

As well as vitamins and more common minerals, a healthy diet includes many other nutrients.

This section has information on:

- beta-carotene
- chromium
- copper
- magnesium
- manganese
- molybdenum
- phosphorus
- potassium
- selenium
- sodium chloride (salt)
- zinc

Beta-carotene

Beta-carotene gives yellow and orange fruit and vegetables their colour. It's turned into [vitamin A](#) in the body, so it can perform the same jobs in the body as vitamin A.

Good sources of beta-carotene

The main sources of beta-carotene are:

- yellow and green (leafy) vegetables – such as spinach, carrots and red peppers
- yellow fruit – such as mango, papaya and apricots

How much beta-carotene do I need?

You should be able to get the amount of beta-carotene you need from your daily diet.

What happens if I take too much beta-carotene?

There's no evidence the beta-carotene we get from food is harmful.

But beta-carotene supplements have been found to increase the risk of lung cancer in people who smoke or have been heavily exposed to asbestos at work.

What does the Department of Health and Social Care advise?

You should be able to get the amount of beta-carotene you need by eating a varied and balanced diet.

If you decide to take beta-carotene supplements, it's important not to take too much as this could be harmful.

Do not take more than 7mg of beta-carotene supplements a day unless advised to by a doctor.

People who smoke or who have been exposed to asbestos are advised not to take any beta-carotene supplements.

Chromium

Good sources of chromium include:

- meat
- nuts
- cereal grains

How much chromium do I need?

Around 25 micrograms of chromium a day should be enough for adults. A microgram is 1,000 times smaller than a milligram (mg).

The word microgram is sometimes written with the Greek symbol μ followed by the letter g (μg).

You should be able to get all the chromium you need by eating a varied and balanced diet.

What happens if I take too much chromium?

There's not enough evidence to know what the effects might be of taking high doses of chromium each day.

What does the Department of Health and Social Care advise?

You should be able to get all the chromium you need by eating a varied and balanced diet.

If you take chromium supplements, do not take too much as this might be harmful.

Having 10mg or less a day of chromium from food and supplements is unlikely to cause any harm.

Copper

Copper helps:

- produce red and white blood cells
- trigger the release of iron to form haemoglobin, the substance that carries oxygen around the body

It's also thought to be important for infant growth, brain development, the immune system and strong bones.

Good sources of copper

Good sources of copper include:

- nuts
- shellfish
- offal

How much copper do I need?

Adults aged 19 to 64 need 1.2mg of copper a day.

You should be able to get all the copper you need from your daily diet.

What happens if I take too much copper?

Taking high doses of copper could cause:

- stomach pain
- sickness
- [diarrhoea](#)
- damage to the liver and kidneys (if taken for a long time)

What does the Department of Health and Social Care advise?

You should be able to get all the copper you need by eating a varied and balanced diet. If you take copper supplements, do not take too much as this could be harmful.

Having 10mg or less a day of copper is unlikely to cause any harm. This includes copper from food, water and supplements.

Magnesium

Magnesium is a mineral that helps:

- turn the food we eat into energy
- make sure the parathyroid glands, which produce hormones important for bone health, work normally

Good sources of magnesium

Magnesium is found in a wide variety of foods, including:

- spinach
- nuts
- wholemeal bread

How much magnesium do I need?

The amount of magnesium you need is:

- 300mg a day for men (19 to 64 years)
- 270mg a day for women (19 to 64 years)

What happens if I take too much magnesium?

Taking high doses of magnesium (more than 400mg) for a short time can cause [diarrhoea](#).

There's not enough evidence to say what the effects might be of taking high doses of magnesium for a long time.

What does the Department of Health and Social Care advise?

You should be able to get all the magnesium you need by eating a varied and balanced diet.

If you take magnesium supplements, do not take too much as this could be harmful.

Having 400mg or less a day of magnesium from supplements is unlikely to cause any harm.

Manganese

Manganese helps make and activate some of the enzymes in the body. Enzymes are proteins that help the body carry out chemical reactions, such as breaking down food.

Good sources of manganese

Manganese is found in a variety of foods, including:

- bread
- nuts
- breakfast cereals (especially wholegrain)
- green vegetables – such as peas

How much manganese do I need?

You should be able to get all the manganese you need from your daily diet.

What happens if I take too much manganese?

Taking high doses of manganese for long periods of time might cause muscle pain, nerve damage and other symptoms, such as fatigue and depression.

What does the Department of Health and Social Care advise?

You should be able to get all the manganese you need by eating a varied and balanced diet.

If you take manganese supplements, do not take too much as this could be harmful.

