

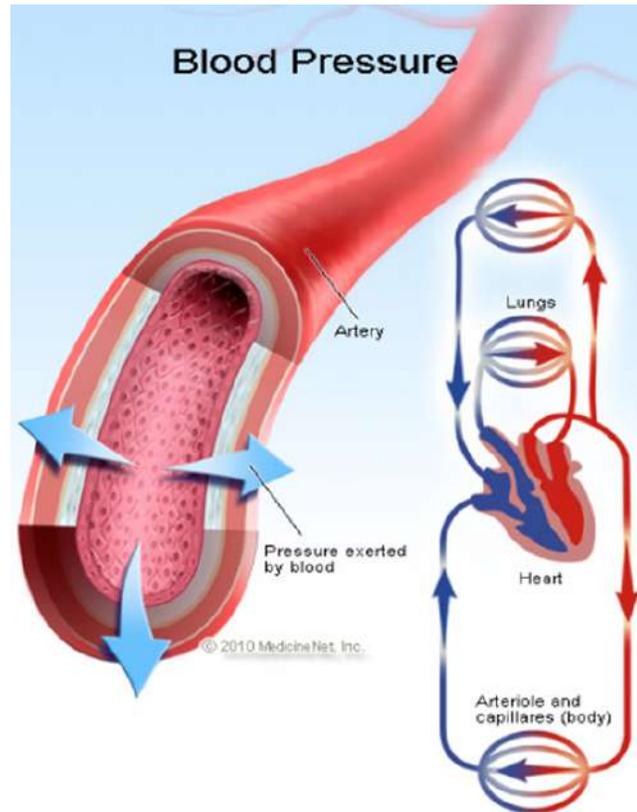


HEALTH WORLD
PHARMACEUTICALS

Blood Pressure & Blood Pressure Medication

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Prevalence of High Blood Pressure



- Based on measured data from the 2017–18 Australian Bureau of Statistics National Health Survey, about 1 in 3 people (34%) aged 18 and over have high blood pressure.

Blood Pressure (Heart Foundation, 2020)

- Blood pressure is the pressure of your blood on the walls of your arteries as your heart pumps it around your body. It's a vital part of how your heart and circulation works.
- Your blood pressure naturally goes up and down all the time, adjusting to your heart's needs depending on what you are doing. High blood pressure (hypertension) is when your blood pressure is persistently higher than normal.
- A blood pressure reading under 120/80mmHg is considered optimal. Readings over 120/80mmHg and up to 139/89mmHg are in the normal to high normal range.
- Blood pressure that's high over a long time is one of the main risk factors for heart disease. As you get older, the chances of having persistently high blood pressure increases.
- It's very important to get your blood pressure checked regularly, and if it's persistently high it needs to be controlled.

Signs and Symptoms of High Blood Pressure



Hypertension is generally a silent condition. Many people won't experience any symptoms.



Hypertension typically develops over the course of several years. Usually, you don't notice any symptoms. But even without symptoms, high blood pressure can cause damage to your blood vessels and organs, especially the brain, heart, eyes, and kidneys.



Early detection is important. Regular blood pressure readings can help you and your doctor notice any changes. If your blood pressure is elevated, your doctor may have you check your blood pressure over a few weeks to see if the number stays elevated or falls back to normal levels.



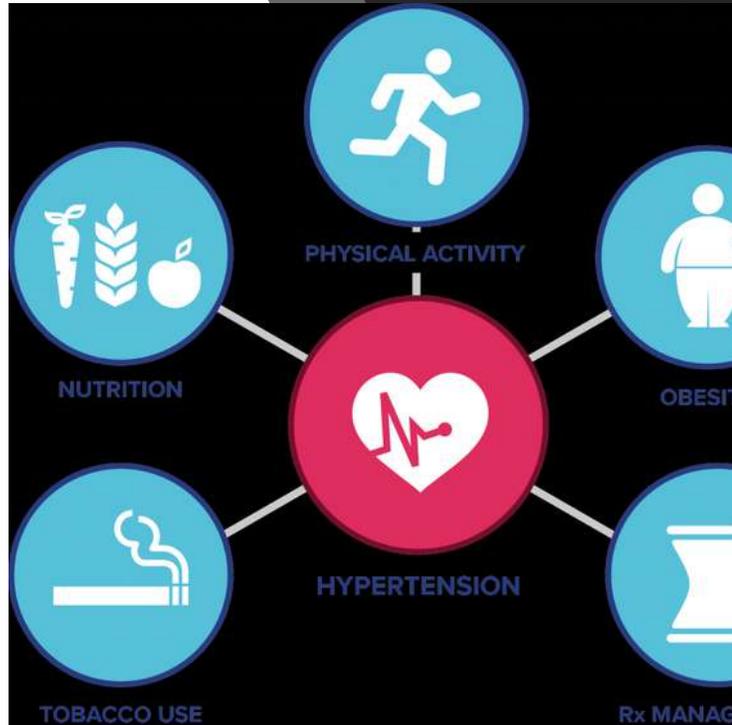
Symptoms of severe hypertension can include:

