

High blood pressure is a silent killer.

I feel fine. How can I have hypertension?



- High blood pressure is the world's leading preventable cause of death – it kills more than 10 million people each year and causes disabling strokes, heart attacks, and kidney failure.
- Many people do not know they have high blood pressure.
- Only one in seven people with high blood pressure has it under control.
- Most people with high blood pressure have **no symptoms**.
- Treating high blood pressure effectively could save millions of lives worldwide.

High blood pressure (hypertension) can damage...

Brain

Stroke
Dementia

Arteries

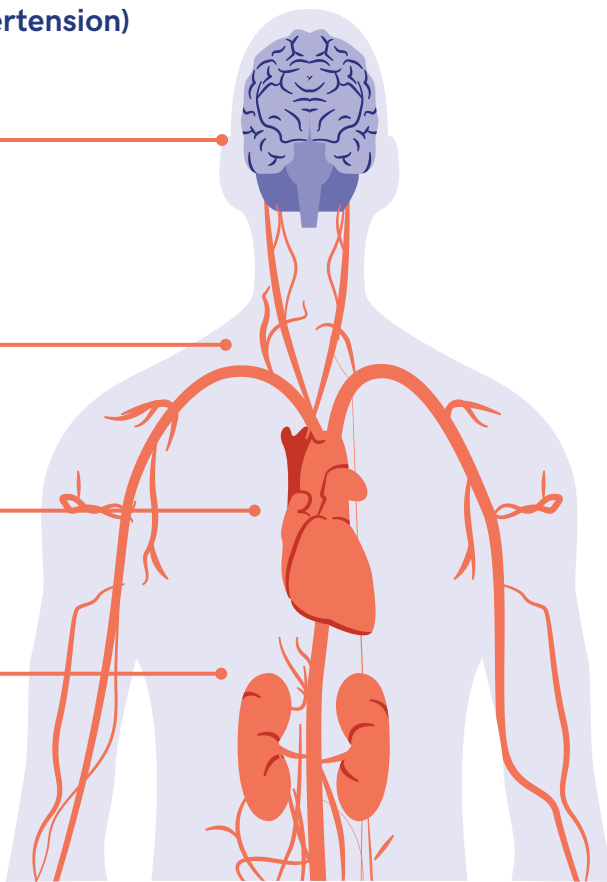
Artery damage and narrowing
Aneurysm
Leg amputation

Heart

Coronary artery disease
Heart attack
Congestive heart failure

Kidneys

Kidney failure
Kidney artery aneurysm



The only way to know if blood pressure is high is to measure it accurately.



- If available, use an automated, digital blood pressure monitor
- Measure blood pressure of all adults ≥ 18 years.
- Use correct positioning while measuring blood pressure.

Back supported

Arm supported

Cuff at heart level

Use correct cuff size

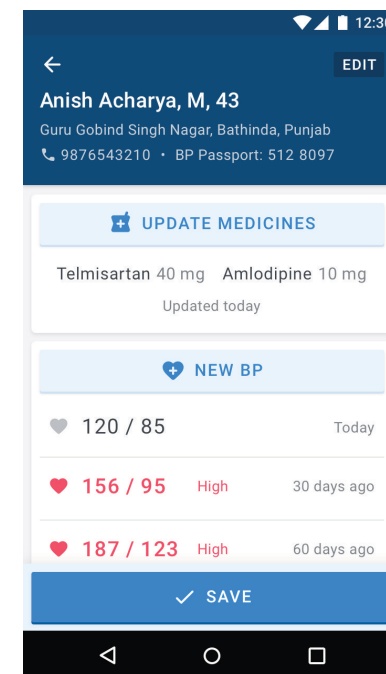


Legs uncrossed
and feet supported

- No exercise, tea, coffee, smoking 30 minutes before
- Rest for 5 minutes before

- Start treatment with medications on the same day if systolic blood pressure is confirmed to be **160 or above** or diastolic is confirmed to be **100 or above**

- Treat all patients whose blood pressure readings on two separate days are **140 or above** for systolic or **90 or above** for diastolic
- Make a record of BP measurements for each patient



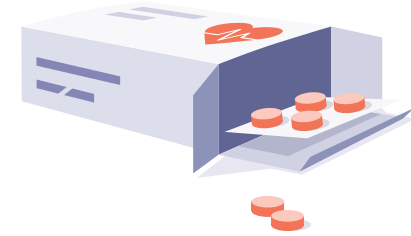
Mobile apps including Simple can help health workers keep track of patients' blood pressure measurements and medications.



A treatment protocol supports effective blood pressure management.



Medications save lives by keeping blood pressure under control, but only if patients take them consistently.



Sample Hypertension Treatment Protocol

Measure blood pressure of **all adults** over 18 years

High BP: **SBP \geq 140 or DBP \geq 90 mmHg**

- STEP 1** If BP is high:*
Prescribe Amlodipine 5mg
- STEP 2** After 30 days** measure BP again. If still high:
Increase to Amlodipine 10mg
- STEP 3** After 30 days** measure BP again. If still high:
Add Telmisartan 40mg
- STEP 4** After 30 days** measure BP again. If still high:
Increase to Telmisartan 80mg
- STEP 5** After 30 days*** measure BP again. If still high:
Add Chlorthalidone 12.5mg
- STEP 6** After 30 days*** measure BP again. If still high:
Increase to Chlorthalidone 25mg
- ... After 30 days measure BP again. If still high:
Check if the patient has been taking medications regularly and correctly.
If yes, refer to a specialist.

- * If SBP \geq 180 or DBP \geq 110, refer patient to a specialist after starting treatment.
If SBP 160-179 or DBP 100-109, start treatment on the same day.
If SBP 140-159 or DBP 90-99, check on a different day and if still elevated, start treatment.
- ** Dose of anti-hypertension medications can be titrated at 15 days frequency if required.
- *** Hydrochlorothiazide can be used if Chlorthalidone is not available (25 mg starting dose, 50 mg intensification dose).

SPECIAL POPULATIONS

Women who are or may become pregnant
DO NOT GIVE lisinopril, enalapril nor hydrochlorothiazide to pregnant women nor to women of childbearing age who are not on effective contraception.

Diabetic patients
Treat diabetes according to protocol.

Heart attack in last 3 years
Add beta blocker to amlodipine with initial treatment.

Heart attack or stroke, ever
Begin low-dose aspirin (75 mg) and statin.

Lifestyle advice for all patients



Avoid tobacco and alcohol



Exercise 2.5 hr/week



Reduce salt, under 1 tsp/day



Eat fewer fried foods



Eat a heart healthy diet



If overweight, lose weight

3 great reasons to stick with BP medicines

- 1 For most people, lifestyle change alone is not enough to control high blood pressure. Almost everyone with high blood pressure needs medication to control it.
- 2 High blood pressure has no symptoms, that's why it's known as the silent killer.
- 3 Taking blood pressure medicine - even though the patient has no symptoms - protects the patient from stroke, heart attack, kidney damage, and other problems.

Tips to improve adherence:

Prescribe 90 day medication supply.

Use a fixed dose combination pill.

Patients can make BP meds part of a daily routine by taking them at the same time every day, for example after brushing teeth or eating breakfast in the morning.



But, side effects do occur in a small number of patients.

Side effects include:

- Low blood pressure, which may lead to lightheadedness, and, rarely, falls
- Leg swelling
- High or low potassium
- Kidney injury

Almost always, these effects are temporary and go away when the medication is stopped.

Patients should tell their doctors if they experience any side effects.