For most people, taking 4mg or less of manganese supplements a day is unlikely to cause any harm.

For older people, who may be more sensitive to manganese, taking 0.5mg or less of manganese supplements a day is unlikely to cause any harm.

Molybdenum

Molybdenum helps make and activate some of the proteins involved in chemical reactions (enzymes) that help with repairing and making genetic material.

Good sources of molybdenum

Molybdenum is found in a wide variety of foods. Foods that grow above ground tend to be higher in molybdenum than foods that grow below the ground, such as potatoes or carrots.

How much molybdenum do I need?

You should be able to get all the molybdenum you need from your daily diet.

What happens if I take too much molybdenum?

There's some evidence to suggest taking molybdenum supplements might cause joint pain.

What does the Department of Health and Social Care advise?

You should be able to get all the molybdenum you need by eating a varied and balanced diet. The molybdenum we get from food is not likely to be harmful.

Phosphorus

Phosphorus is a mineral that helps build strong bones and teeth, and helps release energy from food.

Good sources of phosphorus

Phosphorus is found in many foods.

Good sources include:

- red meat
- dairy foods
- fish
- poultry
- bread
- brown rice
- oats

How much phosphorus do I need?

Adults need 550mg of phosphorus a day.

You should be able to get all the phosphorus you need from your daily diet.

What happens if I take too much phosphorus?

Taking high doses of phosphorus supplements for a short time can cause diarrhoea or stomach pain.

Taking high doses for a long time can reduce the amount of calcium in the body, which means bones are more likely to fracture.

What does the Department of Health and Social Care advise?

You should be able to get all the phosphorus you need by eating a varied and balanced diet.

If you take phosphorus supplements, it's important not to take too much as this could be harmful.

Taking 250mg or less a day of phosphorus supplements on top of the phosphorous you get from your diet is unlikely to cause any harm.

Potassium

Potassium is a mineral that helps control the balance of fluids in the body, and also helps the heart muscle work properly.

Good sources of potassium

Potassium is found in most types of food.

Good sources of potassium include:

- bananas
- some vegetables – such as broccoli, parsnips and brussels sprouts
- beans and pulses
- nuts and seeds
- fish
- beef
- chicken
- turkey

How much potassium do I need?

Adults (19 to 64 years) need 3,500mg of potassium a day. You should be able to get all the potassium you need from your daily diet.

What happens if I take too much potassium?

Taking too much potassium can cause stomach pain, feeling sick and diarrhoea.

What does the Department of Health and Social Care advise?

You should be able to get all the potassium you need by eating a varied and balanced diet.

If you take potassium supplements, do not take too much as this could be harmful.

Taking 3,700mg or less of potassium supplements a day is unlikely to have obvious harmful effects.

But older people may be more at risk of harm from potassium because their kidneys may be less able to remove potassium from the blood.

Older people should not take potassium supplements unless advised to by a doctor.

Selenium

Selenium helps the immune system work properly, as well as in reproduction. It also helps prevent damage to cells and tissues.

Good sources of selenium include:

- brazil nuts
- fish
- meat
- eggs

How much selenium do I need?

The amount of selenium you need is:

- 75µg a day for men (19 to 64 years)
- 60µg a day for women (19 to 64 years)

If you eat meat, fish or nuts, you should be able to get all the selenium you need from your daily diet.

What happens if I take too much selenium?

Too much selenium causes selenosis, a condition that, in its mildest form, can lead to loss of hair and nails.

What does the Department of Health and Social Care advise?

You should be able to get all the selenium you need by eating a varied and balanced diet that includes meat, fish or nuts.

If you take selenium supplements, it's important not to take too much as this could be harmful.

Taking 350µg or less a day of selenium supplements is unlikely to cause any harm.

Sodium chloride (salt)

Sodium chloride is commonly known as salt.

Sodium and chloride are minerals needed by the body in small amounts to help keep the level of fluids in the body balanced. Chloride also helps the body digest food.

Sources of salt

Salt is found naturally at low levels in all foods, but some salt is added to many processed foods, such as:

- ready meals
- meat products – such as bacon
- some breakfast cereals
- cheese
- tinned vegetables with added salt
- some bread
- savoury snacks

How much salt do I need?

You should have no more than 6g of salt (2.4g of sodium) a day.

But, on average, people in the UK eat approximately 8g of salt (about 3.2g of sodium) a day, which is much more than the body needs.