- headaches
- shortness of breath
- nosebleeds
- flushing
- dizziness
- chest pain
- visual changes
- blood in the urine

Blood Pressure Values

| BLOOD PRESSURE CHART | | | |
|---|----------------------------------|-----|-----------------------------------|
| Blood Pressure Category | Systolic mm Hg (upper number) | | Diastolic mm HG (lower number) |
| Low Blood Pressure (Hypotension) | less than 90 | and | less than 60 |
| Normal | 90 to 120 | and | 60 to 80 |
| Prehypertension | 120 to 139 | and | 80 to 89 |
| High Blood Pressure (Hypertension Stage 1) | 140 to 159 | and | 90 to 99 |
| High Blood Pressure (Hypertension Stage 2) | 160 or higher | and | 100 or higher |
| High Blood Pressure Crisis (Seek Emergency Care) | 180 or higher | and | 110 or higher |

Causes of Hypertension



Primary Hypertension

Primary hypertension is also called essential hypertension.

This kind of hypertension develops over time with no identifiable cause.

Most people have this type of high blood pressure.

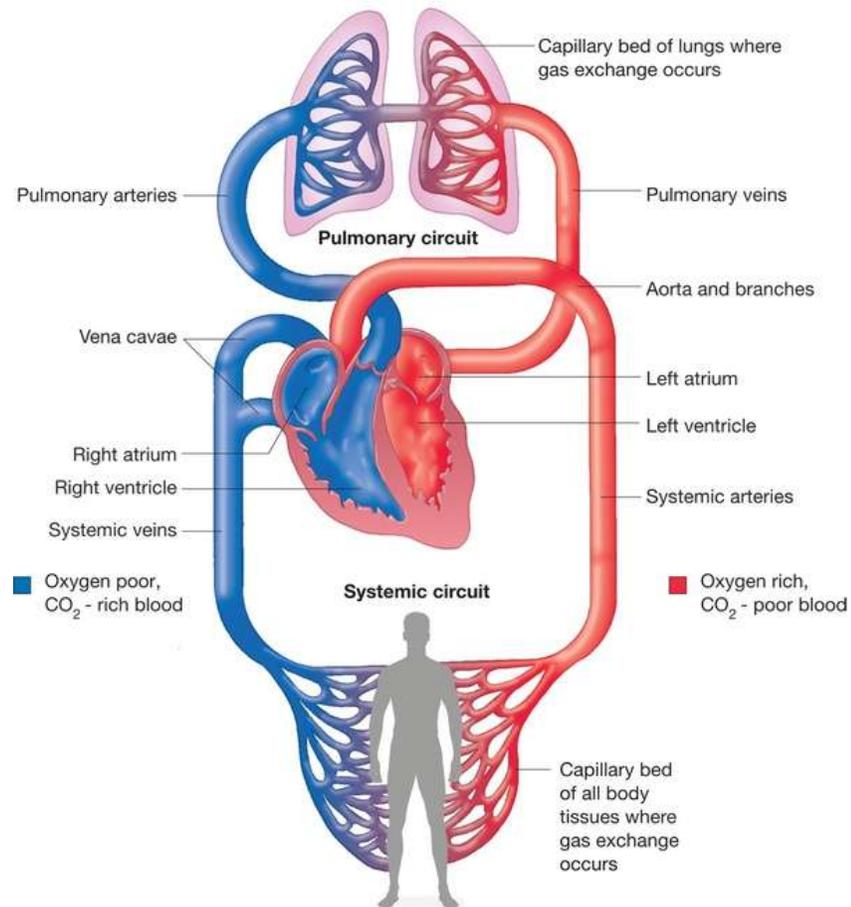
- Researchers are still unclear what mechanisms cause blood pressure to slowly increase. A combination of factors may play a role. These factors include:
 - **Genes:** Some people are genetically predisposed to hypertension. This may be from gene mutations or genetic abnormalities inherited from your parents.
 - **Physical changes:** If something in your body changes, you may begin experiencing issues throughout your body. High blood pressure may be one of those issues. For example, it's thought that changes in your kidney function due to aging may upset the body's natural balance of salts and fluid. This change may cause your body's blood pressure to increase.
 - **Environment:** Over time, unhealthy lifestyle choices like lack of physical activity and poor diet can take their toll on your body. Lifestyle choices can lead to weight problems. Being overweight or obese can increase your risk for hypertension.

