CONDITION

Hypertensive heart disease

Hypertensive heart disease means heart changes or problems caused by long-term high blood pressure.

WHAT IT IS
Heart damage caused by long-term high blood pressure

BODY SYSTEM
Heart and circulation

MAIN SYMPTOMS
Often none, breathlessness, fatigue, chest discomfort

WHAT CAUSES IT
Long-term high blood pressure

HOW IT IS DIAGNOSED
Blood pressure measurements, ECG, and echocardiogram

MAIN TREATMENT
Blood pressure control and treatment of heart complications

CAN IT BE CURED?
Sometimes - early changes may improve with control

IS IT AN EMERGENCY?
Sometimes - chest pain or severe breathing trouble

LONG-TERM OUTLOOK
Often manageable; established heart failure needs lifelong care

Overview

Hypertensive heart disease is a group of heart changes and problems caused by high blood pressure over time. High blood pressure makes the heart pump against greater resistance. The heart muscle may become thicker, stiffer, or enlarged as it handles this extra workload.

At first, these changes may not cause symptoms. Over months or years, the heart may have more difficulty relaxing or pumping. This can lead to heart failure, an abnormal heart rhythm, or reduced blood flow to the heart muscle.

The term does not describe one single heart problem. It may include:

High blood pressure can also harm the brain, kidneys, eyes, and blood vessels. Controlling it is important even when you feel well, because both high blood pressure and early heart changes

are often silent.

- Thickening of the main pumping chamber, called left ventricular hypertrophy
- Heart failure, in which the heart cannot pump or fill as well as it should
- Coronary artery disease, caused by narrowed arteries supplying the heart
- Abnormal rhythms, particularly atrial fibrillation

Symptoms

Many people have no symptoms in the early stages. High blood pressure itself usually does not cause a clear feeling that something is wrong.

Symptoms may appear when the heart has become thickened, stiff, or less able to pump. They can include:

These symptoms have many possible causes. Having one does not mean you have hypertensive heart disease.

Sudden chest pain, severe breathing difficulty, fainting, or signs of a stroke need emergency assessment. Signs of a stroke include sudden facial drooping, arm weakness, difficulty speaking, or loss of balance.

- Shortness of breath during activity or while lying flat
- Tiredness or reduced ability to exercise
- Swelling of the feet, ankles, legs, or abdomen
- Chest pressure, tightness, or discomfort
- A fast, pounding, or irregular heartbeat
- Dizziness or feeling faint
- Waking at night short of breath

Causes and risk factors

The main cause is blood pressure that stays too high over a long period. Blood pressure is the force of blood pushing against artery walls. When that force remains high, the heart must work harder to move blood around the body.

The left ventricle, which is the heart's main pumping chamber, may respond by becoming thicker. A thickened muscle can be strong at first but may become stiff. This makes it harder

for the chamber to fill between beats. Later, the heart may also weaken or enlarge.

Factors that increase the chance of developing high blood pressure or related heart damage include:

Some medicines, hormonal conditions, and kidney or blood vessel disorders can cause secondary hypertension. This means that high blood pressure results from another identifiable condition. Your healthcare team may investigate these causes when blood pressure starts unusually early, rises suddenly, or remains high despite treatment.

- Increasing age
- A family history of high blood pressure
- Kidney disease
- Diabetes
- High cholesterol
- Smoking
- Carrying excess body weight
- Limited physical activity
- A diet high in sodium, mainly from salt and processed food
- Regular heavy alcohol use
- Obstructive sleep apnoea, which interrupts breathing during sleep

Diagnosis

There is no single test that confirms every form of hypertensive heart disease. Diagnosis usually combines a history of high blood pressure with evidence that it has affected the heart.

Blood pressure should be measured accurately and usually on more than one occasion. Home monitoring or a 24-hour ambulatory monitor may be used. An ambulatory monitor records blood pressure during normal daytime activities and sleep, helping to separate sustained high blood pressure from readings that rise mainly in a medical setting.

An electrocardiogram, or ECG, records the heart's electrical activity. It may show signs of thickened heart muscle, a previous heart attack, or an abnormal rhythm. A normal ECG does not rule out heart changes.

An echocardiogram uses ultrasound to make moving pictures of the heart. It can show:

Blood and urine tests may check kidney function, blood salts, blood sugar, cholesterol, and

protein in the urine. These tests look for other effects of high blood pressure and help guide safe treatment.

If you have breathlessness or swelling, additional tests may include a chest X-ray and blood tests for substances released when the heart is under strain. Chest discomfort may require tests for reduced blood flow through the coronary arteries.

- The thickness and size of the heart chambers
- How well the heart squeezes and relaxes
- Whether the valves are working normally
- Signs of increased pressure inside the heart

Treatment and management

Treatment aims to lower blood pressure, reduce the heart's workload, and manage any complications. The right approach depends on your blood pressure readings, heart function, kidney health, other conditions, and current medicines.

Blood pressure medicines may include an ACE inhibitor like lisinopril or ramipril, an angiotensin receptor blocker, a calcium-channel blocker, or a thiazide-like diuretic like furosemide or hydrochlorothiazide . These medicines lower blood pressure in different ways. Some people need more than one type. Beta blockers or other medicines may be used when there is another reason, such as an abnormal rhythm, angina, or certain types of heart failure.

Do not stop blood pressure or heart medicines suddenly unless a healthcare professional has advised you to do so. If you have side effects, there may be another dose, schedule, or medicine that suits you better.