A few practical tips for cutting down on salt include:

- check food labels and choose foods with less salt – where colour-coded labels are used, try to pick products with more greens and ambers, and fewer reds, for a healthier choice
- choose tinned vegetables and pulses with no added salt
- choose tinned fish in spring water rather than brine
- only use sauces like soy sauce, brown sauce, ketchup and mayonnaise sparingly, as these are often high in salt

- eat fewer salty snacks, such as crisps, salted nuts, and salty foods such as bacon, cheese, pickles and smoked fish
- add less or no salt when cooking – use herbs and spices for flavour instead
- choose low-salt stock cubes, or make your own stock without added salt
- taste your food first, and do not automatically add extra salt

What happens if I have too much salt?

Having too much salt is linked to [high blood pressure](#), which raises your risk of serious problems like [strokes](#) and [heart attacks](#).

What does the Department of Health and Social Care advise?

Adults should eat no more than 6g of salt a day – that's around 1 teaspoon. On average, we eat 2.1g more salt than we should each day.

The Department of Health and Social Care advises that people cut down on salt and says sodium chloride should not be used in supplements.

Zinc

Zinc helps with:

- making new cells and enzymes
- processing carbohydrate, fat and protein in food
- wound healing

Good sources of zinc

Good sources of zinc include:

- meat
- shellfish
- dairy foods – such as cheese
- bread
- cereal products – such as wheatgerm

How much zinc do I need?

The amount of zinc you need is about:

- 9.5mg a day for men (aged 19 to 64 years)

- 7mg a day for women

You should be able to get all the zinc you need from your daily diet.

What happens if I take too much zinc?

Taking high doses of zinc reduces the amount of copper the body can absorb. This can lead to anaemia and weakening of the bones.

What does the Department of Health and Social Care advise?

You should be able to get all the zinc you need by eating a varied and balanced diet.

If you take zinc supplements, do not take too much as this could be harmful.

Do not take more than 25mg of zinc supplements a day unless advised to by a doctor.

Vitamin A, also known as retinol, has several important functions.

These include:

- helping your body's natural defence against illness and infection (the immune system) work properly
- helping vision in dim light
- keeping skin and the lining of some parts of the body, such as the nose, healthy

Good sources of vitamin A

Good sources of vitamin A (retinol) include:

- cheese
- eggs
- oily fish – such as salmon, sardines, trout, herring or mackerel
- fortified low-fat spreads
- milk and yoghurt
- liver and liver products such as liver pâté – this is a particularly rich source of vitamin A, so you may be at risk of having too much vitamin A if you have it more than once a week (if you're pregnant you should avoid eating liver or liver products – [find out about foods to avoid in pregnancy](#))

You can also get vitamin A by including good sources of [beta-carotene](#) in your diet, as the body can convert this into retinol.

The main food sources of beta-carotene are:

- yellow, red and green (leafy) vegetables, such as spinach, carrots, sweet potatoes and red peppers
- yellow fruit, such as mango, papaya and apricots

How much vitamin A do I need?

The total vitamin A content of a food is usually expressed as micrograms (µg) of retinol equivalents (RE).

The amount of vitamin A adults aged 19 to 64 need is:

- 700 µg a day for men

- 600 µg a day for women

You should be able to get all the vitamin A you need from your diet.

Any vitamin A your body does not need immediately is stored for future use. This means you do not need it every day.

What happens if I take too much vitamin A?

[Some research](#) suggests that having more than an average of 1.5 mg (1,500 µg) a day of vitamin A over many years may affect your bones, making them more likely to fracture when you're older.

This is particularly important for older people, especially women, who are already at increased risk of [osteoporosis](#), a condition that weakens bones.

If you eat liver or liver pâté more than once a week, you may be getting too much vitamin A.

Many multivitamins contain vitamin A. Other supplements, such as fish liver oil, are also high in vitamin A.

If you take supplements containing vitamin A, make sure your daily intake from food and supplements does not exceed 1.5 mg (1,500 µg).

If you eat liver every week, do not take supplements that contain vitamin A.

What does the Department of Health and Social Care advise?

You should be able to get all the vitamin A you need by eating a varied and balanced diet.

If you take a supplement that contains vitamin A, do not take too much because this could be harmful.

Liver is a very rich source of vitamin A. Do not eat liver or liver products, such as pâté, more than once a week.

You should also be aware of how much vitamin A there is in any supplements you take.

Women who have been through the [menopause](#) and older men, who are more at risk of osteoporosis, should avoid having more than 1.5mg of vitamin A a day from food and supplements.

This means:

- not eating liver or liver products, such as pâté, more than once a week, or having smaller portions of these
- taking no more than 1.5mg of vitamin A a day in supplements (including fish liver oil) if you do not eat liver or liver products
- not taking any supplements containing vitamin A (including fish liver oil) if you eat liver once a week

Having an average of 1.5mg a day or less of vitamin A from diet and supplements combined is unlikely to cause any harm.