Secondary Hypertension

Secondary hypertension often occurs quickly and can become more severe than primary hypertension. Several conditions that may cause secondary hypertension include:

- kidney disease
- obstructive sleep apnoea
- congenital heart defects
- Thyroid problems
- side effects of medications
- use of illegal drugs
- alcohol abuse or chronic use
- adrenal gland problems
- certain endocrine tumours

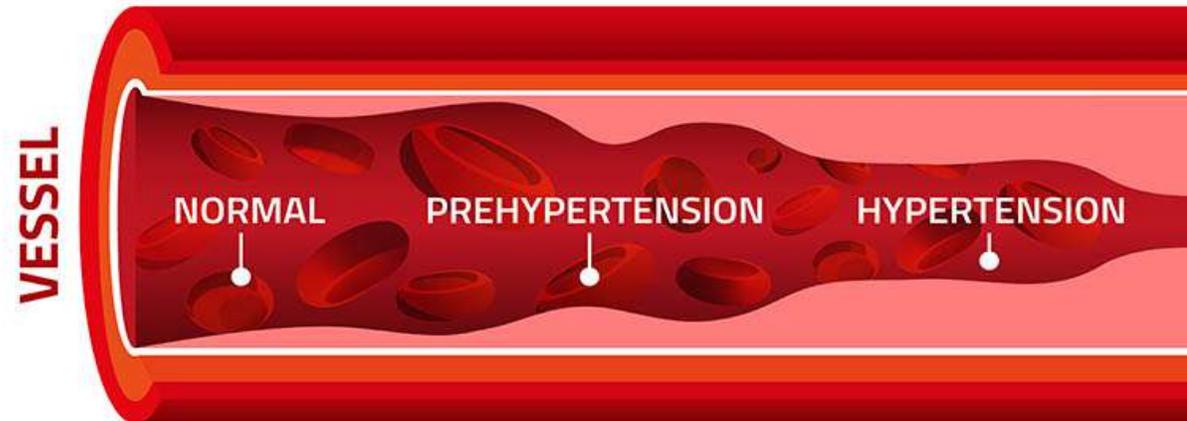
Blood Pressure and the Circulatory System



