

Conditions and Disorders

What are the common conditions and disorders that affect your heart?

Heart conditions are among the most common types of disorders. In the United States, [heart disease](#) is the leading cause of [death](#).

Common conditions that affect your heart include:

- [Arrhythmia](#): A heartbeat that's too fast, too slow or beats with an irregular rhythm.
- [Cardiomyopathy](#): Unusual thickening, enlargement or stiffening of your heart muscle.
- [Congestive heart failure](#): Your heart is too stiff or too weak to properly pump blood throughout your body.
- [Coronary artery disease](#): Plaque buildup that leads to narrow coronary arteries.
- [Diabetes](#): Your blood sugar is higher than it should be.
- [Heart attack \(myocardial infarction\)](#): A sudden coronary artery blockage that cuts off oxygen to part of your heart muscle.
- [Heart valve disease](#): A valve in your heart isn't working right.
- [High blood pressure](#): Your blood is pushing too hard against your artery walls.
- [High cholesterol](#): Your blood has too many fats in it.
- [Pericarditis](#): Inflammation in your heart's lining (pericardium).

Common signs or symptoms of heart conditions

Symptoms of heart conditions include:

- [Chest pain](#).
- [Heart palpitations](#).
- [Dizziness](#).
- [Shortness of breath](#).
- [Fatigue](#).
- [Swelling](#) in your lower body.

Common tests to check the health of your heart

Tests to check your heart health include:

- [Blood pressure measurement](#).
- [Electrocardiogram](#) (EKG).
- [Echocardiogram](#).
- [Chest X-ray](#).
- [Blood tests](#).
- [Cardiac catheterization](#).
- [Computed tomography](#) (CT).
- [Heart MRI](#) (magnetic resonance imaging).
- [Stress test](#).

Common treatments for the heart

Treatments for heart conditions include:

- Medicine to [lower blood pressure](#) or [prevent clotting](#), for example.
- Changes to daily habits, like what you eat and how much physical activity you get.
- Medical devices like a [pacemaker](#).
- Procedures like [catheter ablation](#) or [angioplasty](#).
- Operations like [coronary artery bypass surgery](#) or a [valve replacement](#).

Care

How can I keep my heart healthy?

If you have a condition that affects your heart, follow your healthcare provider's treatment plan. It's important to take medications at the right times and in the right amounts.

You can also make lifestyle changes to keep your heart healthy. You can strive to:

- Achieve and maintain a weight that's healthy for you.
- Drink [alcohol](#) in moderation.
- [Eat heart-healthy foods](#) like plenty of fruits, vegetables and whole grains.
- Be physically active for at least 150 minutes per week.
- Limit how much sodium you consume.
- Manage your [stress](#) with healthy strategies like [meditation](#) or journaling.

[Quit smoking](#) and/or using tobacco products and avoid [secondhand smoke](#). If you smoke, ask a healthcare provider for resources to help you quit

Why are my cholesterol numbers important?

Your [cholesterol](#) levels are important because they help you know your risk for [heart disease](#). Cholesterol is a type of lipid (fat) that helps your body perform many important functions. But too much cholesterol in your [blood](#) is harmful. It can enter your [artery](#) wall, damage its integrity and lead to atherosclerotic plaque (hardened deposits) forming.

This process of plaque buildup is called [atherosclerosis](#). It can lead to serious problems like:

- [Coronary artery disease](#): Blocked blood flow to your [heart](#).
- [Peripheral artery disease](#): Blocked blood flow to your legs and arms.
- [Carotid artery disease](#): Blocked blood flow to your [brain](#).

