

Blood Pressure: An Overview

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Editorial

The force or pressure exerted by blood against the walls of blood arteries is measured as blood pressure. High blood pressure (hypertension) is a condition in which the pressure inside your blood vessels is continuously high. High blood pressure is referred to as the "silent killer" since you may be unaware that something is wrong with your body yet the damage is still being done. High blood pressure, for the most part, has no symptoms. The only way to know if you have it is to have your blood pressure checked by your doctor on a regular basis. Your provider will use a gauge, a stethoscope or electronic sensor, and a blood pressure cuff to check your blood pressure. Before making a diagnosis, he or she will take two or more readings at different times [1-3].

There are two types of blood pressure. These are the followings:

1. The most frequent type of high blood pressure is primary, or essential, high blood pressure. The majority of persons who get this type of blood pressure do so as they get older.
2. Another medical condition or the use of certain medications can produce secondary high blood pressure. It normally improves once you fix the underlying problem or stop taking the medications that are causing it.

Blood has a 'flow,' and arteries are 'pipes,' similar to a high-tech plumbing system. A fundamental physics law governs our blood flow, which also applies to a garden hose line. Blood circulates through our bodies as a result of a pressure difference. Our blood pressure is highest when it leaves our heart and enters the aorta, and it is lowest as it travels via progressively smaller branches of arteries. Because of the pressure difference, blood flows throughout our bodies. Arteries affect blood pressure in the same way as the physical characteristics of a garden hose line affect water pressure. As the pipe is narrowed, the pressure at the constriction point rises.

Blood pressure would drop more quickly if the artery walls were less elastic, for example, when it is pumped from the heart. While the heart produces the most pressure, the arteries are equally important in maintaining it and allowing blood to freely travel throughout the body. The status of the arteries affects blood pressure and flow, and narrowing of the arteries might finally cut off the supply completely, resulting in dangerous scenarios like stroke and heart attack.

Along with respiratory rate, heart rate, oxygen saturation, and body temperature, healthcare practitioners use blood pressure as one of the vital signs to measure a patient's health. The typical resting blood pressure in an adult is 120 millimetres of mercury (16 kPa) systolic and 80 millimetres of mercury (11 kPa) diastolic, or "120/80 mmHg." Despite the fact that these averages mask significantly differing regional trends, the global average blood

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pressure has stayed fairly constant since 1975, at around 127/79 mmHg in men and 122/77 mmHg in women.

Blood pressure was formerly measured non-invasively with an aneroid gauge or a mercury-tube sphygmomanometer, as well as auscultation (listening) with a stethoscope for sounds in one arm's artery as it was compressed closer to the heart. Auscultation is still largely recognised as the gold standard of accuracy for non-invasive blood pressure readings in clinic. Semi-automated systems, on the other hand, have become more common as worries about mercury toxicity, as well as cost, convenience of use, and application to ambulatory blood pressure or home blood pressure measures, have grown.

Early automated mercury-tube sphygmomanometer replacements were usually inaccurate, but modern systems verified to international standards have a standard deviation of less than 8 mm Hg and an average difference of less than 5 mm Hg between two standardised reading methods. The bulk of these semi-automated blood pressure monitoring methods use oscillometry (measurement by a pressure transducer in the cuff of the device of small oscillations of intra-cuff pressure accompanying heartbeat-induced changes in the volume of each pulse).

Cardiac output, systemic vascular resistance, and arterial stiffness all influence blood pressure, which varies depending on the environment, mental state, activity level, and relative health/disease condition. Baroreceptors, which control the neurological and endocrine systems via the brain, regulate blood pressure in the short term. Blood pressure is defined as hypotension when it is consistently low, hypertension when it is consistently high and norm tension when it is consistently normal. Hypertension and hypotension can be caused by a multitude of factors and can develop suddenly or gradually. Long-term hypertension puts you at risk for stroke, heart disease, and renal failure, among other things. Hypertension with a lengthy history is more common than hypotension with a long history [4, 5].

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