that most people should aim for – one that has a balance of different kinds of foods.

We'll also talk about some of the claims made for special diets for MS. We look at the evidence, to help you make up your own mind about what you choose to eat.

Because MS symptoms can sometimes affect what you eat and how you prepare meals, we've got tips on planning, preparing, and clearing away.

There's information too on other organisations that can help with issues around food and eating. See 'Useful organisations' on page 49.

And if you're keen to stay as fit and healthy as possible, our website's got lots of information about exercise and support for staying active, including videos you can use at home:

[mssociety.org.uk](https://www.mssociety.org.uk)

Call the MS Helpline to see how our Physical Activity support service can encourage your efforts with activity, diet and stopping smoking: **0808 800 8000**

One last thing. Where you see a word in **bold** in this booklet, it means you can turn to the back and find it explained in more detail.

Is there an MS diet?

For most people with MS, the best diet is a healthy, varied one. And lots of people with MS say that when they eat well, they feel better.

Some people with MS say that following a specific diet has made a difference to how they feel. For example, they might feel the diet has reduced how many relapses they get, or that it's improved their overall quality of life. But other people don't feel this way.

Researching diet is very difficult, and at the moment there's not much **scientific evidence** that any special diets affect the way MS develops. But a healthy balanced diet can help guard against other issues, like heart disease and strokes.

If you feel better eating a certain way, it could be a change that works for you. The important thing is to make sure you're not missing out on the healthy nutrition you need.

We look at some of the more popular diets that are suggested for MS in 'Special diets' on page 24.

What should I eat if I've got MS?

Aim for a healthy, balanced diet. That's one that gives you the right amounts of different kinds of nutrients:

- **Proteins** for growth and tissue repair
- **Carbohydrates** for energy
- **Fats** for energy, to help your body absorb certain vitamins, and for essential fatty acids
- **Fibre** for healthy digestion and regular bowel movement
- **Vitamins and minerals** essential nutrients needed for your body to work properly, including tissue repair, bone strength and for absorbing other nutrients

- **Fluids** so the body can work at its best. Water carries nutrients around the body and is used in the chemical processes that happen in our cells

The NHS uses the Eatwell Guide to show the different portions they recommend for a balanced diet. You can find it at [nhs.uk](https://www.nhs.uk) as well as on national government websites.

Our diet is made up of lots of different nutrients, not one thing or another on its own. So we have to think about diet as a whole.

But some MS research has looked at particular nutrients and on pages 13 to 23 we look at vitamin D, calcium, essential fatty acids (including omega-3), vitamin B12, and **antioxidants**.

How can a balanced diet help?

A balanced diet combined with exercise can help you stay in the best health possible. For example, it can help you keep a healthy weight and feel less tired. It can also help you have regular toilet

habits, and keep your bones, muscles, teeth and gums healthy.

The same balanced diet, with exercise, can help cut your risk of getting heart disease, stroke, **osteoporosis** and certain cancers.

And it can help keep your skin in good condition, to protect it against getting sore and damaged. This could be important if you spend a long time sitting or lying down.

Who can help with diet and nutrition?

GPs, dietitians and occupational therapists can all help with diet and nutrition. They can help with what you eat and how you prepare it. For example:

- **Your GP** can tell you more about healthy eating, and most surgeries will have information leaflets you can take home. You can ask them for a referral to a dietitian.
- **A dietitian** can help if you have any particular nutritional or energy needs – for example, if you have a constant tremor, or

you're underweight, or if you have symptoms or another health condition which might affect your diet. A dietitian can also help you plan your meals so that you're getting all the nutrients you need.

- **An occupational therapist** can help you find easier ways to prepare food, perhaps to save energy or to manage a tremor.

For more information about getting a healthy diet and how to find a dietitian, visit the NHS website for your nation.

“All we can do is eat a healthy, balanced diet. If you're low on something then pop those supplements. I'm sticking to eating veggies like my mum ordered.”

Mel

Should I take vitamin or mineral supplements?

If you're eating a balanced diet then you should be getting enough of most **vitamins** and minerals through your food. Research suggests this is the best way to get the nutrients you need, rather than through supplements.

But there could be reasons you might need to take supplements. For example, everyone should consider regular vitamin D supplements (see page 14).

Some neurologists test their patients with MS to check their vitamin D levels. If these are low, they can prescribe supplements. There's more about vitamin D on page 13.

If your energy needs are very low and you don't eat very much, you might not get enough of certain vitamins and minerals.

But speak to a health care professional if you think you might need to take supplements. If you do take them, remember that too much of certain vitamins

or minerals can sometimes be harmful. There's more about vitamins and minerals on the NHS Choices website, including recommended safe levels.

Are there foods I should avoid?

There's very little evidence that removing certain foods from your diet is a good way to treat your MS. A healthy, balanced diet would mean you're not getting too much of any particular kind of food.

But people with MS can react to certain foods, just like anyone else. If you think you have an **allergy** or **intolerance**, speak to your GP who can help you to look into it further. The charity Allergy UK has more about the signs of allergies and intolerances at allergyuk.org

Can I drink alcohol if I've got MS?

You don't have to give up alcohol because you've got MS. There hasn't been much research into alcohol and MS, but the evidence doesn't suggest it makes MS worse in the long run.

Of course, alcohol can have all sorts of effects on the body, which could make MS symptoms worse. For example, some people with MS say it makes their balance and coordination worse. It can also irritate your bladder and affect your sleep. As with people who don't have MS, the short-term effects of what you drink vary from person to person.

Alcohol can interfere with some medications. Your GP, pharmacist or MS team can tell you if that's the case for anything you're prescribed.

The NHS has guidance on alcohol for all men and women. It says there's no completely safe level of drinking, but sticking within the guidelines lowers your risk of harming your health.

They advise people to drink no more than 14 units a week, and to spread that over 3 or more days, not all in one or two days. As a guide, a pint of 5.2% alcohol beer is 3 units. A bottle of 13.5% wine is 10 units.

Coffee and MS

You don't need to stop drinking coffee because you've got MS. Some research suggests coffee might even have health benefits, including reducing the chance of heart disease.

One study into coffee and MS found that people with relapsing forms of MS who drank coffee every day had a slower development of symptoms than those who never drank coffee. But the evidence isn't strong enough to recommend everyone with relapsing MS drinks coffee. And we also don't know how much coffee might be the best amount to drink if it does have benefits.

We do know drinking too much coffee can have side effects like nervousness, irritability and stomach upset. And coffee and other drinks with caffeine in them can make you need the toilet more often and affect your sleep.