There are many different types of vitamin B.

This section has information on:

- thiamin (vitamin B1)
- riboflavin (vitamin B2)
- niacin (vitamin B3)
- pantothenic acid
- vitamin B6
- biotin (vitamin B7)
- folate and folic acid
- vitamin B12

Thiamin (vitamin B1)

Thiamin, also known as vitamin B1, helps:

- the body break down and release energy from food
- keep the nervous system healthy

Good sources of thiamin

Thiamin is found in many types of food.

Good sources include:

- peas
- some fresh fruits (such as bananas and oranges)
- nuts
- wholegrain breads
- some fortified breakfast cereals
- liver (avoid liver if you are pregnant)

How much thiamin do I need?

The amount of thiamin adults (aged 19 to 64) need is:

- 1mg a day for men
- 0.8mg a day for women

You should be able to get all the thiamin you need from your daily diet.

Thiamin cannot be stored in the body, so you need it in your diet every day.

What happens if I take too much thiamin?

There's not enough evidence to know what the effects might be of taking high doses of thiamin supplements each day.

What does the Department of Health and Social Care advise?

You should be able to get all the thiamin you need by eating a varied and balanced diet.

If you take supplements, do not take too much as this might be harmful.

Taking 100mg or less a day of thiamin supplements is unlikely to cause any harm.

Riboflavin (vitamin B2)

Riboflavin, also known as vitamin B2, helps:

- keep skin, eyes and the nervous system healthy
- the body release energy from food

Good sources of riboflavin

Good sources of riboflavin include:

- milk
- eggs
- fortified breakfast cereals
- mushrooms
- plain yoghurt

UV light can destroy riboflavin, so ideally these foods should be kept out of direct sunlight.

How much riboflavin do I need?

The amount of riboflavin adults (aged 19 to 64) need is about:

- 1.3mg a day for men
- 1.1mg a day for women

You should be able to get all the riboflavin you need from your daily diet.

Riboflavin cannot be stored in the body, so you need it in your diet every day.

What happens if I take too much riboflavin?

There's not enough evidence to know what the effects might be of taking high doses of riboflavin supplements each day.

What does the Department of Health and Social Care advise?

You should be able to get all the riboflavin you need by eating a varied and balanced diet.

If you take supplements, do not take too much as this might be harmful.

Taking 40mg or less a day of riboflavin supplements is unlikely to cause any harm.

Niacin (vitamin B3)

Niacin, also known as vitamin B3, helps:

- the body release energy from food
- keep the nervous system and skin healthy

Good sources of niacin

There are 2 forms of niacin: nicotinic acid and nicotinamide. Both are found in food.

Good sources of niacin include:

- meat
- fish
- wheat flour
- eggs

How much niacin do I need?

The amount of niacin you need is about:

- 16.5mg a day for men
- 13.2mg a day for women

You should be able to get all the niacin you need from your daily diet.

Niacin cannot be stored in the body, so you need it in your diet every day.

What happens if I take too much niacin?

Taking high doses of nicotinic acid supplements can cause skin flushes. Taking high doses for a long time could lead to liver damage.

There's not enough evidence to know what the effects might be of taking high daily doses of nicotinamide supplements.

What does the Department of Health and Social Care advise?

You should be able to get the amount of niacin you need by eating a varied and balanced diet.

If you take niacin supplements, do not take too much as this might be harmful.

Taking 17mg or less of nicotinic acid supplements a day, or 500mg or less of nicotinamide supplements a day, is unlikely to cause any harm.

Pantothenic acid

Pantothenic acid has several functions, such as helping the body to release energy from food.

Good sources of pantothenic acid

Pantothenic acid is found in varying amounts in almost all vegetables, wholegrain foods and meats, but good sources include:

- chicken
- beef
- liver and kidneys (avoid liver if you are pregnant)
- eggs
- mushrooms
- avocado

Breakfast cereals are also a good source if they have been fortified with pantothenic acid.

How much pantothenic acid do I need?

No amount has been set in the UK for how much pantothenic acid you need.

You should be able to get all the pantothenic acid you need from your daily diet, as it's found in many foods.

Pantothenic acid cannot be stored in the body, so you need it in your diet every day.

What happens if I take too much pantothenic acid?

There's not enough evidence to know what the effects might be of taking high daily doses of pantothenic acid supplements.

What does the Department of Health and Social Care advise?

You should be able to get all the pantothenic acid you need by eating a varied and balanced diet.

If you take supplements, do not take too much as this might be harmful.

Taking 200mg or less a day of pantothenic acid in supplements is unlikely to cause any harm.