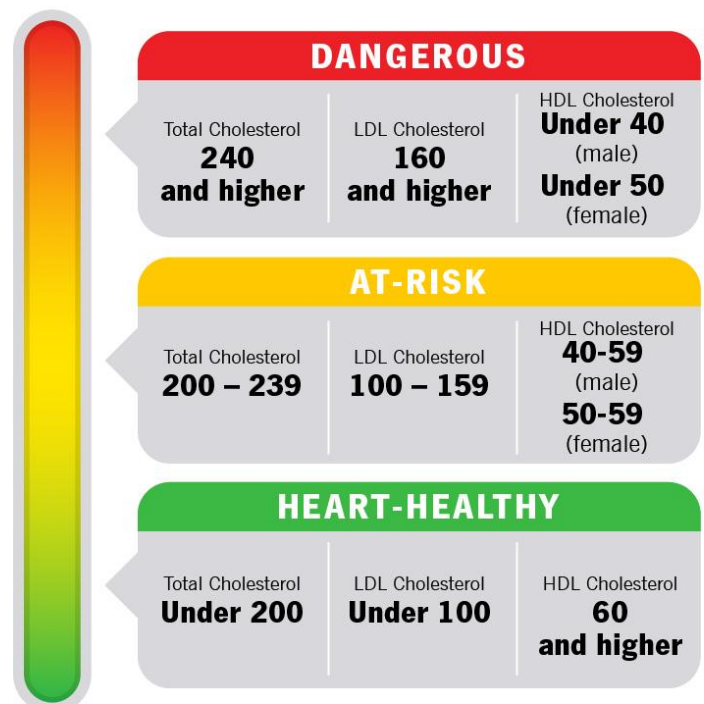
Cholesterol travels through your blood silently. And it turns into [plaque](#) silently. Plaque buildup is like someone tiptoeing on a carpet. You might not see or notice its presence for a long time. You may have no symptoms until you have a [heart attack](#) or [stroke](#). At that point, the plaque is like high heels on a hardwood floor. And it's already caused serious damage to your body.

You can live for many years with high cholesterol and not even know it. That's why it's essential to get your cholesterol numbers checked on a regular basis. If your cholesterol numbers are too high ([hyperlipidemia](#)), that's a red flag for you and your healthcare provider.

Many people have high cholesterol, which is a major risk factor for heart disease. But you're not stuck with the cholesterol numbers you have. It's possible to change them. Catching high cholesterol early gives you a chance to make changes and achieve good cholesterol numbers.

Cholesterol numbers in the heart-healthy range can help lower your risk of heart disease.

Cholesterol Levels



What cholesterol levels are tested?

The main cholesterol levels your provider checks are:

- **Total cholesterol.** This is the total amount of cholesterol that's circulating in your blood.
- **[LDL or low-density lipoprotein](#).** This is the “bad” cholesterol that contributes to plaque buildup in your arteries, leading to heart attacks and strokes.
- **[HDL or high-density lipoprotein](#).** This is the “good” cholesterol that helps clear out the cholesterol your body doesn't need.
- **[Triglycerides](#).** This is a type of fat that can raise your heart attack and stroke risks.

Your provider checks your cholesterol levels with a blood test they call a [lipid panel](#) (or lipid profile). A provider will draw blood from a vein in your arm and send the blood to a lab for analysis. Be sure to closely follow your provider's instructions on how to prepare for the test. You'll likely need to fast for 12 hours beforehand. This means avoiding all foods and drinks except water.

When your results come in, your provider will let you know. You may also be able to access your results through your electronic medical record.

What is the unit of measurement for cholesterol?

Healthcare providers measure cholesterol levels as milligrams of cholesterol per deciliter of blood. The abbreviation is mg/dL. Providers use these same units to measure your triglycerides.

What are normal cholesterol levels?

Normal cholesterol levels vary based on your age, ethnicity and [sex](#).

Normal cholesterol levels by age chart

The chart below shows normal cholesterol levels. Healthcare providers consider these good cholesterol numbers for most people. If you have heart disease or many risk factors, your LDL target may be different. Your healthcare provider may want your LDL level to be below 70 mg/dL. So, it's important to talk with your provider about your test results and what they mean for you.

All units in the chart below are mg/dL.

Age	Total cholesterol	Triglycerides	LDL cholesterol	HDL cholesterol
19 and younger	Below 170	Below 150	Below 110	Above 45
20 and older; males	125 to 200	Below 150	Below 100	40 or higher

Age	Total cholesterol	Triglycerides	LDL cholesterol	HDL cholesterol
20 and older; females	125 to 200	Below 150	Below 100	50 or higher

As you review your results, remember that you want your LDL to be low and your HDL to be high. Ideally, your HDL should be above 60 to offer you protection against heart disease.

Sex-based differences

Most normal cholesterol levels are the same regardless of your sex. But there's one key difference among adults. That's your HDL number. As the chart above shows, [females](#) need a higher HDL level (at least 50) compared to males (at least 40).

What's considered high cholesterol?

High cholesterol generally means your total cholesterol is 200 mg/dL or higher. But providers use additional categories like "borderline high" and "near optimal" to break down your results. If your numbers are close to normal levels, they may be easier to manage through lifestyle and dietary changes.

High cholesterol levels by age chart

The chart below shows cholesterol levels that are higher than normal. All units are mg/dL.

