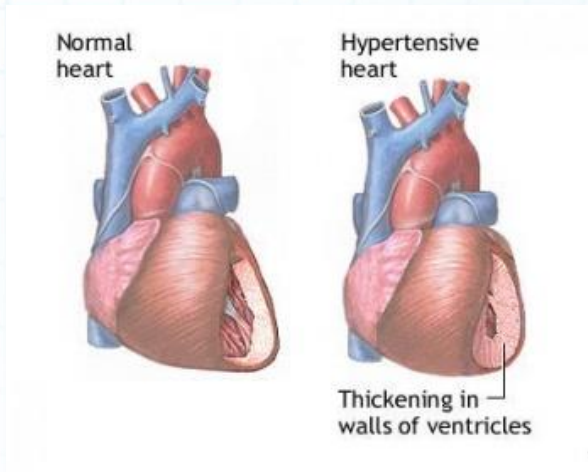


# Hypertension



**H**ypertension, also referred to as high blood pressure, is a condition in which the arteries have persistently elevated blood pressure. Every time the human heart beats, it pumps blood to the whole body through the arteries.

Blood pressure is the force of blood pushing up against the blood vessel walls. The higher the pressure the harder the heart has to pump.

Hypertension can lead to damaged organs, as well as several illnesses, such as renal failure (kidney failure), aneurysm, heart failure, stroke, or heart attack. Researchers from UC Davis reported in the *Journal of the American Academy of Neurology* that high blood pressure during middle age may raise the risk of cognitive decline later in life.

The normal level of blood pressure is below 120/80, where 120 represents the systolic measurement (peak pressure in the arteries) and 80 represents the diastolic measurement (minimum pressure in the arteries). Blood pressure between 120/80 and 139/89 is called prehypertension (to denote increased risk of hypertension), and a blood pressure of 140/90 or above is considered hypertension.

Hypertension may be classified as essential or secondary. Essential hypertension is the term for high blood pressure with unknown cause. It accounts for about 95% of cases. Secondary hypertension is the term for high blood pressure with a known direct cause, such as kidney disease, tumors, or birth control pills.

Some 70 million adults in the United States are affected by hypertension. The condition also affects about two million teens and children. According to a report issued by the Centers for Disease Control and Prevention (CDC) in September 2012, over half all Americans with hypertension do not have their high blood pressure under control.

## What causes hypertension?

Though the exact causes of hypertension are usually unknown, there are several factors that have been highly associated with the condition. These include:

- Smoking
- Obesity or being overweight
- Being obese/overweight as a child - a research team at the Indiana University School of Medicine found that obese/overweight children are much more likely to suffer from hypertension during adulthood.
- Diabetes
- Sedentary lifestyle
- Lack of physical activity

High levels of salt intake (sodium sensitivity). According to the American Heart Association (AHA), sodium consumption should be limited to 1,500 milligrams per day, and that includes everybody, even healthy people without high blood pressure, diabetes or cardiovascular diseases.

- Insufficient calcium, potassium, and magnesium consumption
- Vitamin D deficiency
- High levels of alcohol consumption
- Stress
- Aging
- Medicines such as birth control pills

Genetics and a family history of hypertension - In May 2011, scientists from the University of Leicester, England, reported in the journal Hypertension that some genes in the kidneys may contribute to hypertension.

- Chronic kidney disease
- Adrenal and thyroid problems or tumors.

Statistics in the USA indicate that African Americans have a higher incidence of hypertension than other ethnicities.

What are the symptoms of hypertension?

There is no guarantee that a person with hypertension will present any symptoms of the condition. About 33% of people actually do not know that they have high blood pressure, and

this ignorance can last for years. For this reason, it is advisable to undergo periodic blood pressure screenings even when no symptoms are present.

