



Beating Blood Pressure

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Blood pressure is the force exerted by circulating blood against the walls of the arteries. Arteries are the blood vessels responsible for carrying blood away from the heart. Blood pressure is recorded as systolic/diastolic pressure (e.g., 120/80 mmHg). Systolic blood pressure represents the pressure exerted on artery walls when the heart contracts and pumps blood. Diastolic blood pressure represents the pressure in the arteries when the heart relaxes between beats. Hypertension (high blood pressure) is generally defined as:

- Systolic blood pressure ≥ 140 mmHg; and/or
- Diastolic blood pressure ≥ 90 mmHg.

Individuals who require blood pressure-lowering medication to maintain normal readings are also considered to have hypertension. Research has shown that cardiovascular health risks begin to increase progressively once blood pressure rises above approximately 110/70 mmHg, even though values below 140/90 mmHg are generally considered within the normal range.

Hypertension is a multifactorial condition with a wide range of contributing factors, including:

1. Poor dietary habits.
2. Excessive alcohol consumption.
3. Insufficient physical activity.
4. Excess body weight, particularly abdominal obesity.
5. Smoking.
6. Chronic stress and ineffective stress management.
7. Family history and genetic predisposition to high blood pressure.
8. Medical conditions such as: Chronic kidney disease, insulin resistance and elevated blood glucose levels, sleep apnoea, adrenal gland and thyroid disorders, certain autoimmune diseases, and mental health conditions, including depression and anxiety.
9. Medications, including: long-term use of anti-inflammatory drugs, corticosteroids, oral contraceptive pills, stimulant medications, and certain antidepressants.



If left untreated, hypertension can adversely affect multiple organs and body systems, potentially leading to serious health complications.

- Cardiovascular: heart attack, heart failure, atherosclerosis, aneurysms
- Brain: Stroke, TIA, dementia, cognitive impairment
- Blood vessels: peripheral artery disease, aortic dissection
- Kidney: Chronic kidney disease, kidney failure
- Eyes: Damage to retina blood vessels, and the optic nerves
- Insulin resistance
- Sexual dysfunction

The encouraging news is that hypertension is largely influenced by lifestyle factors. Adopting healthy lifestyle practices can substantially reduce both the risk of developing high blood pressure and its associated health complications.

According to estimates from the Australian Burden of Disease Study, approximately 21% of the burden of high blood pressure in Australia is attributable to diets high in sodium. For many individuals, reducing dietary salt intake can result in significant improvements in blood pressure. Benefits of a low sodium diet:

- Reduces systolic and diastolic BP
- Maintains elasticity and function of the blood vessels
- Enhances kidney function
- Decreases fluid retention



The relationship between sodium and health is not simply a matter of eliminating salt entirely. While reducing excessive sodium intake is beneficial within the context of a typical Western diet, which often contains excessive amounts of salt, a diet devoid of sodium can be harmful. Sodium is an essential mineral that plays a critical role in numerous physiological functions, including:

- Regulation of fluid balance
- Maintenance of acid-base balance
- Support of nutrient absorption
- Facilitation of nerve function
- Assistance with muscle contractions

Salt has a rich and fascinating history that stretches back thousands of years. In ancient times, it was considered a precious and highly valuable commodity. Beyond enhancing the flavour of food, salt played a vital role in preserving food long before the advent of refrigeration. Its value was so significant that it was often used as a form of trade and

currency. However, salt carries a meaning that extends far beyond its practical uses. It also has profound spiritual significance. Jesus spoke these remarkable words during His Sermon on the Mount:

"You are the salt of the earth; but if the salt loses its flavour, how shall it be seasoned? It is then good for nothing but to be thrown out and trampled underfoot by men. You are the light of the world. A city that is set on a hill cannot be hidden. Nor do they light a lamp and put it under a basket, but on a lampstand, and it gives light to all who are in the house. Let your light so shine before men, that they may see your good works and glorify your Father in heaven." Matthew 5:13–16.