The effects of caffeine vary from person to person, but 4 cups a day would seem to be completely

healthy for most people. If you're pregnant, the NHS recommends you drink no more than 200mg of caffeine a day. That's about 2 coffees.

Does salt affect MS?

Research hasn't shown a link between the amount of salt we eat and MS. It doesn't seem to affect the risk of developing MS, or influence how quickly MS progresses.

But eating a lot of salt is linked to high blood pressure, heart disease and stroke, so it makes sense to keep it to less than 6g a day. That's about a teaspoon of salt and it's the recommended upper limit for adults in the UK.

We need a bit of salt in our diet, but lots of the foods we eat, like bread, cereals and ready meals, already contain salt so it's often not necessary to add salt to your meals.

Vitamin D

Vitamin D keeps your teeth, muscles and bones healthy and it plays an important role in your immune system.

Most people get the majority of their **vitamin D** from sunlight. It's made by our bodies when the sunlight shines on our skin. It's also available in smaller amounts in food.

Good food sources of vitamin D include oily fish, such as salmon and sardines, **fortified** breakfast cereals, and eggs. Small amounts are also found in margarine and full-fat milk.

But it's almost impossible to get all the vitamin D you need through diet alone.

Is there a link between vitamin D and MS?

There does seem to be a link between vitamin D and MS. We get about 80-90% of our vitamin D from the sun. And there are more people with MS in areas

further away from the equator where there is less sunshine. So researchers have looked into possible links between vitamin D and the risk of developing MS.

Studies show that if you don't get enough vitamin D when you're a child this could play a role in your chances of developing MS. Other research shows that people who naturally have low vitamin D levels because of their genes are more likely to develop MS.

There's some evidence that levels of vitamin D in the body might affect how someone's MS develops.

But at the moment it's not clear that increasing vitamin D (through supplements, for example) can help manage MS. If it could, it's important to also find out the best dose, and if it could help certain people more than others.

You can keep up with the latest research on our website mssociety.org.uk/research

Should I take a supplement to get enough vitamin D?

If you live in the UK, you probably don't get enough vitamin D through diet and sunshine alone, particularly in the darker months – from October to the end of March.

The UK government's Scientific Advisory Committee on Nutrition recommends that everyone in the UK considers taking a supplement to make sure they're getting enough vitamin D.

For anyone who's 1-year-old or over, they recommend 10 µg (micrograms) /400 IU (international units) a day.

These recommendations are for the population as a whole, to help keep bones and muscles healthy.

All 4 UK governments recommend some people take this supplement all year, including if you:

- don't get outdoors much
- always cover up in the sun
- are from a minority ethnic group with dark skin, such as of African, African-Caribbean or South Asian origin

Some neurologists suggest people with MS should take higher doses than other people, all year round.

If you're concerned about your vitamin D levels, ask your MS team about getting a blood test. And speak to your MS team before taking high doses. Too much vitamin D could cause serious health problems.

The Association of British Neurologists says women with MS of child-bearing age should take a vitamin D supplement. Speak to your neurologist about how to take this supplement and at which dose.



Calcium

Calcium is vital for keeping bones strong. It also helps muscles to work properly.

How do I get calcium into my diet?

Milk and dairy products – including yoghurt and hard cheeses such as cheddar and edam – are the richest sources of calcium.

Tinned sardines and pilchards (where the bones are eaten), bread (particularly white), tofu, green leafy vegetables, baked beans and other pulses, certain nuts and seeds (tahini, almonds, brazil nuts, hazelnuts) plus dried figs are also good sources.

Calcium-enriched soya products, such as milk, yoghurts or cheeses, are also available.

Skimmed milk contains as much calcium as full-fat, so you can cut down on **fat** without losing out on calcium.

Calcium and vitamin D

As well as getting plenty of calcium, you should also make sure you're getting enough **vitamin D**, as it helps your body to absorb calcium. Low fat products contain less vitamin D than full fat versions.

If your MS team recommends you take a high dose of vitamin D, they might also suggest you should have a low calcium diet. That's because occasionally, very high doses of vitamin D cause calcium to build up in the body and damage the kidney.

How much calcium do I need?

The recommended amount of calcium each day is 700 mg. This is about the same as a pint of milk, or two to three portions of dairy, such as a yoghurt or matchbox sized piece of cheese.

Should I take supplements for bone health?

If you're prescribed a course of **steroids**, or if you're less mobile, a health care professional might suggest calcium supplements to strengthen your bones. If you're

worried you're not getting enough calcium or vitamin D, talk to your GP about whether supplements are good for you. To find out if you have enough calcium in your bones, you'd need a scan to check bone mineral density.

Healthy bones

Osteoporosis causes bones to become more fragile and more at risk of breaking. It's not a symptom of MS, but people with MS might be at a higher risk of developing **osteoporosis** because of:

- long courses of steroids, used to treat relapses
- a lack of weight-bearing exercise (where your feet and legs support your weight)
- lack of sunlight, perhaps because of heat sensitivity or inability to get out of the house, leading to lower vitamin D intake

MS symptoms like balance problems can also make people more likely to have falls or break bones. So bone health is important. Keeping up good levels of vitamin D and calcium can help reduce the risk of osteoporosis, as these both help keep your bones strong and healthy.

Essential Fatty Acids

Essential fatty acids (EFAs) are types of fat that the human body needs for good health. You might also hear them called polyunsaturated fats or even PUFAs (polyunsaturated fatty acids). Many polyunsaturated fats in our diet are EFAs. There are two main groups of EFAs: omega 3 and omega 6.

EFAs have important jobs to do in the central nervous system (the brain and spinal cord). We need them to produce hormone-like substances, called prostaglandin E2 and prostaglandin E3.

These work together when your body reacts to inflammation and the immune system goes to work. EFAs are needed to make and repair myelin - the protective layer around nerve fibres that gets damaged in MS.

The research evidence for EFAs affecting MS is mixed. Overall, it's not clear that they can reduce relapses or progression in MS. But there's no doubt that they're important for the immune system.

Our bodies need a certain amount of **fat** for a healthy balanced diet, so it makes sense to get that from EFAs rather than saturated fats which we know can be bad for us.

How do I get EFAs in my diet?

Sources of omega 3 EFAs include:

- oily fish, including sardines, mackerel, salmon and fresh tuna
- certain nuts, seeds and beans including walnuts, linseed and soybeans

Sources of omega 6 EFAs include:

- certain seed and vegetable oils such as sunflower, safflower, rapeseed, soy and corn oil

- food made from the above oils including margarine, salad dressings and mayonnaise

Should I take an omega 3 supplement?