Vitamin B6

Vitamin B6, also known as pyridoxine, helps:

- the body to use and store energy from protein and carbohydrates in food
- the body form haemoglobin, the substance in red blood cells that carries oxygen around the body

Good sources of vitamin B6

Vitamin B6 is found in a wide variety of foods, including:

- pork
- poultry, such as chicken or turkey
- some fish
- peanuts
- soya beans
- wheatgerm
- oats
- bananas
- milk
- some fortified breakfast cereals

How much vitamin B6 do I need?

The amount of vitamin B6 adults (aged 19 to 64) need is about:

- 1.4mg a day for men
- 1.2mg a day for women

You should be able to get all the vitamin B6 you need from your daily diet.

The bacteria that live naturally in your bowel are also able to make vitamin B6.

What happens if I take too much vitamin B6?

When taking a supplement, it's important not to take too much.

Taking 200mg or more a day of vitamin B6 [LK2] can lead to a loss of feeling in the arms and legs known as [peripheral neuropathy](#).

This will usually improve once you stop taking the supplements.

But in a few cases when people have taken large amounts of vitamin B6, particularly for more than a few months, the effect can be permanent.

The effect of taking vitamin B6 at doses between 10 and 200 mg is unclear. So there's not enough evidence to say how long these doses could be taken for safely.

What does the Department of Health and Social Care advise?

You should be able to get the vitamin B6 you need by eating a varied and balanced diet.

If you take vitamin B6 supplements, do not take too much as this could be harmful.

Do not take more than 10mg of vitamin B6 a day in supplements unless advised to by a doctor.

Biotin (vitamin B7)

Biotin is needed in very small amounts to help the body make fatty acids.

The bacteria that live naturally in your bowel are able to make biotin, so it's not clear if you need any additional biotin from the diet.

Biotin is also found in a wide range of foods, but only at very low levels.

What happens if I take too much biotin?

There's not enough evidence to know what the effects might be of taking high daily doses of biotin supplements.

What does the Department of Health and Social Care advise?

You should be able to get all the biotin you need by eating a varied and balanced diet.

If you take biotin supplements, do not take too much as this might be harmful.

Taking 0.9mg or less a day of biotin in supplements is unlikely to cause any harm.

Folate and folic acid

Folate is a B vitamin found in many foods. The manmade form of folate is called folic acid.

Folate is also known as folacin and vitamin B9.

Folate helps:

- the body form healthy red blood cells
- reduce the risk of birth defects called neural tube defects, such as [spina bifida](#), in unborn babies

A lack of folate could lead to [folate deficiency anaemia](#).

Good sources of folate

Folate is found in small amounts in many foods.

Good sources include:

- broccoli
- brussels sprouts
- leafy green vegetables, such as cabbage, kale, spring greens and spinach
- peas
- chickpeas and kidney beans
- liver (avoid liver if you are pregnant)
- breakfast cereals fortified with folic acid

How much folate do I need?

Adults need 200 micrograms of folate a day. A microgram is 1,000 times smaller than a milligram (mg). The word microgram is sometimes written with the Greek symbol μ followed by the letter g (μg).

There are no long-term stores in the body, so you need to eat folate-containing foods frequently.

Most people should be able to get the amount of folate they need by eating a varied and balanced diet.

If you're pregnant or could get pregnant

If you're pregnant, trying for a baby, or could get pregnant, it's recommended that you take a 400 microgram folic acid supplement daily until you're 12 weeks pregnant.

Folic acid supplements need to be taken before you get pregnant, so start taking them before you stop using contraception or if there's a chance you might get pregnant.

This is to help prevent neural tube defects, such as spina bifida, in your baby.

Some women have an increased risk of having a pregnancy affected by a neural tube defect and are advised to take a higher dose of 5mg of folic acid each day until they're 12 weeks pregnant.

This is important and unlikely to cause harm, as it's taken on a short-term basis, but speak to your doctor first.

Get more advice about [vitamins and minerals during pregnancy](#), including who should take a higher dose of folic acid.

What happens if I take too much folic acid?

Taking doses of folic acid higher than 1mg can mask the [symptoms of vitamin B12 deficiency](#), which can eventually damage the nervous system if it's not spotted and treated.

This is particularly a concern for older people because it becomes more difficult to absorb vitamin B12 as you get older.

What does the Department of Health and Social Care advise?

The Department of Health and Social Care recommends that folic acid supplements are taken by all women who are pregnant or could get pregnant.

Women who cannot get pregnant and men should be able to get all the folate they need by eating a varied and balanced diet.

If you're taking folic acid supplements, it's important not to take too much as this could be harmful.