These words have special meaning to me. Since becoming a Christian, I have sought to be the salt and light that Jesus calls His followers to be. This includes sharing the positive impact that faith has had on my mental, emotional, and physical well-being, as well as the greatest gift of all—the salvation, peace, forgiveness, and eternal life made possible through the death and resurrection of Jesus Christ. Ultimately, it is God who is the salt and light in my life—the source of the hope, purpose, peace, and joy that give life its deepest meaning.

The Bible speaks positively about salt on at least two occasions, reminding us that it has an important place in both history and health. However, as with many aspects of nutrition, balance is essential.

Sodium is a vital mineral required for normal bodily function. Adults require a minimum intake of approximately 500 mg of sodium per day, while the recommended upper limit is around 2,400 mg per day. An optimal intake for most adults is approximately 1,800 mg daily. In practical terms, this equates to roughly ½ to 1 teaspoon of table salt per day, taking into account both naturally occurring sodium in foods and added salt. Consuming sodium beyond recommended levels can contribute to elevated blood pressure and increase the risk of hypertension.



Potassium is one of the most important minerals involved in blood pressure regulation. One of its primary functions is to counterbalance the effects of sodium. While excessive sodium intake can increase blood

pressure, potassium helps promote the excretion of sodium through the urine, thereby reducing its impact on the cardiovascular system. In addition, potassium supports healthy blood vessel function by helping blood vessel walls relax, improving blood flow and reducing vascular resistance. Higher dietary potassium intake has consistently been associated with lower blood pressure and reduced cardiovascular risk. Excellent sources of potassium include spinach and other leafy green vegetables, avocados, watermelon, potatoes, broccoli, legumes, including beans, chickpeas and lentils, and bananas.

Magnesium is another essential mineral that plays a significant role in maintaining healthy blood pressure levels. It helps promote the relaxation and dilation of blood vessels, reducing resistance to blood flow and supporting healthy circulation.



Magnesium acts as a natural calcium-channel blocker, limiting the movement of calcium into the smooth muscle cells of the heart and blood vessels. This action helps blood vessels remain relaxed and flexible. Magnesium also contributes to maintaining the body's electrolyte balance, working alongside sodium, potassium, and calcium to regulate fluid balance and vascular function. Furthermore, magnesium possesses anti-inflammatory properties, which may help protect blood vessels from damage and contribute to long-term cardiovascular health. Fortunately, magnesium is widely available in healthy foods. Rich dietary sources include leafy green vegetables, nuts and seeds, whole grains, legumes.

A whole-food plant-based diet is one of the most extensively studied dietary patterns for the prevention and management of hypertension. This approach emphasises minimally processed plant foods while limiting or excluding animal products and highly processed foods. The diet centres on fruits, vegetables, legumes, nuts and seeds, and whole grains. These foods are naturally rich in fibre, antioxidants, potassium, magnesium, and numerous beneficial plant compounds that support cardiovascular health. Research consistently demonstrates that the more plant-based a person's diet becomes, the greater the potential reduction in blood pressure. Individuals following fully plant-based dietary patterns generally have lower average blood pressure levels than lacto-ovo vegetarians (those who still eat dairy and eggs, but no meat), while those consuming meat typically experience the highest rates of hypertension and blood pressure medication use. Studies have shown that transitioning from a typical Western dietary pattern to a whole-food plant-based diet can result in substantial reductions in blood pressure, with some individuals experiencing decreases approaching 30 mmHg. In a study that involved nearly 90 000 people – it found that those who only ate meat about once a week had a 23% lower rate of hypertension. Cutting out all meat, except fish reduced the risk by 38%. Removing all meat, but still having eggs and dairy reduced the risk by 55%, and completely, plant-based reduced risk by 75%. Importantly, meaningful improvements in blood pressure can often be observed within the first few weeks of adopting a whole-food plant-based eating pattern.