Research hasn't shown clear benefits for MS from omega 3 supplements.

Generally, omega 3 supplements are safe. But they might affect how some medicines work, and very high doses could be harmful. Your doctor or MS team can tell you if any of your medications might be affected by omega 3 supplements, and check the dose is safe for you.

If you're pregnant, you should avoid supplements which also contain **vitamin A**, like cod liver oil.

How much do I need?

A good balance of omega 3 and omega 6 may be more important than the total amounts of each.

The typical UK diet is probably too rich in omega 6 and not rich enough in omega 3. So if you

normally have a typical UK diet, you could try to aim for more omega 3 EFAs.

EFAs still contain the same amount of calories as other types of fat so, while they might be better for your health, it's best not to eat too much. More research is needed to find out the ideal intake.

Vitamin B12

The link between vitamin B12 and MS is not clear. But vitamin B12 does have several important functions, including an important role in the nervous system.

The body needs **vitamin B12** to make myelin – the protective layer around nerve fibres that gets damaged in MS. And vitamin B12 deficiency can lead to symptoms similar to MS. So it makes sense to include foods rich in vitamin B12 in your diet.

How do I get vitamin B12 into my diet?

Vitamin B12 is found in animal products, including meat, fish and dairy. Look for breakfast cereals that are '**fortified**' with vitamin B12. Yeast extract such as Marmite can be a good source of vitamin B12 if you are **vegan**.

Should I take vitamin B12 supplements?

Most people get enough vitamin B12 in their diet, but some people don't take in enough of it. This is more likely if you're **vegetarian**, **vegan** or following a special diet without animal products.

Some people with MS might not be able to take in enough of it even if they include lots of vitamin B12 in their diet.

If you're concerned about your vitamin B12 levels, speak to your GP who can carry out a blood test.

Research hasn't shown any benefit in taking supplements if you have enough vitamin B12.



Antioxidants

Oxidants, or free radicals, are chemicals that react easily with other substances in the body. They change or damage their structure. Some **vitamins** – including vitamin A, C and E – can limit the damage oxidants cause. So they're known as **antioxidants**.

Are they linked with MS?

Some research tells us that oxidants might be linked to the damage that happens in our central nervous system with MS. But there have been few studies into the use of antioxidants for people with MS and the significance is still unclear.

In theory, antioxidant therapy could make the effects of MS worse, as some antioxidants have a stimulating effect on the immune system – although the levels found in a balanced diet would not cause a problem.

One small study funded by the MS Society suggests antioxidants called 'flavonoids' might help with MS fatigue. In the research, they used hot chocolate. Dark chocolate (over 75% cocoa) is very high in flavonoids. You can also find flavonoids in other foods, like fruit and vegetables. They're one of the things that give fruit and vegetables their different colours.

This was a small study, and more research is needed to understand exactly how flavonoids and other antioxidants might benefit people with MS.

How do I get antioxidants into my diet?

Brightly coloured fruit and vegetables – red, orange, green and yellow – are the best source of antioxidants. These foods also contain other nutrients our bodies need.

Aim for at least five portions a day, choosing a variety of types

and colours. Dark chocolate (over 75% cocoa) is high in flavonoid antioxidants. But remember to check how much **sugar** is also in the chocolate.

Should I take supplements?

If you're eating a balanced diet then you should be getting enough antioxidants through

your food without the need for supplements. If it's hard for you to eat fruit and vegetables or your diet is particularly limited, speak to a dietitian about whether taking supplements would be good for you.

'Good' bacteria

In recent years, scientists have shown connections between the bacteria in our gut (our stomach and intestines) and the way the rest of our body works. This could include a link with MS and other conditions. The bacteria, and other tiny organisms, make up what's called the gut 'microbiome'.

Together they influence our immune response and central nervous system. This is a very new area of research and at the moment we don't know exactly how the gut might affect MS, or if our diet could change that. But eating a variety of fruit and vegetables might help encourage a healthy balance of bacteria.

A large study involving people with MS is already underway to find out more. You can read more about this emerging research on our website mssociety.org.uk/research

Special diets

Over the years, many special diets have been promoted to help with MS. These include low-fat, allergen-free, gluten-free, pectin-restricted, low-sugar diets, and diets that cut out processed food. Many people with MS say that following a special diet gives them a feeling of control over their MS. Some say that following a special diet makes them feel better and helps with their symptoms, but that's not the case for everyone.

Some special diets recommend changes which could have benefits for overall health, such as reducing saturated **fats**, or eating more vegetables – both generally recommended as part of a healthy, balanced diet. But they can also include restrictions which might be unhealthy, or make it hard for some people to stick to.

It's difficult to carry out research into diet and MS, and at the moment there isn't enough evidence to recommend any special diet for people with MS. What we know about diet in general shows that it's important to get a balanced nutritional intake, instead of avoiding certain foods.

If you do decide to try a new diet, it's important to make sure you still get enough energy and all the nutrients you need. If you cut out certain food types, make sure you find ways to get the nutrients you need to stay healthy and avoid malnutrition. **Malnutrition** can cause fatigue and make your MS symptoms worse.

Before making big changes, ask your GP for a referral to a dietitian. They can help you check you'll get the nutrition you need. Like any lifestyle change, there are lots of things you might want to consider before choosing to follow one of these diets, including:

- What's the evidence?
- Can you still enjoy your food?
- Is it good for you?
- How practical is it?

What's the evidence?

What's the evidence behind the diet? Does it make extravagant claims about how it will help your MS? Are these claims backed up by science?

'Personal stories' are just that – everyone's MS is different. So it's difficult to know if any improvement is because of the diet or because of the way MS symptoms sometimes vary. And what helps someone else won't necessarily help you.

Can you still enjoy your food?

Food is about more than just making sure your body gets the nutrients it needs. Can you still eat your favourite foods while following the diet? If you enjoy eating meals in restaurants or with others at home will you still be able to?

“I've eaten porridge for breakfast nearly every day for over 20 years and would love to believe that it's the reason why my MS is fairly tame. But I know that in reality, although porridge is good, in many ways it's not magic.”

Daff

How practical is it?

Think about how a diet fits into the way you and your household live. For example, lots of diets ask you to prepare each meal from fresh ingredients. Do you have the time, energy and money for that? If the diet suggests supplements, are they expensive?

Don't feel bad about changing things if a very strict diet becomes more of a chore than a positive choice. We all know food is more than the nutrients it contains – it's a big part of everyday life.

