



## PATIENT FACTSHEET: Hypertension & Diet

How to prevent and reverse high blood pressure with nutrition

### Why do I need to care about my blood pressure?

High blood pressure, or hypertension, is a major risk factor for early death (1), accounting for 9 million lives annually (3).

Half of those with hypertension are unaware of their condition (2).

Approximately 1.4 billion people, or one in four adults, have high blood pressure.

Hypertension is associated with cardiovascular disease, including heart attack and stroke, as well as kidney failure.

While ageing and genetics contribute, lifestyle choices such as obesity, physical inactivity, sodium intake, smoking, and alcohol consumption play a significant role.

Dietary changes to a more healthful eating pattern can effectively reduce blood pressure and sometimes eliminate the need for medication.

**"1.4 billion people  
have high blood  
pressure.  
Half of them don't  
know it."**

(World Health Organization)

### How is my blood pressure influenced by my diet?



Excess body fat is associated with increased blood pressure. Lowering body weight decreases blood pressure.



**Sodium intake** increases extracellular fluid (4). This extra fluid puts more pressure on the walls of the blood vessels.



Excess **fructose** (from processed foods and sugary drinks) leads to an increase in serum uric acid. Fructose directly promotes reabsorption of sodium in the intestines and by the kidneys.



Natural fructose from fruit does not exhibit the same effect and is safe to consume.



**Caffeine** can increase blood pressure for people who are not regular coffee drinkers (5), but recent evidence suggests that the polyphenols and antioxidants in coffee may have a protective effect (6). As this research is somewhat conflicting, speak to your doctor about your individual situation.



**Saturated fats and trans fats** impair blood vessel wall function. Saturated fat is found in meat, dairy products (such as cheese) and palm oils.



**Trans fats** are found in processed baked goods such as cookies and snack foods.



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### How is my blood pressure influenced by my diet?



**Omega-3 Fatty acids** improve blood vessel wall function and assist in the relaxation of blood vessels (7). This ‘vasodilation’ helps lower blood pressure. Omega-3 fats can be found in **walnuts, chia seeds and flax seeds**.



Supplemental omega-3 is available from **algae and ahi flower extracts**.



**Antioxidants** from **fruits and vegetables** help stop cholesterol molecule oxidation. This protects the blood vessel walls and limits the formation of fatty plaque deposits and atherosclerosis (8).



**Nitrates** from **vegetables** (especially beets) promote vasodilation of blood vessels and are anti-hypertensive (9).



**"Regular cardiovascular exercise such as walking, dancing, bike riding, tennis or swimming can lower blood pressure".**

(Mayo Clinic)

### Key Take Aways

- International guidelines recommend dietary changes as a fundamental and continuous treatment for high blood pressure.
- An optimal diet reduces hypertension and the risk of complications such as coronary heart disease, stroke, and kidney failure.
- The optimal diet is low in sodium (less than 2 g per day of sodium or less than 5 g per day of table salt) and high in whole plant foods such as whole grains, legumes, fruits, vegetables and herbs and spices.



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### What to Eat



Maximise the intake of high-quality **whole plant foods** such as **vegetables, whole grains, legumes, fruits, nuts, seeds, herbs, and spices**; your health will benefit from every step towards more whole plant foods.



**Fibre** is especially important to tackle hypertension. Always choose **whole-grain** options of **pasta, bread, flour and rice**.



Include **nuts and legumes** in your diet, and get extra **omega-3** fatty acids with a daily tablespoon or two of **ground flaxseed, chia seeds or walnuts** (e.g., in your muesli or on your salad).



Eat foods **low in sodium** but high in calcium, magnesium and potassium such as **tofu, bananas and leafy greens**.

Regularly include some of the following foods as they are especially effective against hypertension: **beets and beetroot juice (9), green vegetables (broccoli, kale, brussels sprouts, bok choy), garlic, oats, green tea, hibiscus tea, and dark chocolate**.



Also beneficial are **avocados, sweet potatoes, edamame, beans and lentils**.

Eat foods high in water content such as **watermelon, cucumber and berries**.



### What to Avoid



Limit sodium to less than 2 g per day (or 5 g table salt).



