
Blood pressure (high) - hypertension

Summary

- Hypertension, or high blood pressure, is a risk factor in many diseases, such as heart attack, kidney failure and stroke.
 - Hypertension often doesn't show any symptoms, so regular check-ups are important.
 - Leading a healthy lifestyle is one of the best ways to both treat and prevent hypertension.
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The heart pumps blood around the body through the blood vessels. Blood pressure is the amount of force exerted on the artery walls by the pumping blood. High blood pressure (hypertension) means that your blood is pumping with more force than normal through your arteries.

The added stress on the arteries can speed up the clogging of arteries with fatty plaques (atherosclerosis). Atherosclerosis contributes to many illnesses, such as heart attack and stroke. Other risk factors for atherosclerosis include cigarette smoking and high blood cholesterol.

Hypertension is a common disorder of the circulatory system, affecting around one in seven adult Australians and becoming more common with age. Older people may experience a change in their blood pressure pattern due to their arteries becoming more rigid (less elastic).

Hypertension usually produces no symptoms. This means most people don't even realise they have it. Experts recommend that everyone should have their blood pressure checked regularly (preferably yearly).

How blood pressure is controlled

When the heart contracts, the blood inside the left ventricle is forced out into the aorta and arteries. The blood then enters small vessels with muscular walls, called arterioles. The tone in the muscular walls of the arterioles determines how relaxed or constricted they are. If narrowed, they resist flow.

Reduced flow of blood is detected in the brain, the kidneys and elsewhere. Nerve reflexes are stimulated and hormones are then produced. The heart is induced to beat more forcefully so that blood pressure is maintained at a higher level, to overcome the restricted flow through the arterioles. The achievement of good flow (now at high pressure) eases possible problems for function of the brain and kidneys.

These adjustments occur normally. However, in some people the adjustments become fixed and high blood pressure persists. These people have developed hypertension.

How blood pressure is measured

Hypertension can be mild, moderate or severe. Your blood pressure is naturally higher when you are exerting yourself, such as during physical exercise. It is only a concern if your blood pressure is high when you are at rest, because this means your heart is overworked and your arteries have extra stress in their walls.

Blood pressure readings are a combination of two measurements. These are:

- **Systolic** – is the highest pressure against the arteries as the heart pumps. The normal systolic pressure is usually between 110 and 130mmHg.
- **Diastolic** – is the pressure against the arteries as the heart relaxes and fills with blood. The normal diastolic pressure is usually between 70 and 80mmHg.

Sphygmomanometer

Blood pressure is measured using an instrument called a sphygmomanometer.

- An inflatable pressure bag is wrapped around the upper arm. The bag is connected to the sphygmomanometer. The operator pumps up the bag with air until the circulation of the arm's main artery is interrupted.
- The pressure in the bag is then slowly released until it equals the systolic pressure in the artery, indicated by blood once again moving through the vessel. This makes a 'thumping' sound. The systolic pressure is indicated on the sphygmomanometer and recorded.
- The blood pressure in the arm's main artery drops to equal the lowest pressure, which is the diastolic pressure. This is the pressure at which the thumping sound is no longer heard. This figure is also recorded.
- The operator may take numerous readings to get the true picture. This is because many people tend to 'tense up' during the procedure and nervous tension may temporarily boost the blood pressure.
- The accuracy of electronic measuring and recording of both systolic and diastolic pressures is replacing manual and auditory blood pressure recording.

Most people with hypertension feel okay

Hypertension usually does not produce any symptoms, because the organs of the body can resist high blood pressure for a long time. That's why it's important to have regular medical examinations to make sure your blood pressure isn't creeping up as you grow older.

High blood pressure over a period of time can contribute to many illnesses, including:

- heart attack
- heart failure
- kidney disease
- stroke.

An unhealthy lifestyle can cause hypertension

Some of the factors which can contribute to high blood pressure include:

- hereditary factors
- obesity
- lack of exercise
- a diet high in salt
- heavy drinking
- kidney disease.

The effects of high blood pressure on the arteries are worsened by:

- cigarette smoking
- high levels of saturated fat in the diet
- high blood cholesterol
- diabetes.

Responses to some types of stress may affect both blood pressure and changes in the arteries, but this remains scientifically uncertain.

Some drugs may cause hypertension

Certain drugs can cause hypertension or make controlling hypertension more difficult. Check with your doctor or pharmacist for alternatives. These drugs include:

- the combined contraceptive pill
- non-steroidal anti-inflammatories
- some nasal drops and sprays
- some cough medicines, eye drops and appetite suppressants.

Blood pressure and ageing

With advancing years, the arteries tend to become more rigid (less elastic). This may change a person's blood pressure pattern, with a higher systolic pressure and a lower diastolic pressure. The higher systolic pressure is important because it can further accelerate the rigidity of the arteries. This state is referred to as 'isolated systolic hypertension'. Although these changes are due to ageing, this is not a normal state and may need medication to control the systolic pressures.

Making healthier choices

Two out of five people can successfully lower their blood pressure by making adjustments to their lifestyle. For example, a low-fat diet and giving up cigarette smoking will reduce the damaging effects of hypertension on the arteries. Some healthy lifestyle choices include:

- Maintain your weight within the healthy range.
- Eat a high-fibre, low-fat and low-salt diet.
- Give up smoking.
- Limit alcohol consumption.
- Exercise regularly.

See your doctor before you start any new exercise program.

Antihypertensive medications

In most cases, it is necessary to take antihypertensive medication as well. Usually hypertensive medication is introduced at low doses. The dose may be gradually increased if needed. A second or even a third drug may be added to achieve good blood pressure control. Not many people experience unpleasant side effects.

Any drug treatment for hypertension needs to be monitored carefully by your doctor. You should never alter the dose of your hypertension medication or stop taking it without consulting with your doctor. Medications don't cure the condition and most of the people who need to take antihypertensive drugs will do so for the rest of their lives.

Where to get help

- Your doctor
- Pharmacist

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