Is it good for you?

Make sure you can get enough energy from the diet. For example, if you have ongoing tremor or you're underweight, you might need extra energy. If you limit the kind of food you eat you might find you lose weight and you could become malnourished.

Can you still get a proper balance of all the nutrients you need? If a diet cuts something out, what's the healthy alternative for those nutrients?

Before you make any major changes to your diet, speak with your doctor or nurse, particularly if you have any other health conditions as well as MS.

Paleo diets and the Wahl's protocol

Paleo diets are based on foods that are thought to have been common in the Paleolithic era, before humans started farming. So they include meats, fish, nuts, vegetables and fruit. The idea is that our bodies are best adapted to eating these kinds of foods.

Paleo diets limit dairy, grains, pulses, potatoes and processed food.

The Wahl's diet is based on a Paleo diet, and it's part of what's called the Wahl's Protocol. This combines the diet with vitamins, meditation, and exercise. There are also newer versions of the Wahl's diet, including a ketogenic (keto) diet. The Wahl's diet is named after Terry Wahls, an American doctor who has MS.

Do they help with MS?

There's been little research into a Paleo diet or the Wahl's Protocol and MS. At the moment, there's no clear evidence to suggest they have benefits for people with MS.

In 2021, we expect results to be published from a study that compared how a Wahl's diet and the Swank diet (see page 29) might affect MS fatigue. You can keep up to date on our website mssociety.org.uk/research

Are they healthy?

Following the Paleo diet wouldn't generally be considered bad for you, although you'd have to make sure you were getting all the nutrients you need. Current evidence around good diet suggests that we should be eating nutritionally balanced diets, so cutting out whole groups of foods such as dairy, wholegrains and pulses is restrictive.

Cutting out cereals and dairy could mean you miss out on some **B vitamins**, vitamin D and calcium. And if you have high energy needs or you're underweight, excluded foods might make it harder to get the energy you need.

The large amounts of meat recommended are higher than current health advice on how much meat you should eat - and could also make it expensive.

The Wahl's diet doesn't completely cut out all of the same foods as other Paleo diets do, but you should still check you get all the nutrients you need.

“I think diet is very important for us MSers, but the key is to tailor it to meet your own requirements. We're all different.”

Heather

Intermittent fasting and keto diets

Intermittent fasting puts strict limits on calories some of the time, with the usual calories allowed the rest of the time. For example, it could mean cutting what you eat to just 500 calories for 2 days every week. On the other days, you'd eat your normal amount.

Keto diets (also called ketogenic diets) are low in **carbohydrates**. The idea is to get more of your calories from **fats** and **protein** instead.

Intermittent fasting and keto diets stop the body getting energy from its usual carbohydrates, so the body has to work in a different way to make use of fats

and protein. Researchers are interested in these kinds of diet because of the idea that they might reduce inflammation and help protect nerves.

Does it help with MS?

Early studies have suggested intermittent fasting and keto diets might have a positive effect on the immune system and the bacteria

in the gut which affect it. But at the moment, there isn't enough evidence to show they have an effect on people's MS symptoms or how their MS develops.

Is it healthy?

Keto diets don't provide all the **vitamins** and minerals we need, without supplements. And intermittent fasting and keto diets

Religious fasting

If you're thinking of fasting for religious reasons, you might find our Fasting and MS factsheet useful. It could help you discuss things with your religious leader, your doctor or MS nurse, your family and friends.

Lots of people with MS observe these fasts when they feel well enough. But if you've got MS, there could be times when fasting is not advised.

Download the factsheet for free at [mssociety.org.uk](https://www.mssociety.org.uk). If you can't get online, call the MS Helpline on **0808 800 8000**.

can lead to weight loss, so they might not be advised if you're underweight or have high energy needs.

Serious problems are rare, but the way the body gets energy from keto diets could lead to problems with the pancreas and liver.

People fasting or following a keto diet can get headaches, fatigue, feel irritable and dizzy for the first few days.

Intermittent fasting can affect bone density and make menstrual periods irregular.

If you cut down on carbohydrates, your diet will be lower in **fibre** too. We need fibre for a healthy gut and to avoid constipation. And if your diet is high in fat, this could affect your health in the long term.

The Swank diet

The Swank diet is named after Dr Roy Swank, who developed the diet in the 1940s. It limits the amount of **fat** you can eat: no more than 15g of saturated fat a day, and between 20–50g of

unsaturated fat. It also limits your intake of red meat and oily fish, although you can eat as much white fish as you like.

The diet also recommends that you take cod liver oil, **vitamin C** and E supplements and a multi-vitamin and mineral supplement.

Does it help with MS?

Some people say that following this diet has made them feel better, and reduced the number of relapses they've had. Other people have not had any benefit from following it.

From the research that's been published, there's not enough evidence to show that this diet has benefits for MS.

Although a few studies have been carried out, they've not generally been well designed. They also had very high drop-out rates, so without knowing what happened to the people who dropped out of the study it's hard to draw clear conclusions.

In 2021, we expect results to be published from a study that compared how the Swank diet and a Wahl's diet (see page 26) might affect MS fatigue. You can keep up to date on our website mssociety.org.uk/research

Is it healthy?

Following the Swank diet or a similar diet would not generally be considered bad for you. Not eating too much saturated fat is widely accepted as good health advice.

But cutting down on meat and dairy products to reduce your saturated fat intake might mean you're not getting enough **protein** and iron, so you'd need to find alternative sources like fish, beans and pulses.

Cod liver oil has a blood-thinning effect, so it should be taken with caution if you take aspirin or **anticoagulant medications** such as warfarin, or if you have a bleeding disorder.

Cod liver oil also contains high levels of vitamin A, so you shouldn't take it if you also take supplements containing vitamin A, or if you eat liver

regularly. If you have diabetes you should speak to your doctor before taking cod liver oil.

This diet can be low in energy, so you might lose weight. If you have high energy needs or if you are already underweight then it may not be suitable for you.

The Overcoming MS diet

The Overcoming MS (OMS) diet was developed by Dr George Jelinek in 1999 following his own diagnosis with MS. It's part of a lifestyle programme which includes diet, medication, exercise and meditation.

The OMS diet recommendations are similar to the Swank diet. It advises cutting out dairy and meat, and eating less fat – particularly saturated fat. It also recommends flaxseed oil as an omega 3 supplement and

vitamin D supplements if you don't get out in the sun much.

Does it help with MS?

Research into this diet has not provided conclusive evidence of its benefits.