SYSTOLIC PRESSURE



Is measured between when the heart contracts



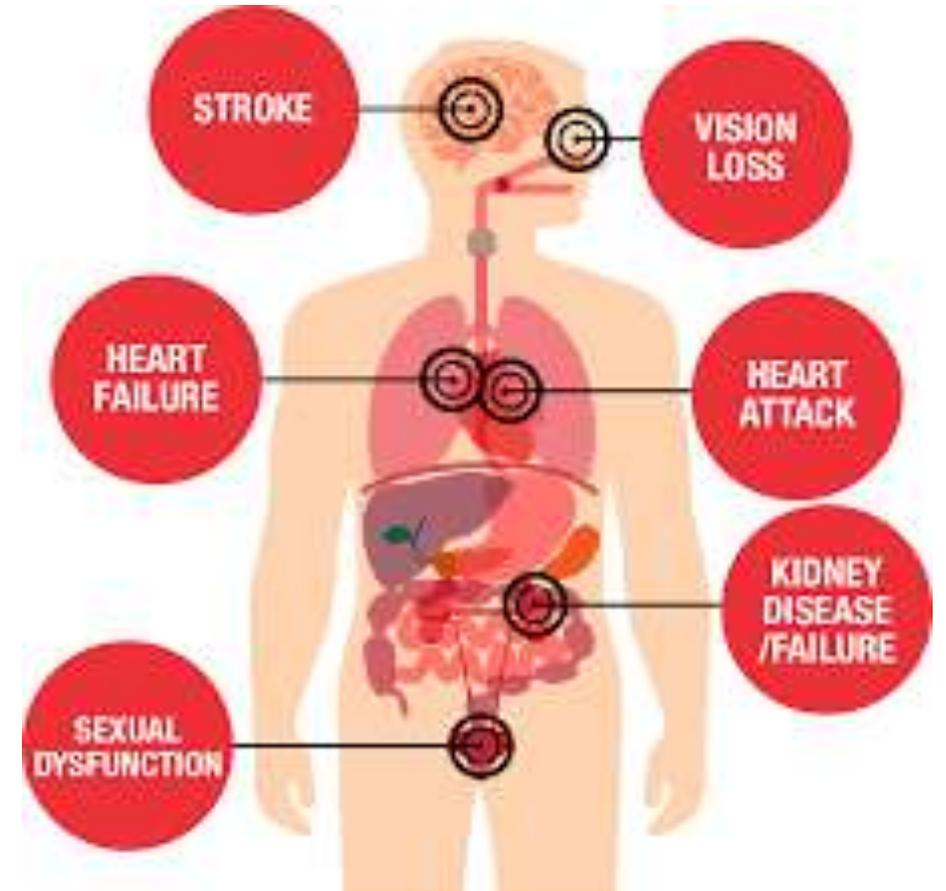
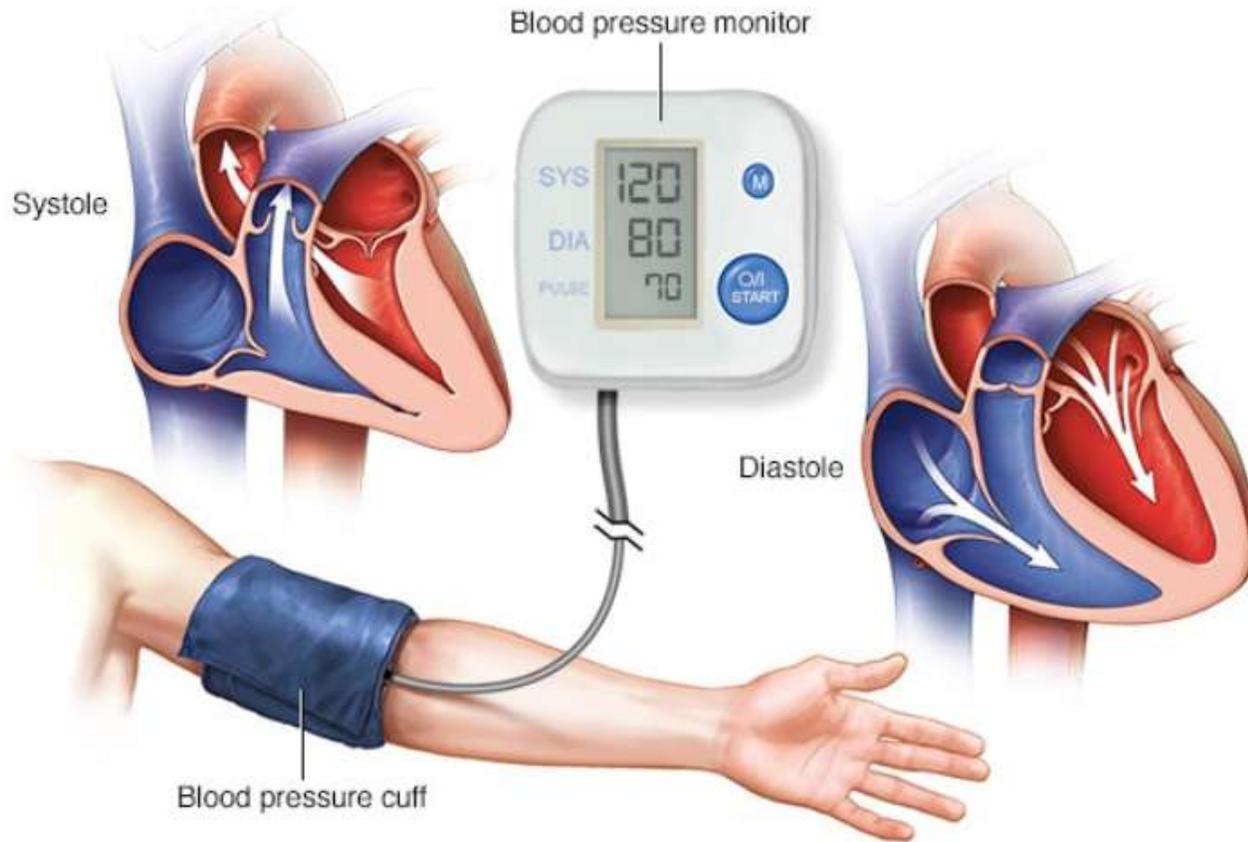
DIASTOLIC PRESSURE