Certain foods have demonstrated particularly strong benefits for blood pressure management and cardiovascular health.

1. Leafy Green Vegetables: spinach, kale, and swiss chard
Benefits:

- Rich in potassium, magnesium, and calcium.
- Support healthy blood pressure regulation.
- High in fibre and nutrient density while being naturally low in calories.

2. Berries: blueberries, strawberries, and raspberries.
Benefits:

- Rich in flavonoids and other antioxidants.
- Associated with improved blood vessel function.

- Linked to lower blood pressure and reduced cardiovascular risk.

3. Chia Seeds and Flaxseeds

Benefits:

- Excellent sources of fibre and omega-3 fatty acids.
- Support heart and vascular health.
- Research suggests flaxseed consumption may produce clinically significant reductions in blood pressure, in some cases comparable to those achieved with certain blood pressure medications.

4. Beetroot and Beet Greens

Benefits:

- Rich in dietary nitrates.
- Increase nitric oxide production within the body.
- Promote blood vessel relaxation and improved blood flow.
- Contribute to lower blood pressure levels.

5. Pomegranates

Benefits:

- Rich in antioxidants, including polyphenols and anthocyanins.
- Support healthy blood vessel function.
- Associated with improvements in blood pressure and overall cardiovascular health.

Maintaining adequate hydration is an important component of cardiovascular health and blood pressure regulation. Proper fluid intake supports several physiological processes that contribute to healthy blood pressure levels, including:



- Maintaining adequate blood volume and circulation.
- Supporting healthy blood vessel function.
- Reducing blood viscosity, allowing blood to flow more efficiently.
- Helping maintain electrolyte balance.
- Supporting hormonal systems involved in blood pressure regulation.
- Enhancing kidney function and fluid balance.

Alcohol consumption can have a number of negative effects on blood pressure and cardiovascular health. Both short-term and long-term alcohol intake have been associated with elevated blood pressure and an increased risk of hypertension.

Potential adverse effects of alcohol include:

- Increases in both systolic and diastolic blood pressure.
- Promotion of atherosclerosis (hardening and narrowing of the arteries).
- Weakening of the heart muscle over time.
- Contribution to weight gain.
- Increased likelihood of unhealthy food choices.
- Dehydration.
- Disruption of electrolyte balance.

Current evidence indicates that there is no level of alcohol consumption that can be considered beneficial for overall health. For optimal cardiovascular health, avoiding alcohol intake is recommended.

Caffeine and related compounds known as methylxanthines (including theobromine and theophylline) are naturally present in coffee, tea, chocolate, and some other foods and beverages. Their effects on blood pressure have been extensively studied. Caffeine can cause a temporary

increase in blood pressure, particularly in individuals who consume it infrequently. This effect typically occurs within 30 minutes of consumption and may persist for several hours. The increase is thought to result from stimulation of the sympathetic nervous system, leading to blood vessel constriction and increased cardiac output. The long-term effects of caffeine on blood pressure are less clear. However, evidence suggests that chronically high caffeine intake may contribute to persistently elevated blood pressure in susceptible individuals. Factors that may influence an individual's response include, genetic differences in caffeine metabolism, existing hypertension, overall caffeine intake and Individual sensitivity to stimulants.

Regular physical activity is one of the most effective lifestyle strategies for preventing and managing hypertension. Exercise has been shown to:

- Lower both systolic and diastolic blood pressure.
- Promote blood vessel relaxation.
- Improve arterial flexibility.
- Strengthen the heart muscle.
- Enhance glucose metabolism and insulin sensitivity.
- Support healthy weight management.
- Reduce levels of stress hormones.

Two forms of exercise are particularly beneficial for blood pressure management:

1. Aerobic Exercise

Aerobic exercise is any activity that elevates the heart rate and breathing rate. Examples include walking, cycling, swimming, and jogging.

Current recommendations generally suggest at least 30 minutes of moderate-intensity aerobic activity on most days of the week.