A five-year follow up study showed that people who had followed this diet reported they felt better physically and mentally, but there was a very high drop-out rate.

We don't know what happened to the people who dropped out of the study. This is one of the reasons it's impossible to draw firm conclusions about the diet.

Is it healthy?

Following the OMS diet isn't likely to be considered bad for you as long as you're sure to include the missing nutrients.

You should make sure you're getting enough **protein** in your diet, through eating plenty of fish, beans or pulses.

If you have high energy needs or you're underweight, excluded foods might make it harder to get the energy you need.

If you take cod liver oil supplements, you should take the same precautions around that as for the Swank diet (on page 29).

A Mediterranean diet

A Mediterranean diet is based on foods traditionally eaten in that part of the world.

It usually includes a lot of vegetables, fruits, nuts, beans, cereals, grains, fish, and unsaturated fats like olive oil. Regular - but moderate - amounts of red wine are also sometimes recommended. Red meat and dairy are limited, but not cut out completely.

Does it help with MS?

There hasn't been much research into MS and Mediterranean diets in particular, and the small amount of evidence we have doesn't prove that they affect the course of MS.

But they are usually a balanced diet, which can help you stay in the best health possible.

Is it healthy?

A Mediterranean diet is usually very similar to the Eatwell Guide that the NHS uses. We talk about the benefits of that kind of a healthy, balanced diet on pages 8 and 9 of this booklet.

The Best Bet diet

The Best Bet diet was developed by Ashton Embry, a geologist whose son has MS.

This diet recommends avoiding several different food types, including all dairy, grains and legumes (beans and pulses). It also recommends taking lots of supplements, including calcium and vitamin D.

The diet is based on the assumption that partly digested food **protein** can pass through from the intestines into the bloodstream.

The theory is that certain food proteins are able to activate the

immune system because they are similar to immune cells, leading to the symptoms of MS.

Does it help with MS?

Current research doesn't support the theory behind the diet, nor does it suggest there is any benefit to cutting out any of these food types completely.

This particular diet hasn't been tested in any research trials, so there is no evidence that it can help manage MS symptoms.

Is it healthy?

The Best Bet diet restricts a lot of foods and can be low in energy, so it might not be suitable for you if you have high energy needs or if you're already underweight. It also might not be suitable for **vegetarians** and **vegans**, as it cuts out an important source of protein.

You might need very careful planning to manage the restrictions of the diet, and to get all the recommended supplements so you don't miss out on those nutrients.

The McDougall diet

The McDougall diet is a very low-fat **vegan** diet. It was inspired by the Swank diet, but it cuts out meat, fish and dairy completely. It's high in **carbohydrates**, with lots of whole grain foods, fruit and vegetables.

Does it help with MS?

There's no research evidence that the McDougall diet has an effect on MS.

Is it healthy?

Because it's a very low-fat vegan diet, make sure you can find sources of **protein** and get enough calcium, vitamin B12 and zinc.

You might need to take supplements. You could lose weight with this diet, and it might lower cholesterol and blood pressure. If you're underweight or you've got high energy needs, this diet might not be suitable.

“Some do well on Swank, or Professor Jelinek’s diet, some on Best Bet diet and there are other diets, all of which will work for someone, somewhere. It’s worth a try, but only if you feel you really want to, or else you’ll hate your new diet and cheat wherever possible.”
Karen



EAST VS WEST
DECEMBER, 1972

Can my diet help with MS symptoms?

You might find that making changes to your diet can help you manage specific MS symptoms.

Diet is only one part of managing things, so speak to your doctor or MS nurse too. You might also want have a look at our information on fatigue or tremor, or managing bladder and bowel problems. It's all on our website mssociety.org.uk or call the MS Helpline on **0808 800 8000**.

Fatigue

If you get tired quickly, you might find it easier to eat small, frequent meals and snacks rather than large, hot meals. Try not to rely on **sugary** foods to keep your energy levels up – although these can have an initial pick-me-up effect, this is often followed by an energy low.

Starchy carbohydrates, such as potatoes, bread and pasta (particularly wholemeal), can give you a slow release of energy that can keep you going for longer. Try to make sure you eat regularly and include a snack if you have a long gap between meals. Snacks can be healthy too, like fruit or nuts.

Dehydration can lead to tiredness, so try to keep your fluid intake up. It doesn't just have to be water. Tea, fruit teas, fruit juice (but be careful of the high sugar content) and coffee can all help you stay hydrated.

If you're particularly tired, it can be tempting to drink lots of caffeine. But these drinks usually only have a temporary effect, and can leave you more tired. There's no evidence, though, that moderate amounts of tea or coffee will make you dehydrated.

Some other nutrients might help with fatigue if you include them in your usual diet:

- iron – good sources include meat, fish, beans and pulses, and **fortified** cereals. It might help to avoid drinking tea with meals (it could reduce the iron you absorb)
- Selenium – found in brazil nuts, meat, fish, seeds and wholemeal bread
- Folate – found in liver, green vegetables, citrus fruits, beans and fortified breakfast cereals
- **B vitamins** – in fortified foods including wholegrain cereals, meat, fish, eggs and dairy

“I love cooking and always loved entertaining, but now I think: what can I do that still looks impressive but that will take a lot less energy? It’s the little things for me like how you arrange it, colours, big flavours.”

Louisa

Bladder problems

If you have bladder problems – particularly problems with urgency or frequency – then you might be tempted to drink less so you don’t need to go to the toilet as often.

But this can make your urine more concentrated, which can irritate your bladder. It might make you more likely to get a urinary infection.

It helps to keep up your fluid intake. If you can, aim for about 1.5 to 2 litres (or about six to eight cups) of fluid a day.

Be careful to limit your alcohol intake, as too much can make you go to the toilet more often.

If you need to get used to drinking more, it’s best to increase your fluid intake gradually – on days when you are at home or when it is easy to get to a toilet, for example.

Cranberry juice

Cranberry juice or cranberry extract tablets are often thought to help to prevent or treat urinary tract infections.

Research studies have been carried out and the evidence suggests they don't usually help people with MS.

If you do drink cranberry juice, low-sugar versions have fewer calories and can help avoid damage to your teeth.

Tremor

If you have constant tremor it uses up calories, which might mean that you lose weight. It can also add to fatigue. Too much alcohol or caffeine might also make tremor feel worse.

You can speak to your GP or MS nurse for advice. They can refer you to a dietitian if necessary, who might give advice on how to get more energy and **protein** in your diet. For example, adding extra cheese, cream or butter

to your food adds calories. They might suggest high-energy supplements.