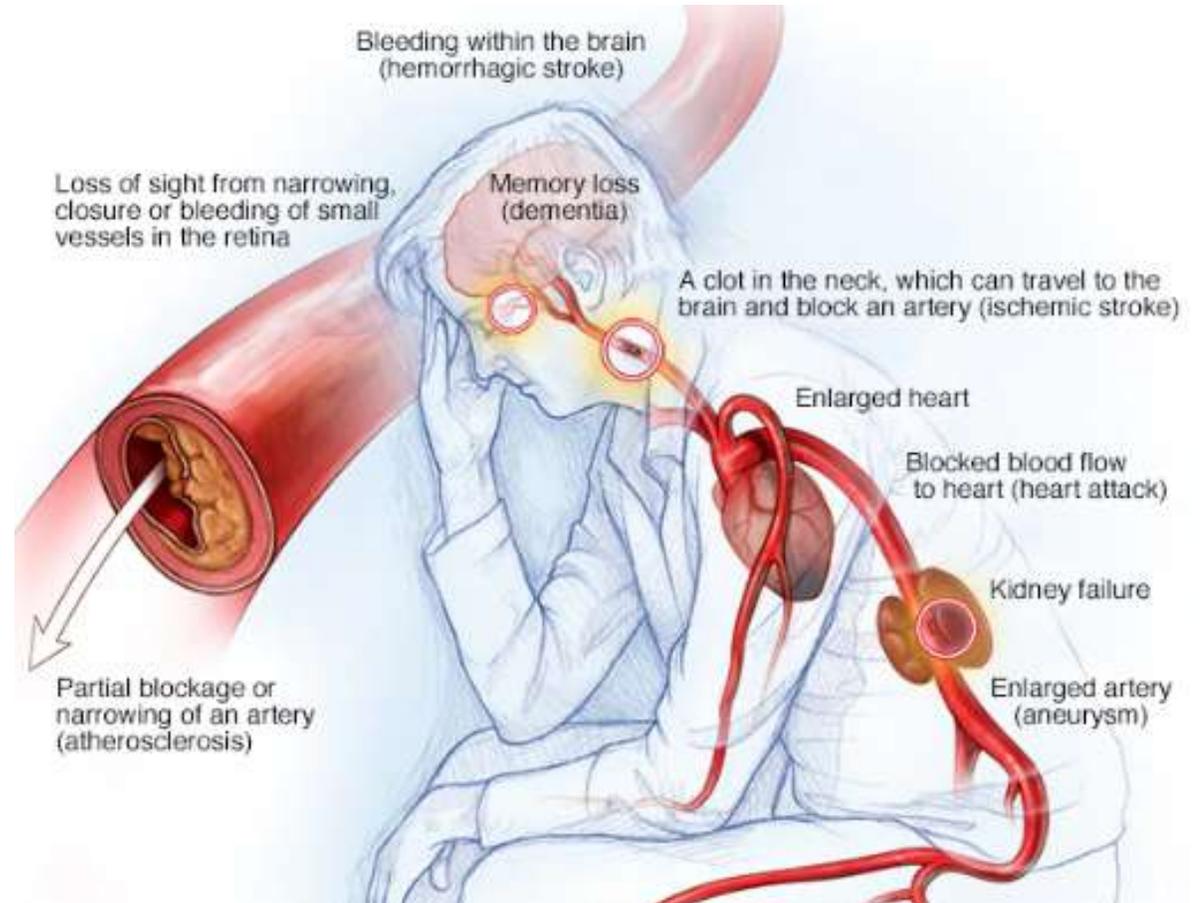
Is measured between beats when the heart relaxes

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Measuring Blood Pressure – BP Monitors



The Effects of Hypertension on your Body





Treatment

Antihypertensives: blood pressure medications used to reduce and treat high blood pressure.