Taking 1mg or less a day of folic acid supplements is unlikely to cause any harm.

Vitamin B12

Vitamin B12 is involved in helping the body:

- make red blood cells and keeping the nervous system healthy
- release energy from food
- use folate

A lack of vitamin B12 could lead to [vitamin B12 deficiency anaemia](#).

Good sources of vitamin B12

Good sources include:

- meat
- fish
- milk
- cheese
- eggs
- some fortified breakfast cereals

How much vitamin B12 do I need?

Adults (aged 19 to 64) need about 1.5 micrograms a day of vitamin B12.

If you eat meat, fish or dairy foods, you should be able to get enough vitamin B12 from your diet.

But as vitamin B12 is not found naturally in foods such as fruit, vegetables and grains, vegans may not get enough of it.

What happens if I take too much vitamin B12?

There's not enough evidence to show what the effects may be of taking high doses of vitamin B12 supplements each day.

What does the Department of Health and Social Care advise?

You should be able to get all the vitamin B12 you need by eating a varied and balanced diet.

If you take vitamin B12 supplements, do not take too much as this could be harmful.

Taking 2mg or less a day of vitamin B12 in supplements is unlikely to cause any harm.

Vitamin C, also known as ascorbic acid, has several important functions.

These include:

- helping to protect cells and keeping them healthy
- maintaining healthy skin, blood vessels, bones and cartilage
- helping with wound healing

Good sources of vitamin C

Vitamin C is found in a wide variety of fruit and vegetables.

Good sources include:

- citrus fruit, such as oranges and orange juice
- peppers
- strawberries
- blackcurrants
- broccoli
- brussels sprouts
- potatoes

How much vitamin C do I need?

Adults aged 19 to 64 need 40mg of vitamin C a day.

You should be able to get all the vitamin C you need from your daily diet.

Vitamin C cannot be stored in the body, so you need it in your diet every day.

What happens if I take too much vitamin C?

Taking large amounts (more than 1,000mg per day) of vitamin C can cause:

- stomach pain
- [diarrhoea](#)
- [flatulence](#)

These symptoms should disappear once you stop taking vitamin C supplements.

What does the Department of Health and Social Care advise?

You should be able to get all the vitamin C you need by eating a varied and balanced diet.

If you take vitamin C supplements, do not take too much as this could be harmful. Taking less than 1,000mg of vitamin C supplements a day is unlikely to cause any harm.

Vitamin D helps regulate the amount of calcium and phosphate in the body.

These nutrients are needed to keep bones, teeth and muscles healthy.

A lack of vitamin D can lead to bone deformities such as [rickets](#) in children, and bone pain caused by a condition called osteomalacia in adults.

Government advice is that everyone should consider taking a daily vitamin D supplement during the autumn and winter.

People at high risk of not getting enough vitamin D, all children aged 1 to 4, and all babies (unless they're having more than 500ml of infant formula a day) should take a daily supplement throughout the year.

Information:

There have been some reports about vitamin D reducing the risk of coronavirus (COVID-19). But there is currently not enough evidence to support taking vitamin D solely to prevent or treat COVID-19.

Good sources of vitamin D

From about late March or early April to the end of September, most people should be able to make all the vitamin D they need from sunlight.

The body creates vitamin D from direct sunlight on the skin when outdoors.

But between October and early March we do not make enough vitamin D from sunlight.

Vitamin D is also found in a small number of foods.

Sources include:

- oily fish – such as salmon, sardines, trout, herring or mackerel
- red meat
- egg yolks
- fortified foods – such as some fat spreads and breakfast cereals

- liver (avoid liver if you're pregnant – [find out about foods to avoid in pregnancy](#))

Another source of vitamin D is dietary supplements.

In the UK, cows' milk is generally not a good source of vitamin D because it is not fortified, as it is in some other countries.

How much vitamin D do I need?

From about late March or early April to the end of September, the majority of people should be able to make all the vitamin D they need from sunlight on their skin.

Children from the age of 1 year and adults need 10 micrograms (mcg) of vitamin D a day. This includes pregnant and breastfeeding women, and people at risk of vitamin D deficiency.

Babies up to the age of 1 year need 8.5 to 10 micrograms of vitamin D a day.

A microgram (mcg) is 1,000 times smaller than a milligram (mg). The word microgram is sometimes written with the Greek symbol μ followed by the letter g (μg).

Sometimes the amount of vitamin D is expressed as International Units (IU). 1 microgram of vitamin D is equal to 40 IU. So 10 micrograms of vitamin D is equal to 400 IU.

Should I take a vitamin D supplement?