Bowel problems

Changes to your diet are often suggested as the first line of treatment if you have bowel problems.

Constipation - If you're experiencing constipation, keeping up a good fluid intake can help, as can a diet with plenty of **fibre**. Fibre can't be digested and passes straight through the gut.

This helps with digesting other foods and removing waste. Try to gradually increase your fibre intake – a sudden increase could make symptoms worse.

A well-balanced diet, with plenty of fruit and vegetables, can provide this fibre. Good sources include prunes (or prune juice), figs, wholemeal bread, **fortified** white bread, brown rice, porridge and wholegrain breakfast cereals.

Incontinence – If incontinence is a problem for you, it's worth experimenting with your diet to see if there are any foods that make it worse, or make your stools firmer.

High-fibre foods, caffeine, milk products, chocolate, alcohol, spicy food and artificial sweeteners can all have the effect of producing loose stools in some people.

If you keep a food diary for a few days it may help you to identify which foods help or make it worse. It may help to do this with the support of a dietitian, for guidance.

Pressure ulcers

Although pressure ulcers are not a symptom of MS, you may be at risk of developing one if you are severely affected by MS and spend a lot of time in bed or in a wheelchair.

If you are underweight this can add to the risk, because you lose the natural padding over your sitting bones and other bony points. You can speak to your GP if you, or your carers, are concerned about your weight and your risk of pressure ulcers.

A balanced diet, including foods rich in **vitamins** and **protein**, is important if you have pressure ulcers or you're at high risk of getting them.

There's more information about pressure ulcers on our website mssociety.org.uk or call the MS Helpline on **0808 800 8000**.

If MS symptoms affect your eating and drinking

MS symptoms can sometimes affect what or how we eat. This could be when advice from a health professional is particularly helpful.

You can find out more about the symptoms in this part of the booklet on our website mssociety.org.uk or by calling the MS Helpline on **0808 800 8000**.

Visual problems

Double vision or blurring might make it harder and more time consuming to prepare or eat food. We've suggested some practical things to try in 'Preparing meals' on page 41.

If you have severe visual problems, you might find it helpful if your food is set out in an agreed way. For example,

you could ask the person who prepares your meals to lay out the food as if the plate were a clock face. If the potatoes are placed at '12 o'clock' and meat at '6 o'clock', this might make it easier for you to find the food on your plate.

Tremor

If tremor makes it difficult to hold or reach for things, certain foods might be easier to eat than others. For example, finger foods or sandwiches are easier to manage than stews and soups. They can be just as nourishing. If your tremor means you need a lot of energy, extra butter, salad cream or full-fat mayonnaise can be a useful high calorie filling to add.

Small changes like eating with your elbows on the table might help – it's not bad manners if it works!

And you can get specially designed cutlery, crockery and kitchen utensils that can make preparing and eating food more manageable. There's more about preparing meals on page 41.

Swallowing difficulties

If you have problems with swallowing – also known as dysphagia – this can make eating more difficult, perhaps even stressful.

If you have difficulties chewing your food or your food and drink are going the wrong way, then ask your GP to refer you to a speech and language therapist. They can help you find ways of managing these difficulties.

After an assessment they might advise you change what you eat or how you eat. For example:

- Small, frequent meals and drinking milky drinks may be easier than large meals, and can help to make sure you're still getting enough calories

- If chewing is difficult for you, soften your food beforehand with a fork or blender, or add sauces or gravy. Avoid tough or stringy food
- Thickening agents in drinks can help prevent liquids from going down the wrong way. You can get these on prescription from your doctor, along with pre-thickened fruit juices

If you're having a lot of problems with chewing or swallowing your food, and you are losing weight or becoming dehydrated despite following the tips above, then a direct liquid feeding system might be helpful.

The most common of these is a PEG (percutaneous endoscopic gastrostomy) system. With this, the food goes directly into your stomach through a tube. You can find out more from the charity PINNT at pinnt.com, or call our MS Helpline on **0808 800 8000**.

Preparing meals

Because of symptoms like fatigue, you might find you have to plan everyday tasks like shopping or preparing food more carefully than before. The tips in this section can help make things a little easier – from planning what to eat to clearing up afterwards.

Most of these tips don't involve big, obvious changes to what you do – or to your kitchen. It's all about finding the easy, everyday improvements that work for you.

An occupational therapist (OT) can suggest energy-saving tips and helpful equipment or adaptations to make preparing food easier. They can also advise on grants for adaptations.

To arrange an OT assessment, contact social services at your local council (at your local Health and Social Care Trust in Northern

Ireland). Your GP can also make a referral for you.

Planning

- Planning a menu for the week can help cut down on shopping trips, and avoid food going to waste
- Cooking double batches and freezing the spare ones means there's always something to eat when you're not feeling up to cooking
- Even if you don't get to the shops or prepare food, get involved in planning meals for the week ahead. That way you still get to eat the food you want. This is particularly important if you have a mix of different people – family, friends and paid carers – who might all be involved in preparing meals for you
- A 'likes and dislikes' list can also help make sure you're getting a good mix of meals

that are to your taste, even if you're not the one making them. If your MS affects what you can eat, perhaps because of swallowing difficulties, you might want to work with a dietitian to compile this list so that you're still getting all the nutrition you need

If you live with other people

If you live with other people, it can be tricky if only one person wants to change their diet. It could help if others understand why you're making these changes, and why it's important to you. It might help to explain that your diet isn't a criticism of what someone else eats, or an attempt to change them.

You might be able to find meals that share many items, but you adjust what's on each plate. That way, you still feel like you're eating the same meal.

Of course, there can be health benefits for everyone if they get a balanced diet.

“I set myself up a food plan a few months ago, and with doing a monthly shop I can pretty much plan out three or four weeks' worth of meals. I'm eating so much better because of it. I think it's also good because you can start doing any prep through the day, rather than all at meal time, so you tire yourself out less.”

Louisa

Shopping

- All the major supermarkets offer a delivery service – which can save a trip to the shops, or having to carry heavy bags home. If you do your shopping online, you can usually save your regular order so you don't have to remember it each time

- Make a master shopping list of things you regularly buy and, if you can, print off multiple copies. Before going to the shops, check the list and tick off the items you've run out of. It's a simple reminder and an energy saver. And if you're having a bad day with your MS, someone else can use the same list
- Delegate tasks – can someone else in your household, or a friend, do the shopping for you?
- If shopping is too difficult, you could ask for an assessment of your needs from your local social care services department. You might be eligible for help with your shopping

COVID-19 support

Find out more about shopping during COVID-19 restrictions on our website [mssociety.org.uk](https://www.mssociety.org.uk) or call the MS Helpline on 0808 800 8000.