Age	Total cholesterol	Non-HDL cholesterol	LDL cholesterol
19 and younger	Borderline high: 170-199; High: 200 or higher	Borderline high: 120-144; High: 145 or higher	Borderline high: 110-129; High: 130 or higher
20 and older	Borderline high: 200-239; High: 240 or higher	High: 130 or higher	Near-optimal: 100-129; Borderline high: 130-159; High: 160-189; Very high: 190 or higher

Can cholesterol levels be too low or too high?

There are upper limits for your total cholesterol. Lower is better — as low as you can go. Researchers have found that a lower LDL is better. They haven't set a lower limit for it. The higher your HDL number is, the better it is for you. So your LDL can't be too low and your HDL can't be too high.

How often should I get my cholesterol checked?

Your provider will tell you how often you need your cholesterol checked. It depends on your:

- **Age:** The older you get, the more often you need to have your numbers checked.
- **Family history:** If you have a close biological family member with a history of heart disease, you face a higher risk of heart problems, too. You may need cholesterol tests more often if your family member has high cholesterol or a history of heart attack or stroke.

- **Risk factors for heart disease:** If you have a heart disease diagnosis or risk factors, you'll need cholesterol tests more often.
- **Sex:** Males need more frequent tests starting at a younger age.

Children should get their first test between ages 9 and 11. Then, they should receive a test every five years. Your child's provider may recommend starting at a younger age based on family history.

Here are general guidelines for adults based on sex and age.

Males

Age	How often to get your cholesterol checked
20 to 44	Every five years.
45 to 65	Every one to two years.
65+	Every year.

Females

Age	How often to get your cholesterol checked
20 to 54	Every five years.
55 to 65	Every one to two years.
65+	Every year.

A note from Cleveland Clinic

Knowing your cholesterol numbers can help you learn your risk for heart disease. But keep in mind that your cholesterol numbers are just part of the story. Your provider will also look at other aspects of your health to learn more about your risks. So, if your numbers fall outside the normal range, don't panic. Talk with your provider about what your cholesterol levels mean in the context of your overall health. And work with your provider to get your numbers back to a healthier place.

What can I do to lower my blood pressure?

1. Eat a heart-healthy diet (DASH diet)

- Focus on fruits, vegetables, whole grains, and lean proteins (like fish, chicken, and legumes).
- Reduce **salt (sodium)** intake — aim for less than **1,500–2,300 mg/day**.
- Eat foods rich in **potassium** (bananas, spinach, sweet potatoes, oranges).
- Limit processed foods, fried foods, and red meats.

2. Maintain a healthy weight

- Even **losing 5–10% of body weight** can make a noticeable difference in blood pressure.
- Monitor your **waistline** — abdominal fat increases risk more than total weight.

3. Exercise regularly

- Aim for **30 minutes of moderate activity** (like brisk walking, cycling, or swimming) **most days of the week**.
- Regular movement improves circulation and strengthens your heart.

4. Avoid smoking and limit alcohol

- **Smoking** causes an immediate spike in blood pressure.
- If you drink, limit alcohol to **1 drink per day for women, 2 for men**.

5. Manage stress

- Chronic stress can raise blood pressure. Try:
 - Deep breathing or meditation
 - Yoga or tai chi
 - Spending time in nature
 - Listening to calming music

6. Get enough sleep

- Poor sleep (especially sleep apnea) can raise blood pressure.

- Aim for **7–8 hours of quality sleep** per night.

7. Limit caffeine

- Some people are sensitive to caffeine's blood pressure-raising effect.
- Try reducing coffee or energy drinks to see if it helps.

8. Follow your doctor's advice

- If you're on **blood pressure medication**, take it regularly.
- Check your **blood pressure at home** and track changes.
- Schedule **regular medical checkups**.

What are the symptoms of a heart attack?

Major Symptoms

1. Chest pain or discomfort

- Pressure, squeezing, fullness, or pain in the center or left side of the chest
- It may last for more than a few minutes, or go away and come back

2. Pain in other areas of the upper body

- Can spread to **the shoulders, neck, jaw, arms (especially the left), or back**

3. Shortness of breath

- May occur **with or without chest pain**

4. Cold sweat

- Feeling clammy or suddenly breaking out in a sweat

5. Nausea or vomiting

- Especially common in women

6. Lightheadedness or dizziness

- Feeling faint or unusually weak

Additional (and often overlooked) symptoms — especially in women

Women may experience more subtle or unusual symptoms such as:

- **Unusual fatigue** (feeling extremely tired for no clear reason)
- **Indigestion or heartburn-like discomfort**
- **Pain in the upper back, jaw, or throat**
- **Shortness of breath without chest pain**

What foods should I eat to prevent heart disease?

