

Blood Pressure

by Sophia



WHAT'S COVERED

In this lesson, you will learn to understand how blood pressure is measured and regulated, as well as common disorders. Specifically, this lesson will cover:

1. Blood Pressure

Blood pressure is the pressure that's exerted on the walls of your vessels by your blood; the contractions of the heart are what produce this pressure. Blood pressure is highest as it's being pumped out of the heart into its aorta and will decrease as it moves throughout the rest of your vessels.

Think about the last time you were at the doctor's office. Chances are they took your blood pressure. This measurement of your blood pressure is reported with two numbers: One number over another number.

Those two numbers refer to two different types of pressure:

- **Systolic pressure:** The highest pressure in the aorta, which occurs when the left ventricle contracts and pushes blood into the aorta.
- **Diastolic pressure:** The lowest pressure in the aorta, when the ventricle is relaxed

The healthiest blood pressure is under 120/80.



TERMS TO KNOW

Blood Pressure

The pressure that blood exerts on the wall of a vessel that is measured in units of millimeters of mercury (mmHg); blood pressure is the driving force that creates blood flow throughout the vessels of the body.

Systolic Pressure

One of two measures of blood pressure, systolic pressure is a higher pressure that occurs when the left ventricle of the heart is in systole (contracting) and pumping blood into the arteries, causing their pressure to increase.

Diastolic Pressure

One of the two measures of blood pressure, diastolic pressure is a lower pressure that occurs when the left ventricle of the heart is in diastole (resting), which causes the pressure in the

systemic arteries to drop.

2. Management

There are instances in a normal, healthy person where, for some reason, the blood pressure increases or decreases. Blood vessels can manage blood pressure by constricting or dilating to counteract this. Blood vessels have smooth muscle that surrounds them, and they are made of tissue with some elasticity to it.

These two components allow for blood vessels to either constrict or dilate to help manage our blood pressure:

- **Vasodilation:** If there is an increase in blood pressure, the vessel will relax and dilate in order to help maintain homeostasis by decreasing blood pressure.
- **Vasoconstriction:** If there is a decrease in blood pressure, blood vessels will tense and constrict in order to help maintain homeostasis by increasing blood pressure.

Blood Vessels



TERMS TO KNOW

Vasodilation

The term used to describe when the muscular walls of a vessel relax, causing the diameter of the vessel to enlarge; vasodilation decreases blood pressure and makes it easier for blood to flow through a vessel.

Vasoconstriction

A term used to describe when the muscular walls of a vessel tense, causing the diameter of the vessel to decrease; vasoconstriction increases blood pressure and makes it more difficult for blood to flow through a vessel.

3. Disorders

Hypertension is a condition characterized by chronically high blood pressure. Having chronically high blood

pressure can lead to various types of illnesses and conditions.

➔ **EXAMPLE** One condition caused by high blood pressure is atherosclerosis. Atherosclerosis is a condition in which plaque builds up in the arteries, causing the path of blood flow to narrow. This, in turn, can lead to an increased risk of a heart attack.

Some risk factors that can cause a person to have hypertension include:

- Smoking
- Obesity
- Unhealthy diet or a diet high in cholesterol
- Lack of exercise
- Age

On the other side of the spectrum, a person could have hypotension, which is chronically low blood pressure.



TERM TO KNOW

Hypertension

The clinical term for high blood pressure, a person is considered to be hypertensive after three consecutive measurements of 140/90 mmHg or higher.



SUMMARY

Blood pressure is the pressure exerted on the walls of your vessels by blood as it is pumped from the heart. Systolic pressure is the highest pressure happening when blood is pumped from the left ventricle into the aorta. Diastolic pressure is lower and occurs when the ventricle is resting. The body **manages** increased blood pressure by vasodilation and decreases by vasoconstriction. **Disorders** associated with blood pressure include hypertension, chronically high blood pressure, and hypotension, or chronically low blood pressure.

Keep up the learning and have a great day!

Source: THIS WORK IS ADAPTED FROM SOPHIA AUTHOR AMANDA SODERLIND



ATTRIBUTIONS

- [Vasodilation and Vasoconstriction](#) | Author: Wikipeda | License: Creative Commons



TERMS TO KNOW

Blood Pressure

The pressure that blood exerts on the wall of a vessel that is measured in units of millimeters of mercury (mmHg). Blood pressure is the driving force that creates blood flow throughout the vessels of the body.

Diastolic Pressure

One of the two measures of blood pressure, diastolic pressure is a lower pressure that occurs when the left ventricle of the heart is in diastole (resting) which causes the pressure in the systemic arteries to drop.

Hypertension

The clinical term for high blood pressure, a person is considered to be hypertensive after three consecutive measurements of 140/90 mmHg or higher.

Systolic Pressure

One of two measures of blood pressure, systolic pressure is a higher pressure that occurs when the left ventricle of the heart is in systole (contracting) and pumping blood into the arteries, causing their pressure to increase.

Vasoconstriction

A term used to describe when the muscular walls of a vessel tense, causing the diameter of the vessel to decrease; vasoconstriction increases blood pressure and makes it more difficult for blood to flow through a vessel.

Vasodilation

The term used to describe when the muscular walls of a vessel relax, causing the diameter of the vessel to enlarge. Vasodilation decreases blood pressure and makes it easier for blood to flow through a vessel.