**Avoid processed foods** (which are generally high in salt), and experiment with different spices and herbs to give flavour to your food while reducing the amount of salt.



Eliminate or limit all **processed foods, refined carbohydrates, and sugar-sweetened foods and beverages**.



Eliminate red and processed meat products such as **burgers, sausages, bacon, ham, salami, dried meat, canned meat, and pastrami (12)**.

Eliminate or limit other animal products such as **poultry, fish, eggs, cheese, and dairy**.



Make sure to cover potentially critical nutrients with a wide variety of plant foods or enriched foods/drinks. Supplements, especially **vitamin B12, omega-3 and vitamin D** may be helpful. Please consult with your primary care physician first.



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### The Science

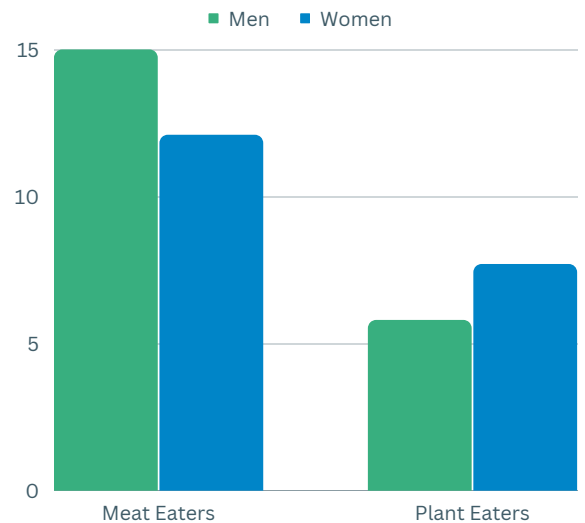
People who eat a plant-based diet are less likely to have high blood pressure.

The UK EPIC study surveyed eleven thousand people and collected information on dietary patterns and blood pressure. More meat eaters reported having hypertension than vegans.

Whilst 15.0% of male and 12.1% of female meat eaters reported high blood pressure, only 5.8% of male and 7.7% of female vegans reported hypertension.

Across all participants, eating meat resulted in higher blood pressure than not eating meat, regardless of hypertension status (10).

Percentage of people with hypertension



The DASH diet can reduce blood pressure. DASH stands for the Dietary Approach to Stop Hypertension.

The DASH diet is high in whole grains, fruits, vegetables, low-fat dairy products, legumes and nuts and seeds. It is low in red and processed meat as well as low in sugar-sweetened foods and beverages (11).

A vegan DASH diet swaps out dairy products for non-dairy calcium foods such as leafy greens and fortified plant milks and tofu.

### References

1. International Society of Hypertension. Available at: <https://ish-world.com/background-information/>
2. World Health Organization. Available at: <https://www.who.int/news-room/fact-sheets/detail/hypertension>
3. World Health Organization. Available at: <https://apps.who.int/iris/handle/10665/79059>
4. Grillo A, et al., 2019. Available at: <https://pubmed.ncbi.nlm.nih.gov/31438636/>
5. Nurminen ML, et al., 1999. Available at: <https://pubmed.ncbi.nlm.nih.gov/10556993/>
6. Borghi, 2022. Available at: <https://pubmed.ncbi.nlm.nih.gov/36316990/>
7. Zehr KR & Walker MK, 2018. Available at: <https://pubmed.ncbi.nlm.nih.gov/28802571/>
8. Malekmohammad et al., 2019. Available at: <https://pubmed.ncbi.nlm.nih.gov/31349600/>
9. Siervo M, et al., 2013. Available at: <https://pubmed.ncbi.nlm.nih.gov/23596162/>
10. Appleby et al., 2002. Available at: <https://pubmed.ncbi.nlm.nih.gov/12372158/>
11. Appel et al., 1997. Available at: <https://pubmed.ncbi.nlm.nih.gov/9099655/>
12. IARC, 2018. Available at: <https://publications.iarc.fr/Book-And-Report-Series/Iarc-Monographs-On-The-Identification-Of-Carcinogenic-Hazards-To-Humans/Red-Meat-And-Processed-Meat-2018>.