Advice for adults and children over 4 years old

During the autumn and winter, you need to get vitamin D from your diet because the sun is not strong enough for the body to make vitamin D.

But since it's difficult for people to get enough vitamin D from food alone, everyone (including pregnant and breastfeeding women) should consider taking a daily supplement containing 10 micrograms of vitamin D during the autumn and winter.

Between late March or early April to the end of September, most people can make all the vitamin D they need through sunlight on their skin and from a balanced diet.

You may choose not to take a vitamin D supplement during these months.

People at risk of vitamin D deficiency

Some people will not make enough vitamin D from sunlight because they have very little or no sunshine exposure.

The Department of Health and Social Care recommends that adults and children over 4 take a daily supplement containing 10 micrograms of vitamin D throughout the year if they:

- are not often outdoors – for example, if they're frail or housebound
- are in an institution like a care home
- usually wear clothes that cover up most of their skin when outdoors

If you have dark skin – for example you have an African, African-Caribbean or south Asian background – you may also not make enough vitamin D from sunlight.

You should consider taking a daily supplement containing 10 micrograms of vitamin D throughout the year.

Advice for infants and young children

The Department of Health and Social Care recommends that babies from birth to 1 year of age should have a daily supplement containing 8.5 to 10 micrograms of vitamin D throughout the year if they are:

- breastfed
- formula-fed and are having less than 500ml (about a pint) of infant formula a day, as infant formula is already fortified with vitamin D

Children aged 1 to 4 years old should be given a daily supplement containing 10 micrograms of vitamin D throughout the year.

You can buy vitamin D supplements or vitamin drops containing vitamin D (for under 5s) at most pharmacies and supermarkets.

Women and children who qualify for the Healthy Start scheme can get free supplements containing vitamin D.

What happens if I take too much vitamin D?

Taking too many vitamin D supplements over a long period of time can cause too much calcium to build up in the body (hypercalcaemia). This can weaken the bones and damage the kidneys and the heart.

If you choose to take vitamin D supplements, 10 micrograms a day will be enough for most people.

Do not take more than 100 micrograms (4,000 IU) of vitamin D a day as it could be harmful. This applies to adults, including pregnant and breastfeeding women and the elderly, and children aged 11 to 17 years.

Children aged 1 to 10 years should not have more than 50 micrograms (2,000 IU) a day. Infants under 12 months should not have more than 25 micrograms (1,000 IU) a day.

Some people have medical conditions that mean they may not be able to safely take as much. If in doubt, you should consult your doctor.

If your doctor has recommended you take a different amount of vitamin D, you should follow their advice.

You cannot overdose on vitamin D through exposure to sunlight. But always remember to cover up or protect your skin if you're out in the sun for long periods to reduce the risk of skin damage and skin cancer.

Vitamin E helps maintain healthy skin and eyes, and strengthen the body's natural defence against illness and infection (the immune system).

Good sources of vitamin E

Vitamin E is a group of compounds found in a wide variety of foods.

Good sources include:

- plant oils – such as rapeseed (vegetable oil), sunflower, soya, corn and olive oil
- nuts and seeds
- wheatgerm – found in cereals and cereal product

How much vitamin E do I need?

The amount of vitamin E you need is:

- 4mg a day for men
- 3mg a day for women

You should be able to get all the vitamin E you need from your diet.

Any vitamin E your body does not need immediately is stored for future use, so you do not need it in your diet every day.

What happens if I take too much vitamin E?

There is not enough evidence to know what the effects might be of taking high doses of vitamin E supplements each day.

What does the Department of Health and Social Care advise?

You should be able to get the amount of vitamin E you need by eating a varied and balanced diet.

If you take vitamin E supplements, do not take too much as this could be harmful.

Taking 540mg (800 IU) or less a day of vitamin E supplements is unlikely to cause any harm.

Vitamin K is a group of vitamins that the body needs for blood clotting, helping wounds to heal.

There's also some evidence vitamin K may help keep bones healthy.

Good sources of vitamin K

Vitamin K is found in:

- green leafy vegetables – such as broccoli and spinach
- vegetable oils
- cereal grains

Small amounts can also be found in meat and dairy foods.

How much vitamin K do I need?

Adults need approximately 1 microgram a day of vitamin K for each kilogram of their body weight.

For example, someone who weighs 65kg would need 65 micrograms a day of vitamin K, while a person who weighs 75kg would need 75 micrograms a day.

A microgram is 1,000 times smaller than a milligram (mg). The word microgram is sometimes written with the Greek symbol μ followed by the letter g (μg).

You should be able to get all the vitamin K you need by eating a varied and balanced diet.