2. Resistance Training

Resistance or strength training can also contribute to blood pressure reduction and overall cardiovascular health. Examples include weight training, resistance bands and bodyweight exercises. Two to three sessions per week are generally recommended.



Maintaining a healthy body weight plays a significant role in both preventing and managing hypertension. Research suggests that, on average, for every kilogram of weight lost:

- Systolic blood pressure decreases by approximately 1 mmHg.
- Diastolic blood pressure decreases by approximately 0.5 mmHg.

Excess body weight increases the workload placed on the heart, requiring it to pump blood more forcefully throughout the body. Weight loss helps reduce this workload and can improve blood vessel function, allowing blood vessels to relax more effectively and contribute to lower blood pressure levels.

Quality sleep is essential for healthy blood pressure regulation and cardiovascular function. Adequate sleep can:

- Support healthy circadian rhythms.
- Reduce levels of stress hormones.
- Promote blood vessel relaxation.
- Improve glucose metabolism.
- Assist with weight management.
- Reduce inflammation.

Adults should aim for approximately 7–8 hours of quality sleep each night.



Establishing a regular sleep schedule and obtaining sufficient sleep during the earlier part of the night may further support overall health and recovery.

Stopping smoking is one of the most beneficial steps an individual can take for cardiovascular health. The benefits begin almost immediately and continue to accumulate over time. Smoking cessation can:

- Lower blood pressure.
- Improve blood vessel function.
- Reduce arterial stiffness.
- Improve cholesterol and blood lipid profiles.
- Decrease inflammation throughout the body.



Appropriate sunlight exposure contributes to several physiological processes that may support healthy blood pressure regulation. Potential benefits include:

- Increased production of vitamin D, which has been associated with improved cardiovascular health.
- Enhanced production of nitric oxide within the skin, helping blood vessels relax and widen.
- Support for healthy circadian rhythms, which play an important role in blood pressure regulation.

Regular exposure to natural daylight, while avoiding excessive sun exposure, may contribute to overall cardiovascular well-being.

Chronic stress can contribute to elevated blood pressure and increase the risk of developing hypertension. Effective stress management is therefore an important component of a comprehensive blood pressure management plan. Stress reduction will help:

- Lower stress hormone levels.
- Improve blood vessel function.
- Promote blood vessel relaxation.
- Reduce inflammation.
- Encourage healthier lifestyle choices.



- Provide meaningful social support through faith communities.
- Reduce symptoms of anxiety and depression, both of which are associated with elevated blood pressure.

Several herbal medicines have demonstrated potential benefits in supporting healthy blood pressure levels. These should be used as complementary measures alongside lifestyle modifications and, where appropriate, prescribed medical treatment.

- Olive leaf extract: 1–3 g daily.
- Garlic: 2–4 g of dried powder daily.
- Hawthorn berry: 1–3 g daily. May interact with certain cardiovascular medications; professional guidance is recommended.
- Hibiscus: 1–3 g daily.
- Celery seed: Approximately 3 g daily. Not recommended during pregnancy or in individuals with inflammatory kidney conditions.

Individuals taking prescription medications or managing chronic health conditions should consult a qualified healthcare professional before commencing herbal supplements.

Healthy Blood Pressure Prescription

Be salt and light to those around you
Whole-Food Plant-Based Diet
Stay well hydrated
No alcohol & caffeine
Regular Exercise
Manage the weight
Sleep Well
Avoid smoking
Manage the Stress
Prayer and Meditation
Try Herbs: Hibiscus, Garlic, Olive Leaf, Hawthorn Berry



A growing body of research suggests that spirituality with active involvement may positively influence health and well-being, including cardiovascular health. An active spiritual life will:

- Foster a greater sense of peace, purpose, and well-being.
- Improve coping during times of stress and adversity.
- Reduce stress hormone levels.
- Encourage healthy lifestyle behaviours.