“I now do my main food shop online and have it delivered to my home. I find the whole shopping experience very tiring. If the supermarket is very busy, I get quite stressed and sometimes confused. I would always need to plan for a loo stop as well!”

Lyndsey

Preparing food

- Before starting to cook, gather everything you'll need together, to avoid moving around more than you need
- Some tasks can be done just as well sitting as standing. Overhanging worktops can often be fitted to kitchens to make this easier. 'Perching stools' with sloping seats (and sometimes wheels) can make it easier to get up and down. So can a stool where

you can adjust the height. An occupational therapist can tell you if you can get one through the NHS

- Adaptations to your kitchen could make things easier. For example, if you have problems with balance, grab rails can be fitted to many kitchen units and walls. Or maybe you could arrange the space so the table where you eat is close to where you prepare your food. There's more about adaptations and sources of funding on our website or call the MS Helpline
 - Using a microwave means you don't have to lift heavy pans. They can also help if heat makes your symptoms worse, because they don't warm the kitchen while cooking. Induction hotplates also warm the pans without heating the air around them
 - Can someone else help you? If you live with others, you could share tasks. Or you could take it in turns to cook, so you don't have to do it every day
- ## Gadgets
- There are gadgets that can help with almost every daily task in the kitchen. Here are some ideas.
- If you find it difficult to grip things or handle them: jar and ring pull openers; easy grip handles on cutlery, peelers and other utensils; two-handed cups; non-slip chopping boards; tap turners (large handles to fit over existing taps); and knob turners (for fiddly controls on cookers and other equipment)
 - If you find it hard to lift things: cooking baskets, to lift food in and out of pans; a wheeled trolley to move items around the kitchen; and a kettle tipper, for pouring without lifting
 - If you have sight problems: large controls and displays on cookers, microwaves and weighing scales; speaking scales; coloured tape around worktops to provide a contrast; and bright coloured chopping boards, cutlery and utensils to make them easier to spot

For more ideas, contact the Disabled Living Foundation, the RiDC or the RNIB (page 49).

If preparing food is difficult or tiring

- Ready meals can be a practical alternative. But they can be low in protein and high in salt so they may not be suitable for every day. Choose ones labelled ‘low **fat**’ or ‘healthy eating’ unless you are underweight. If you find yourself relying on them, you can ask your GP for a referral to a dietitian who can help you to find easy-to-prepare alternatives
- If you find it difficult to manage your energy levels, try to eat little and often: try a small snack between meals and a dessert after lunch and evening meal
- You might be able to get ‘meals on wheels’ delivered directly to your door. Many areas offer this service as part of a care package from social care services. Contact them for

an assessment of your needs, to see if you are eligible

- If you wouldn’t be able to prepare a cooked main meal for yourself even if you had the ingredients, you might be eligible for Personal Independence Payment (PIP). Find out more on our website or call the MS Helpline on **0808 800 8000**

“I leave plates and pans to soak, as often I can’t wash up straight away. Then they are a lot easier to wash as well.”

Carole

Clearing up

- Dishwashers can make washing the dishes less tiring. But they are not great for everyone, as they still need to be filled and emptied
- If you live with others, share the tasks – if you cooked, ask someone else to clear up

Managing your weight

Living with MS can sometimes make it harder to manage your weight, and both weight loss and weight gain can be a problem.

Weight loss

Problems with posture, swallowing, fatigue and tremor can all make shopping for food, preparing it or eating it, more difficult. And your appetite can also be affected by stress, anxiety and depression, as well as certain drug treatments.

If you are affected in any of these ways, you might find you lose weight.

If left untreated, weight loss can lead to **malnutrition**. You may not notice this at first, as the early signs of malnutrition – fatigue and muscle weakness – can also be symptoms of MS.

If you find that you're losing a lot of weight, or you're already underweight, speak to your GP. There are ways to treat the issues that might be causing you to lose weight.

If you find it difficult to get enough energy and **nutrients**, your GP might suggest you see a dietitian. They can advise you on ways to get more nutrients and energy into your diet. This could be by adding extra calories and protein to your food – known as 'fortifying'.

The British Dietetic Association has more information about how to spot malnutrition and how to treat it at [bda.uk.com](https://www.bda.uk.com) (search 'malnutrition').

Sometimes high-energy supplements are recommended. These are available either over the counter or on prescription and

should be taken between meals. If you do use them, bear in mind that they often have a lot of **sugar** in them so it's important to visit the dentist regularly. You can find more about oral health on our website mssociety.org.uk or call the MS Helpline on **0808 800 8000**.

“I found that telling everyone I was trying to lose weight was a good motivator. People kept asking how I was doing, but not in a nagging way. And it feels good to be able to say I was losing weight, and this took over from people asking how my MS was!”

Anon

Weight gain

Keeping fit and healthy can make it easier to cope with the symptoms of MS. But having MS can create extra challenges with this.

For example, if you're less active than you once were, you might find you're putting on weight when you don't want to.

Some drug treatments, including **steroids** to treat relapses, can also lead to weight gain. And if you're increasing your fluid intake, fruit juice and sugary drinks can be a big source of calories.

Stress, anxiety and depression can lead some people to comfort eat. Doing this occasionally isn't a problem, but if you find you're doing it a lot, you'll put on weight. If you think your comfort eating is due to depression, speak to your GP. Depression is treatable.

There's more information about the signs of depression on our website mssociety.org.uk or call the MS Helpline on **0808 800 8000**.

If you're trying to lose weight, healthy eating as well as regular exercise should help.

Try not to crash diet to lose weight quickly. Instead, aim to lose around 1 or 2 pounds a week (that's half to 1Kg). If you're not very mobile and you can't be active, you might find you lose weight more slowly.

If you've put on a lot of weight, you may want to speak to your GP about the best way for you to lose the weight and still get all the nutrition you need.

Our website's got lots of information about exercise and support for staying active, including videos you can use at home.

Call the MS Helpline to see how our Physical Activity support service can encourage your efforts with activity, diet and stopping smoking: **0808 800 8000**.

Useful organisations

Allergy UK

Provides information for anyone living with an allergy.

Helpline 01322 619 898

allergyuk.org

British Dietetic Association

Their Food Fact page has useful guidance on eating for health, and some key information on malnutrition.

bda.uk.com

Disabled Living Foundation (DLF)

Provides information and advice on equipment that might help with preparing and eating food.