- The Royal Australian College of General Practitioners recommends that you regularly review with your doctor or specialist any medications you are taking for high blood pressure or high cholesterol to assess the ongoing benefits and risks.

Types of blood pressure medicines

The most common blood pressure medicines are ACE inhibitors, calcium channel blockers, beta blockers and diuretics.

Many people need more than one medicine to bring their high blood pressure under control.

ACE inhibitors or ARBs

- ACE (angiotensin-converting enzyme) inhibitors or ARBs (angiotensin receptor blockers) work by widening your blood vessels. This reduces the pressure in the vessels and allows blood to flow more easily — making it easier for your heart to pump blood around your body. Eg Perindopril, Ramipril, Irbesartan, Telmisartan.

Calcium channel blockers

- Calcium channel blockers stop calcium from entering the heart muscle and blood vessel cells. This widens the blood vessels and relaxes the heart muscle, making it easier for your heart to pump blood around the body. Eg Amlodipine, Felodipine.

Beta blockers

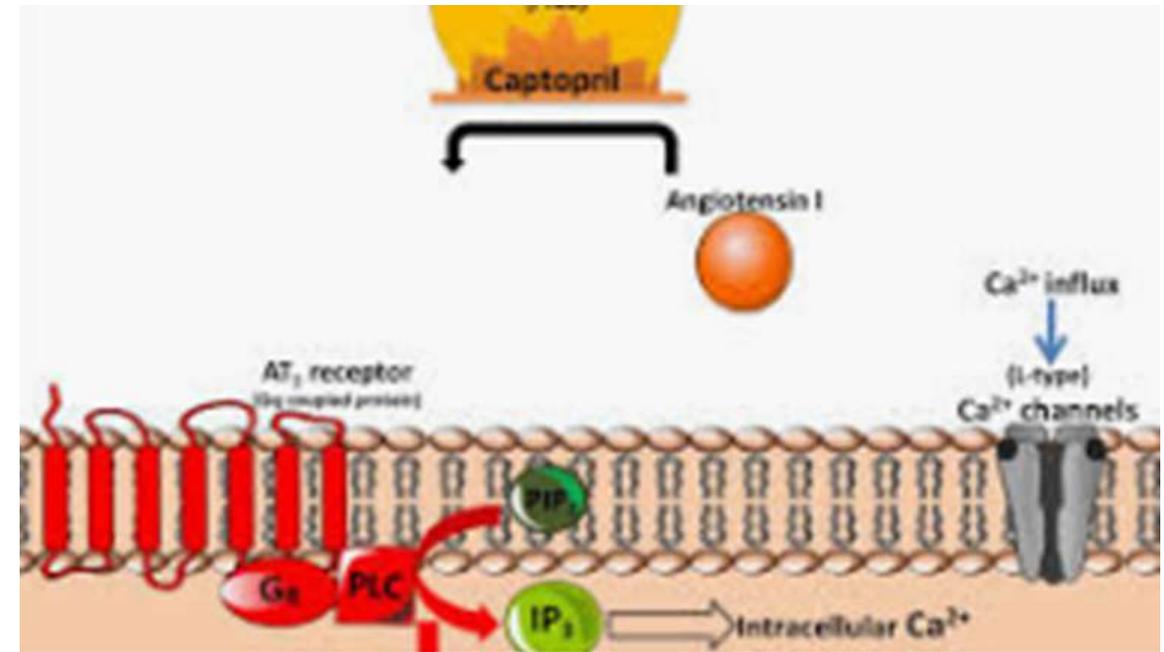
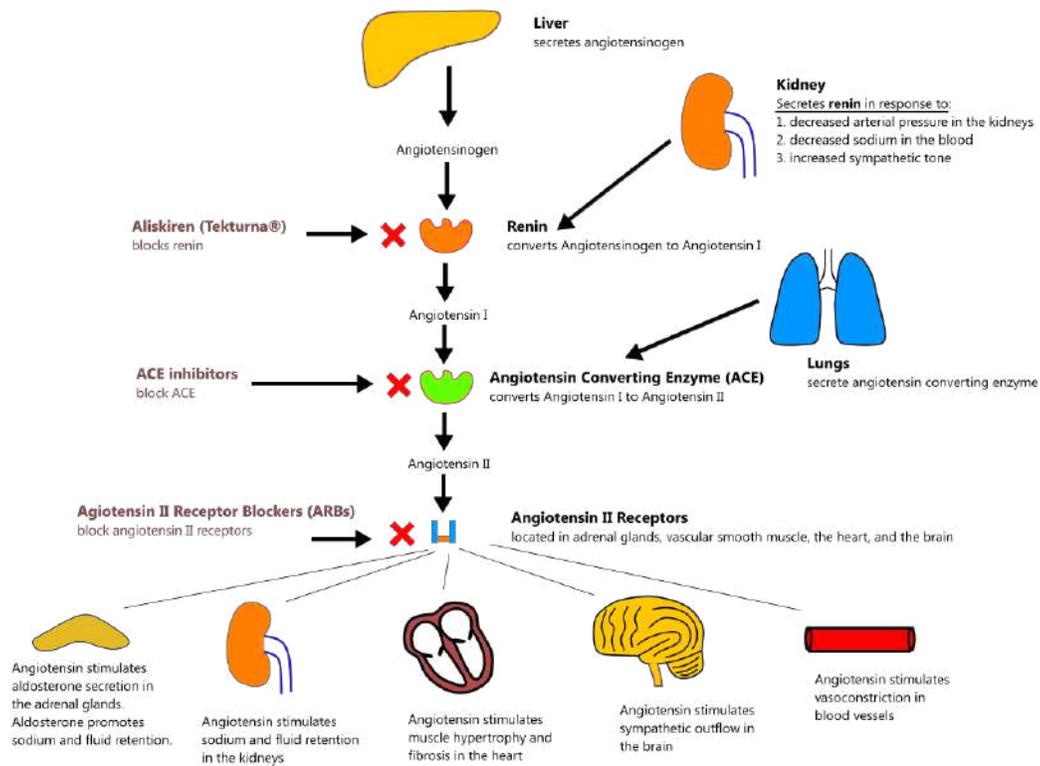
- Beta blockers work by reducing nerve signals to the heart and blood vessels. This reduces your blood pressure and the amount of work your heart needs to do. Eg Atenolol, Propranolol.

