

Hypertension

(High Blood Pressure)



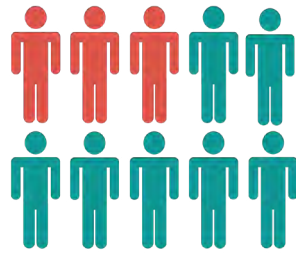
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Why does blood pressure matter?

High blood pressure, or hypertension (HTN), affects around **30%** of adults in England



(**60%** of adults aged 65+) approximately **a third** of those are **undiagnosed** and **half** are **untreated** (not taking medications).

What is Hypertension?



blood flow

Blood pressure is created by the force of blood pushing against the walls of blood vessels (arteries) as it is pumped by the heart. The **higher the pressure** the **harder the heart has to pump**.

Blood pressure is written as **two numbers**. The **first (systolic)** number represents the **pressure in blood vessels** when the heart **contracts or beats**. The **second (diastolic)** number represents the **pressure in the vessels** when the heart **relaxes between beats**. They are both measured in millimetres of mercury (mmHg).

High blood pressure is the most important **modifiable risk factor** for

stroke

vascular dementia

coronary artery disease (which leads to angina, heart attacks, and heart failure)

chronic kidney disease

brain

heart

kidneys

It is one of the most **preventable** and **treatable** causes of premature deaths worldwide.

There is **strong evidence** that **action to lower blood pressure reduces the risk of these conditions**. This is because if your **blood pressure is too high**, it puts **extra strain** on your heart and on the **blood vessels in your heart and other organs**, such as the **brain, kidneys and eyes**.

Hypertension is **diagnosed** if your blood pressure is **140/90mmHg or more** if your reading was taken at a **pharmacy, GP surgery or clinic**, or an average of **135/85mmHg or more** if it was taken at home.

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Symptoms


Very high blood pressure can **cause symptoms** such as headaches, blurred vision, chest pain, nausea and vomiting, nosebleeds, and confusion.

However, hypertension usually has no symptoms; therefore, **it is important to have your blood pressure checked.**

The NHS advises **everyone over age 40** does this **every 5 years**, and that people from **African, African-Caribbean or South Asian heritage** may have high blood pressure at a **younger age**, so should get their blood pressure checked earlier.

You can do this at home with your own **blood pressure monitor**, or at your **local pharmacy**, or speak to your **GP**, who can also **assess your risk** alongside other associated health conditions.

If you are worried about any symptoms or your readings are high, **always speak to your doctor.**



What increases the risk of having high blood pressure?

- 1** Being overweight or obese
- 2** Being sedentary (or not being physically active)
- 3** Having too much salt in your diet
- 4** Drinking too much alcohol
- 5** Smoking



- 6** Caffeine
- 7** Stress
- 8** Ethnicity (African, African-Caribbean or South Asian background)
- 9** Genetics
- 10** Older age



Prevention

Positive lifestyle changes can reduce your chances of getting high blood pressure or can help to lower blood pressure if it is already high.



They can sometimes even **eliminate the need for medications.**



As you can see, from the list above, the **first 7** out of the **10 risk factors** listed can be modified with **lifestyle changes.**

Increasing physical activity, reducing or eliminating alcohol, managing stress, and stopping smoking can all help to **reduce risk of hypertension.** Having a healthy body weight **reduces your risk of HTN**, and we know that **consuming a healthy plant-based diet helps people to achieve this.**

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How does **diet** impact my blood pressure?

People who follow a **plant-based diet** typically have **lower blood pressure** than those who consume animal products.

There are many components of a whole food plant-based diet (WFPBD) that contribute to this - from **increasing the nutrients that benefit blood pressure control**, to **eliminating or reducing the harmful components of animal foods and ultra-processed foods** that negatively impact blood pressure.

Positive effects of food



fibre

Whole plant foods are generally **low in fat** and **high in fibre**, so they are **filling** and help to **maintain a healthy body weight**, which **reduces** the risk of HTN.

omega-3 fatty acids

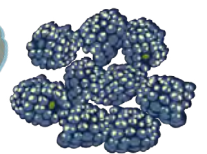
Increasing the amount of plants you consume will **increase your folate intake**. People with a higher folate intake have been shown to have a **lower risk of developing HTN**.



folate

Polyphenols and other **phytonutrients** (plant nutrients) found **only in minimally processed plant foods** are associated with **improved blood pressure levels**. This is through several mechanisms, including an **antioxidant effect** and through **protection of the blood vessel walls**. These compounds are **found richly** in foods such as berries, deep-coloured vegetables, cocoa, green tea, nuts and wholegrains.

polyphenols



Nitrates from **vegetables**, especially **beetroot** and **dark leafy greens** (as opposed to those found in processed meats) **promote relaxation and widening of the blood vessels**, which **reduces** blood pressure.