Helpline 0300 999 0004

livingmadeeasy.org.uk

NHS websites

NHS websites have information on all aspects of healthy living, including diet and nutrition.

- nhs.uk/livewell
- Northern Ireland
nidirect.gov.uk
(search 'healthy eating')
- Scotland
nhsinform.scot
(search 'nutrition')
- Wales
11.wales.nhs.uk/diet

PINNT – Patients on Intravenous and Nasogastric Nutrition Therapy

Provides information and support for anyone using PEG or other feeding systems.

Telephone 020 3004 6193

pinnt.com

RiDC (Research Institute for Disabled Consumers)

Researches and reviews products and services of interest to disabled people. Reports include kitchen design and appliances.

Telephone **020 7427 2460**
ridc.org.uk

RNIB

Offers information and support for people with sight problems.

Helpline **0303 123 9999**
rnib.org.uk

The Vegan Society

Offers information about veganism, including meal planning and nutrition.

Telephone **0121 523 1730**
vegansociety.com

Vegetarian Society

For information on vegetarian diet, with ideas for meat-free recipes.

Telephone **0161 925 2000**
www.vegsoc.org

New words explained

Anticoagulant medications – are often called ‘blood thinners’, but these medicines don’t really thin the blood. Instead, these drugs help prevent or break up clots in your blood vessels or heart.

Antioxidants – are man-made (supplements) or natural products (fruits and vegetables) that may prevent or delay some types of cell damage in your body.

Carbohydrates – are nutrients that provide our bodies with energy. There are 3 main types:

- **Fibre** – carbohydrates that can’t be digested. Fibre is found in the plants we eat for food – fruits, vegetables, grains, and legumes. Fibre helps food move through your digestive system
- **Starches** – found in bread, pasta, rice, couscous, potatoes, breakfast cereals, oats and other grains like rye and barley

- **Sugars** – found in fruit, honey, fruit juices, milk (lactose) and vegetables

Fats – are a source of essential fatty acids such as omega-3. They are essential because your body can’t make them itself. Fat helps the body absorb vitamins A, D and E. These vitamins are fat-soluble, meaning they can only be absorbed with the help of fats. All fats are high in energy and fat not used by your body is converted into body fat.

Food allergy – we talk about food allergy when your immune system reacts to a certain types of foods such as shellfish or nuts and you start wheezing, itching and breaking out in a rash. It may possibly cause a severe reaction like breathing difficulties.

Food intolerance – we talk about food intolerance when you have a bad reaction, such as diarrhoea or cramps, to a particular type of food. When you have a food intolerance your immune system isn’t involved and you can

probably still eat small amounts of that food without it causing a reaction.

Fortified – when vitamins and minerals are added to a food to make it more nutritious.

Malnutrition – we use the term malnutrition when a person's diet doesn't contain the right amount of nutrients. You either don't get enough nutrients (undernutrition) or you get more nutrients than you need (overnutrition). Either way, being malnourished can affect your physical and mental health. And if you're malnourished you're more likely to get sick.

Neurological symptoms – we talk about neurological symptoms when we want to describe symptoms you might have as a result of the effect your MS has on your nervous system. Some of these symptoms include blurred vision, difficulty walking, weak muscles and fatigue.

Nutrients – are any substances that are absorbed and give you energy or help your body to grow, repair or function properly.

Obesity – we use the term obesity to describe when somebody is very overweight and has a lot of body fat. You're considered obese when your BMI (Body Mass Index) is over 30.

The BMI helps to calculate how much body fat you have based on your weight and height. To find out what your BMI is, you need to know your weight (in stone or kilograms) and your height (in inches or centimetres). Ask your GP to calculate your BMI for you or use the NHS BMI calculator on the [nhs.uk/livewell](https://www.nhs.uk/livewell) website.

Osteoporosis – we use the term osteoporosis when your bones are weak and can break easily. Osteoporosis is usually discovered when you've had a fall or impact and your bones, such as your wrist or hip, fracture easily.

Protein – helps the body build, maintain and repair tissue. Foods high in protein include beef, poultry, seafood, dry beans and peas, eggs, nuts, and seeds. Tofu and veggie burgers or vegetarian meat substitutes are also good sources of protein.

Scientific evidence – we use the term evidence to describe when tests have been done to prove a (medical) claim does or doesn't work. Usually, the larger the test, the more reliable the proof is, but the way tests are done also affects what we can learn from the results.

Steroids – are used to reduce inflammation and make your immune system less active. They're man-made versions of the hormones you normally produce in your adrenal glands (two small glands that sit on top of your kidneys).

Vegan diet – is a plant-based diet. A vegan does not eat any animal foods such as fish, meat, dairy, eggs and honey. A vegan avoids products made from animals such as wool or leather as well as products that are tested on animals, like cosmetics.

Vegetarian diet – is a diet of grains, pulses, nuts, seeds, vegetables and fruits with, or without, the use of dairy products and eggs. A vegetarian does not eat any meat, poultry, game, fish, shellfish or anything made from

a dead animal's body such as gelatine or rennet.

Vitamins – nutrients that your body needs to work properly. They boost the immune system, help in your growth and development, and help cells and organs do their jobs.

Further information

Resources

Our award winning information resources cover every aspect of living with MS.

You can read them online or download. And you can order printed resources from onlineshop.mssociety.org.uk or call **0300 500 8084** and select option 4.

MS Helpline

Our free MS Helpline offers confidential emotional support and information for anyone affected by MS, including family, friends and carers.

We can provide information

- in different languages through an interpreter service
- by text relay and British Sign Language interpreters

mssociety.org.uk/ms-helpline

0808 800 8000 (closed weekends and bank holidays)

helpline@mssociety.org.uk

About this resource

With thanks to all the people affected by MS and professionals who contributed to this booklet.

We'd love to hear what you think about this information.

mssociety.org.uk/yourviews

Disclaimer: We have made every effort to ensure that the information in this publication is correct. We do not accept liability for any errors or omissions. Availability and prescribing criteria for drugs in various parts of the UK may change. Seek advice from the sources listed.

References

Email us if you'd like to know the references for this information.

supportercare@mssociety.org.uk

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This resource is also available in large print.

Call **0300 500 8084** or email supportercare@mssociety.org.uk

Contact us



MS Helpline

Freephone 0808 800 8000

(closed on weekends and bank holidays)

helpline@mssociety.org.uk

MS National Centre

0300 500 8084

supportercare@mssociety.org.uk

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