Diuretics

- Diuretics are also known as fluid tablets. They work by making you urinate more to get rid of any excess water in your body. When the excess fluid is reduced, the pressure in your blood vessels and heart also lowers. Eg Hydrochlorothiazide, Indapamide.

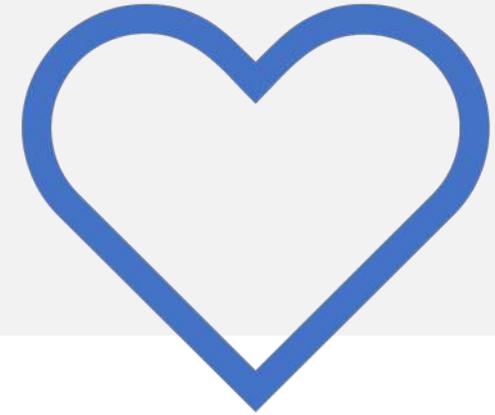
Mode of Action

The Renin-Angiotensin-Aldosterone System (RAAS)



Diet and Lifestyle Changes

- You may be able to reduce your blood pressure and reduce your risk of heart disease in other ways.
- It helps to:
 - exercise regularly (at least 150 mins of heart-pumping physical activity per week)
 - reduce your salt intake
 - eat plenty of plant-based foods (healthy eating plan)
 - lose weight if you are overweight (ideal BMI between 18.5-25 kg/m²)
 - limit alcohol consumption
 - quit smoking if you smoke
- Your doctor can give you more specific guidance to suit your needs.
- Many people with high blood pressure don't have any symptoms. It is important for all adults to get their blood pressure checked at least every 2 years.



A close-up photograph of a hand holding a bright red heart. The hand is positioned in the center-right of the frame, with the heart resting in the palm. The background is blurred, showing what appears to be a city street at night with bokeh lights. The image is framed by a white diamond shape with a thin white border, set against a blue and grey geometric background.

Thank You!!

Questions?