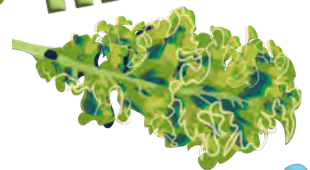


nitrates

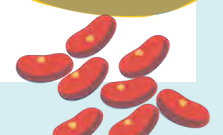
Omega-3 fatty acids found in **walnuts, hemp, flax and chia seeds** also help to **relax and dilate blood vessels**. We can also supplement with **long-chain omega-3 fatty acids** by having **algae-derived omega-3 supplements**.

magnesium

Magnesium has similar **beneficial effects on blood vessels**, helping to **prevent and treat hypertension**. Magnesium is found in **leafy greens, beans and lentils, seeds, nuts and wholegrains**.



potassium



Eating **plenty** of starchy and non-starchy **vegetables** and other foods like **tofu, avocado, bananas and beans** provides **potassium**. Increasing the proportion of potassium compared to sodium in our diet **improves** blood pressure control.

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What does this mean?

What should I eat?

Base your meals and snacks around **whole plant foods**.

This includes:



Fruit



Vegetables



Wholegrains



Herbs and spices



Legumes



Nuts and seeds

(beans, lentils, soya and chickpeas)

Always consider if there are any **whole plant foods** you can add to your meal, or any **swaps** you can make to avoid the less healthy foods and **include more plants**.

Wholegrains, or **starchy vegetables** such as sweet potatoes or baked potatoes, are a good basis to a meal – remember to **keep the skin on potatoes** and **avoid high-fat toppings** such as butter and cheese.

Foods that have been shown to **lower blood pressure** include **wholegrains**; **beetroot and beetroot juice**; **green vegetables** such as **Brussel sprouts**, **kale** and **broccoli**; **oats**; **tea** - particularly **hibiscus** and **green tea**; **cacao** (in the form of **cacao powder** or **nibs**, or **dark chocolate**); **flaxseeds**, and **garlic**.

Choosing **whole plant foods** will naturally increase your **fibre intake**. Remember to choose **wholegrain** versions of **bread**, **rice** and **pasta**, and don't forget to try some other grains too, such as **buckwheat**, **quinoa**, **oats** and **rye**.

Remember to **include** your sources of **omega-3 fatty acids** – at least **1 tablespoon of ground flax** or **chia seeds**, **2 tbsp of hemp seeds** or about **6 walnut halves**. These can be scattered on your breakfasts, soups or salads.

Use plenty of **fresh** and **dried herbs** and **spices** rather than **too much salt** to flavour foods, and adding **citrus** or **vinegar** brightens up the flavour profile.

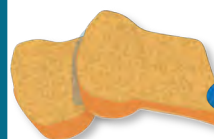
Top foods and drinks to lower blood pressure

Flaxseeds - at least 30g per day



Whole grains 3 portions a day

e.g. Portion wholegrain rice



Wholemeal bread



Oats porridge



Beetroot juice 250ml per day



Hibiscus tea 2-3 cups per day



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What should I avoid or limit?

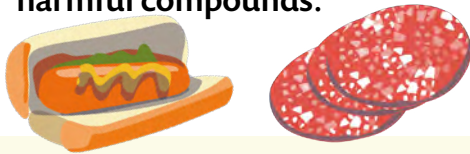
Limit sodium to **2.5 grams/day** - equal to **6 grams (1 teaspoon)** of **table salt**. Salts such as **pink Himalayan salt**, **sea salt** (e.g. Maldon sea salt) and **rock salt** all consist of around **99% sodium chloride**, which is the same as **table salt**.

Regardless of the salt's colour or price, it is the **sodium** content that matters. **Excess sodium impacts** fluid balance, **increasing** blood pressure. Most dietary sodium comes from **processed foods**, **meats**, **cheeses**, **sauces**, and **gravies**, not from home-cooked meals.



Eating **whole plant foods** naturally **reduces** sodium intake and **increases** potassium. **Avoid** adding **large amounts** of salt during cooking and keep salty condiments **off the table**. If needed, **use potassium salt** **unless advised otherwise by a doctor** due to kidney issues.

Eliminate red and processed meats such as **bacon**, **sausages**, **ham**, **burgers**, **tinned meats** and **salami**. We know these are a **direct cause of cancer** and are also **high** in **salt**, **saturated fat** and other harmful compounds.



Saturated fat contributes to the **stiffening** and **narrowing** of the walls of our blood vessels which **increases** blood pressure.