Extremely high blood pressure may lead to some symptoms, however, and these include:

- Severe headaches
- Fatigue or confusion
- Dizziness
- Nausea
- Problems with vision
- Chest pains
- Breathing problems
- Irregular heartbeat
- Blood in the urine

### **How is hypertension diagnose & treated**

The main goal of treatment for hypertension is to lower blood pressure to less than 140/90 - or even lower in some groups such as people with diabetes, and people with chronic kidney diseases. Treating hypertension is important for reducing the risk of stroke, heart attack, and heart failure.

High blood pressure may be treated medically, by changing lifestyle factors, or a combination of the two. Important lifestyle changes include losing weight, quitting smoking, eating a healthful diet, reducing sodium intake, exercising regularly, and limiting alcohol consumption.

Medical options to treat hypertension include several classes of drugs. ACE inhibitors, ARB drugs, beta-blockers, diuretics, \*calcium channel blockers, alpha-blockers, and peripheral vasodilators are the primary drugs used in treatment. These medications may be used alone or in combination, and some are only used in combination. In addition, some of these drugs are preferred to others depending on the characteristics of the patient (diabetic, pregnant, etc.).

\*Calcium-channel blockers and cancer risk - postmenopausal females who took calcium-channel blockers for 10 years were found to be 2.5 times more likely to develop breast cancer compared to women who never took them or those on other hypertension medications.

If blood pressure is successfully lowered, it is wise to have frequent checkups and to take preventive measures to avoid a relapse of hypertension.

Beetroot juice - a research team from Queen Mary, University of London, wrote in the journal Hypertension that a cup of beetroot juice each day can reduce blood pressure in hypertensive patients.

The researchers started off examining what the impact of consuming nitrates might be on laboratory rats, and then confirmed their findings with 15 volunteer humans, all with hypertension.

The following foods are high in nitrates:

- Beetroot
- Fennel
- Cabbage
- Lettuce
- Radishes
- Carrots

Lead author, Amrita Ahluwalia, Ph.D., said "Our hope is that increasing one's intake of vegetables with a high dietary nitrate content, such as green leafy vegetables or beetroot, might be a lifestyle approach that one could easily employ to improve cardiovascular health."

Yoga - Dr. Debbie Cohen and colleagues from the University of Pennsylvania reported at the "28th Annual Scientific Meeting" that yoga is effective in reducing blood pressure.

Telemonitoring improves uncontrolled hypertension - researchers reported significant improvements in the health of hypertensive patients who used telemonitoring, which can be used at home. Patients use a portable system allowing them to record and send their blood pressure readings straight to the doctor's office in real time.

"Switching off" high blood pressure in the body - scientists from University of California San Diego have designed molecules that could eventually be used in medications that "switch off" high blood pressure in the human body.

### **Preventing hypertension**

Hypertension can best be prevented by adjusting your lifestyle so that proper diet and exercise are key components. It is important to maintain a healthy weight, reduce salt intake, reduce alcohol intake, and reduce stress.

In order to prevent damage to critical organs and conditions such as stroke, heart attack, and kidney failure that may be caused by high blood pressure, it is important to screen, diagnose, treat, and control hyper tension in its earliest stages. This can also be accomplished by increasing public awareness and increasing the frequency of screenings for the condition.

Hypertension may be diagnosed by a health professional who measures blood pressure with a device called a sphygmomanometer - the device with the arm cuff, dial, pump, and valve. The

systolic and diastolic numbers will be recorded and compared to a chart of values. If the pressure is greater than 140/90, you will be considered to have hypertension.

A high blood pressure measurement, however, may be spurious or the result of stress at the time of the exam. In order to perform a more thorough diagnosis, physicians usually conduct a physical exam and ask for the medical history of you and your family. Doctors will need to know if you have any of the risk factors for hypertension, such as smoking, high cholesterol, or diabetes.

If hypertension seems reasonable, tests such as electrocardiograms (EKG) and echocardiograms will be used in order to measure electrical activity of the heart and to assess the physical structure of the heart. Additional blood tests will also be required to identify possible causes of secondary hypertension and to measure renal function, electrolyte levels, sugar levels, and cholesterol levels.

**Reference:**

<http://www.medicalnewstoday.com/articles/150109.phpn>