If heart failure is present, treatment depends partly on whether the heart's pumping strength is reduced or preserved. Treatment may include medicines that reduce fluid build-up, protect the heart and kidneys, or help the heart work more efficiently. Some people with advanced rhythm or pumping problems may need an implanted device or another procedure.

Daily measures can support medical treatment:

Follow-up may include blood pressure checks, blood tests, ECGs, or repeat heart imaging. Some medicines require monitoring of kidney function and blood salts.

- Take medicines consistently and arrange repeat prescriptions early
- Check blood pressure at home if advised and record the results
- Reduce sodium by limiting heavily salted and highly processed foods

- Choose a diet rich in vegetables, fruit, whole grains, and suitable protein
- Build regular physical activity into your routine when medically safe
- Avoid smoking and seek support if you want to stop
- Keep alcohol within limits recommended where you live
- Discuss loud snoring, pauses in breathing, or severe daytime sleepiness

Complications

A thickened heart may become stiff, making it difficult to fill normally. This can cause heart failure even when the squeezing strength remains normal. In other people, the heart muscle eventually weakens and its pumping strength falls.

Possible complications include:

Not everyone develops these problems. Risk generally rises when blood pressure remains uncontrolled, other cardiovascular risks are present, or heart changes are already advanced. Treatment can lower the chance of further damage.

- Heart failure with breathlessness, fatigue, or fluid retention
- Coronary artery disease and heart attack
- Atrial fibrillation or other abnormal rhythms
- Enlargement of the heart
- Heart valve leakage caused by chamber enlargement
- Stroke
- Chronic kidney disease

Prevention

Hypertensive heart disease can often be prevented or delayed by identifying and controlling high blood pressure. However, inherited tendencies, ageing, and some medical causes of hypertension cannot always be prevented.

Have your blood pressure checked even if you feel healthy. How often it needs checking depends on previous readings and your overall cardiovascular risk.

A lower-sodium eating pattern, regular activity, avoiding smoking, maintaining a weight that is healthy for you, and limiting alcohol can help. These measures do not always replace medicine.

Some people need lifelong medication despite following a healthy routine.

If you already have high blood pressure, taking treatment consistently and attending routine reviews are the most important ways to reduce heart damage.

Living with it and what to expect

The course differs according to how long blood pressure has been high, whether the heart is already damaged, and how well blood pressure and other risks are controlled.

Early thickening of the heart muscle may partly improve after sustained blood pressure control. More advanced scarring, enlargement, or heart failure may not fully reverse. Even then, treatment can reduce symptoms, slow further change, and lower the risk of hospital admission or cardiovascular events.

Many people continue to work, exercise, travel, and manage everyday responsibilities. You may need to pace activity if you have heart failure or significant breathlessness. Cardiac rehabilitation, when available and appropriate, can provide supervised exercise, education, and practical support.

Routine care commonly involves:

Weight can be useful to track if you have heart failure. A rapid increase may reflect fluid retention rather than body fat. Your care team can tell you what change should prompt contact.

- Reviewing home and clinic blood pressure readings
- Checking for medicine side effects
- Monitoring kidney function and blood salts
- Discussing new breathlessness, swelling, chest discomfort, or palpitations
- Managing diabetes, cholesterol, kidney disease, and sleep apnoea

When to get medical help

Arrange a routine appointment if your blood pressure readings are repeatedly above the target set for you, even if you feel well. You should also arrange review for gradually increasing breathlessness, ankle swelling, fatigue, palpitations, or reduced exercise ability.

Seek prompt medical advice if your blood pressure is above 180/120 mmHg after repeating the measurement correctly, even without symptoms. A healthcare service can advise how

quickly you need assessment. Do not take extra medicine unless this is part of a plan already given to you.

Call emergency services for:

These symptoms can indicate a heart attack, stroke, or hypertensive emergency. Do not drive yourself if you feel severely unwell.

- Chest pain, pressure, or tightness that is severe, persistent, or new
- Severe difficulty breathing
- Fainting or sudden collapse
- Sudden facial drooping, arm weakness, or trouble speaking
- A blood pressure above 180/120 mmHg with chest pain, breathlessness, confusion, weakness, vision change, or another new neurological symptom

Common questions

Is hypertensive heart disease the same as high blood pressure?

No. High blood pressure is the underlying problem. Hypertensive heart disease means there is evidence that long-term high blood pressure has changed or affected the heart.

Does hypertensive heart disease mean I have heart failure?

Not always. You may have thickened heart muscle without heart failure. However, thickening and stiffness can increase the chance of heart failure later, which is why blood pressure treatment and follow-up matter.

Can hypertensive heart disease be reversed?

Some early changes, especially thickening of the heart muscle, may improve when blood pressure remains well controlled. Established scarring, major enlargement, or advanced heart failure may persist. Improvement is more likely when treatment begins before severe damage develops.

Can I exercise with hypertensive heart disease?

Many people can and should remain active, but the safe type and intensity depend on symptoms, blood pressure, and heart function. Walking and other moderate activities are often used. Get individual advice before starting vigorous exercise if you have chest discomfort, fainting, uncontrolled blood pressure, or heart failure symptoms.

How long can you live with hypertensive heart disease?

There is no single life-expectancy figure. Outlook is influenced by the amount of heart damage,

blood pressure control, kidney health, diabetes, smoking, and whether heart failure or coronary artery disease is present. Regular treatment can substantially reduce future risk, but it cannot guarantee a particular course.

Will I need blood pressure medicine for life?

Many people do. Lifestyle changes may reduce the amount of medicine needed, but stopping treatment can allow blood pressure to rise again. Any reduction should be planned with the healthcare professional managing your blood pressure.

Sources

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