Any vitamin K your body does not need immediately is stored in the liver for future use, so you do not need it in your diet every day.

What happens if I take too much vitamin K?

There's not enough evidence to know what the effects might be of taking high doses of vitamin K supplements each day.

What does the Department of Health and Social Care advise?

You should be able to get all the vitamin K you need by eating a varied and balanced diet.

If you take vitamin K supplements, do not take too much as this might be harmful.

Taking 1mg or less of vitamin K supplements a day is unlikely to cause any harm.

Calcium has several important functions.

These include:

- helping build bones and keep teeth healthy
- regulating muscle contractions, including your heartbeat
- making sure blood clots normally

A lack of calcium could lead to a condition called [rickets](#) in children, and osteomalacia or [osteoporosis](#) in later life.

Sources of calcium

Sources of calcium include:

- milk, cheese and other dairy foods
- green leafy vegetables – such as curly kale, okra but not spinach (spinach does contain high levels of calcium but the body cannot digest it all)
- soya drinks with added calcium
- bread and anything made with fortified flour
- fish where you eat the bones – such as sardines and pilchards

How much calcium do I need?

Adults aged 19 to 64 and over need 700mg of calcium a day.

You should be able to get all the calcium you need from your daily diet.

What happens if I take too much calcium?

Taking high doses of calcium (more than 1,500mg a day) could lead to stomach pain and [diarrhoea](#).

What does the Department of Health and Social Care advise?

You should be able to get all the calcium you need by eating a varied and balanced diet.

If you take calcium supplements, do not take too much as this could be harmful.

Taking 1,500mg or less a day is unlikely to cause any harm.

Iodine helps make thyroid hormones, which help keep cells and the metabolic rate (the speed at which chemical reactions take place in the body) healthy.

Good sources of iodine

Good food sources of iodine include:

- cows' milk and dairy products
- eggs
- sea fish
- shellfish

Iodine can also be found in plant foods, such as cereals and grains, but the levels vary depending on the amount of iodine in the soil where the plants are grown.

How much iodine do I need?

Adults need 140 micrograms (µg) of iodine a day.

Most people should be able to get all the iodine they need by eating a varied and balanced diet.

If you are following a strict vegan diet and do not eat any fish, eggs, cows' milk or other dairy products, then you may want to consider foods fortified with iodine or consider taking an iodine supplement.

Some types of plant-based drinks (such as soya or oat) are also fortified with iodine. Check the label to see if it includes iodine.

If you are considering taking a supplement seek advice from a healthcare professional.

What happens if I take too much iodine?

Taking high doses of iodine for long periods of time could change the way your thyroid gland works.

This can lead to a wide range of different symptoms, such as weight gain.

If you take iodine supplements, do not take too much as this could be harmful.

Taking 0.5mg or less a day of iodine supplements is unlikely to cause any harm.

What does the Department of Health and Social Care advise?

You should be able to get all the iodine you need by eating a varied and balanced diet.

If you take iodine supplements, do not take too much as this could be harmful.

Taking 0.5mg or less a day of iodine supplements is unlikely to cause any harm.

Iron is important in making red blood cells, which carry oxygen around the body.

Good sources of iron

Good sources of iron include:

- liver (but [avoid this during pregnancy](#))
- red meat
- beans, such as red kidney beans, edamame beans and chickpeas
- nuts
- dried fruit – such as dried apricots
- fortified breakfast cereals
- soy bean flour

Information:

Department of Health and Social Care advice is to limit the amount of red and processed meat you eat. This is due to the probable link with bowel cancer.

How much iron do I need?

The amount of iron you need is:

- 8.7mg a day for men aged 19 and over
- 14.8mg a day for women aged 19 to 49
- 8.7mg a day for women aged 50 and over

Women having periods after the age of 50 may need the same amount of iron as women aged 19 to 49.

You should be able to get all the iron you need from your daily diet.

Women who lose a lot of blood during their monthly period ([heavy periods](#)) are at higher risk of iron deficiency anaemia and may need to take iron supplements.

Speak to a GP or a registered dietitian for more advice.

What happens if I take too much iron?

Side effects of taking high doses (over 20mg) of iron include:

- [constipation](#)

- feeling sick
- being sick
- stomach pain

Very high doses of iron can be fatal, particularly if taken by children, so always keep iron supplements out of the reach of children.

What does the Department of Health and Social Care advise?

Most people should be able to get all the iron they need by eating a varied and balanced diet. If you take iron supplements, do not take too much as this could be harmful.

Taking 17mg or less a day of iron supplements is unlikely to cause any harm. But continue taking a higher dose if advised to by a GP.