Eliminate all other animal products – **poultry**, **fish**, **eggs**, and **dairy**. Animal products have **no fibre**, are **high** in **saturated fat** and **do not** contain many of the **beneficial nutrients** found in plants.



Limit highly processed foods, refined carbohydrates and sugar-sweetened beverages to reduce intake of **sodium**, **fructose** and **saturated fat**.



These foods **directly impact** blood pressure, and are **low** in nutrients and **fibre** but **high** in **calories**, contributing to weight gain.



Avoid alcohol. It **raises** the risk of hypertensive heart disease, and other **critical conditions** caused by high blood pressure such as **haemorrhagic stroke** and **aortic aneurysm**. The **harm** from alcohol **outweighs any benefits** from plant compounds in drinks like **red wine**. It's better to get these **benefits** from **eating grapes** **directly**.



Caffeine

Evidence on caffeine is **mixed**: some **research** shows it **raises** blood pressure, especially in those **prone to HTN**, while **other studies** suggest **polyphenols in coffee** may be **protective**. This variation might be due to **genetic differences in caffeine metabolism**. Therefore, seek individual advice, but **reducing** caffeine intake **may be worth trying** if you have high blood pressure.



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Dietary supplements

Please refer to our [Plant-Based Eatwell Guide](#) for guidance on what supplements we advise you take if you are eating a **100% or predominantly plant-based diet**.

Other lifestyle factors

Physical Activity

Incorporating **more movement** and planned **physical activity** into your routine has **positive benefits** on your blood pressure. All forms of physical activity have been shown to **lower blood pressure**.

This includes:



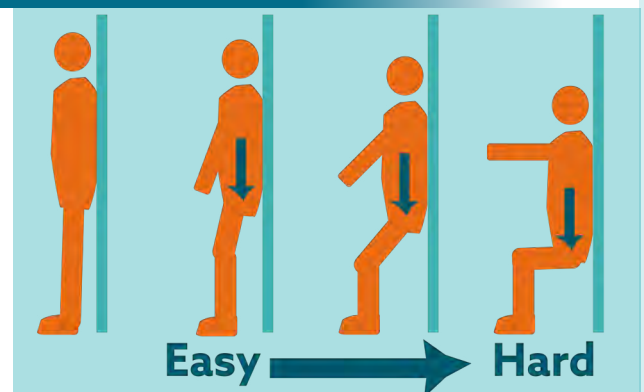
But **isometric exercise training** has been shown to be **most effective** in reducing both **systolic and diastolic blood pressure**.

What is Isometric Exercise Training?

This simply means **holding certain movements** for a **short length of time**, resting and repeating.

A good example is a **wall squat**. This is simply **holding a chair position** (or a less severe angle) whilst leaning your back against a wall. You can select your own **knee joint angle** according to ability and perceived effort. You could **start with RPE** (rate of perceived exertion) at **3-4/10**, gradually increasing to **8-9/10** for your **4th hold/bout**.

Videos can be found online for isometric **home exercises** that can be done with **no equipment** or with the use of **minimal equipment** such as **resistance bands**. This sort of strength training (and other forms) will not only **benefit blood pressure** but will also help you to **maintain muscle mass**, **bone strength** and **stability** as you age.



One example protocol is to **hold the position for 2 minutes**, rest for **1-4 minutes**, then **repeat x4**, **3 times a week**.

And remember, for general health we should include **aerobic, resistance and balance movements every week**.

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The best activities are those you enjoy and will therefore do consistently.

Doing activities with **others** can **reduce stress** and **positively affect blood pressure**. Try group activities like **dancing, bowling, walking, or gym classes** to build **social connections**.



Physical activity lowers blood pressure most significantly in those who **already suffer** with hypertension, making it a **very effective treatment and intervention**.

Managing Stress

Stress contributes to high blood pressure. **Chronic, or long-term stress is particularly harmful.**

Learn to manage your stress through spending time in nature; practicing mindfulness, meditation, yoga or journaling; and finding other activities that help you to relax and stay calm.

Fostering **healthy relationships** and managing **expectations** of yourself and others is a key pillar of a healthy lifestyle.



Stop smoking

The **chemicals** in tobacco smoke can **harm your heart and blood vessels**. **Speak to your GP** about the local support available to help you to **stop smoking** and ask your loved ones for their **support** and **encouragement**.



Please note:

If you are planning to make significant improvements to the quality of your diet and lifestyle, **speak to your healthcare professionals so that they can support you.**

It is possible that you **may need to lower your blood pressure (and other medications)**, and even be able to **stop them** over the course of time.

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