1. Fruits and Vegetables (the more colorful, the better)

- Aim for **at least 5 servings per day**.
- Rich in vitamins, minerals, antioxidants, and fiber that protect your arteries.
- Best picks:
 - **Leafy greens** (spinach, kale, fenugreek)
 - **Berries** (strawberries, blueberries)
 - **Citrus fruits** (oranges, grapefruit)
 - **Tomatoes, broccoli, carrots**

2. Whole Grains

- Replace refined grains (white rice, white bread) with whole ones.
- Help lower cholesterol and improve blood sugar levels.
- Examples:
 - **Oats, brown rice, quinoa, whole wheat, millets**

3. Healthy Proteins

- Choose **lean proteins** and reduce red/processed meats.

- Good sources:
 - **Fish** (especially salmon, sardines, tuna — rich in omega-3s)
 - **Legumes** (beans, lentils, chickpeas)
 - **Skinless chicken or turkey**
 - **Soy products** (tofu, edamame)

4. Healthy Fats

- Replace saturated and trans fats with unsaturated fats.
- Heart-healthy options:
 - **Olive oil, canola oil, avocado**
 - **Nuts** (almonds, walnuts)
 - **Seeds** (chia, flax, sunflower)

5. Limit Sodium and Added Sugar

- Too much salt raises blood pressure, and excess sugar adds unhealthy fat.
- Avoid:
 - Processed foods (chips, instant noodles, sauces)
 - Sugary drinks (cola, packaged juices)
 - Bakery items and fried snacks

6. Low-fat or plant-based dairy

- Choose **low-fat milk, yogurt, or fortified plant milks (like almond or soy milk)**.
- Avoid full-fat dairy and butter.

7. Drink smart

- **Water** should be your main drink.
- Limit caffeine and alcohol.
- Green tea (unsweetened) can be a good antioxidant-rich choice.

Bonus tips

- Eat smaller portions, chew slowly, and avoid late-night heavy meals.
- Include **fiber-rich foods** — they lower cholesterol.
- Enjoy **dark chocolate (70%+ cocoa)** occasionally — it supports healthy blood vessels.

How the heart pumps blood

Heart Chambers

The heart has **four chambers**:

- **Right atrium** – receives oxygen-poor blood from the body
- **Right ventricle** – pumps blood to the lungs to get oxygen
- **Left atrium** – receives oxygen-rich blood from the lungs
- **Left ventricle** – pumps oxygen-rich blood to the entire body

The **left ventricle** is the strongest chamber because it pushes blood throughout the whole body.

Blood Flow Cycle

The pumping happens in **two main circuits**:

a) Pulmonary Circulation (to the lungs)

1. Oxygen-poor blood from the body enters the **right atrium**.
2. Moves into the **right ventricle**.
3. Right ventricle pumps it through the **pulmonary artery** to the **lungs**.
4. Blood gets oxygenated in the lungs and releases carbon dioxide.

b) Systemic Circulation (to the body)

1. Oxygen-rich blood returns to the **left atrium** from the lungs via the **pulmonary veins**.
2. Moves into the **left ventricle**.

3. Left ventricle pumps it through the **aorta** to deliver oxygen and nutrients to the whole body.

Heartbeat and Valves

- The heart has **valves** (tricuspid, pulmonary, mitral, aortic) that **prevent backflow**.
- A **heartbeat** has two phases:
 - **Systole** – ventricles contract, pushing blood out
 - **Diastole** – ventricles relax, filling with blood

The heart's rhythm is controlled by **electrical signals** from the **sinoatrial (SA) node**, often called the “natural pacemaker.”

Heart rate and emotions (heartbeat changes with stress/love)

1. How emotions affect heart rate

Your heart is controlled by the **autonomic nervous system (ANS)**, which has two parts:

- **Sympathetic nervous system** – “fight or flight” → speeds up heart rate
- **Parasympathetic nervous system** – “rest and digest” → slows down heart rate

Different emotions trigger these systems:

Stress, Anxiety, Fear

- Stress hormones (like **adrenaline**) are released.
- Heart rate **increases**, blood pressure rises, and the heart pumps more blood to muscles.
- Example: Feeling anxious before a big exam → your heart races.

Love, Excitement, Happiness

- Positive emotions can also raise heart rate temporarily (but in a pleasant way).

- Being near someone you love or seeing something exciting → your heart may **flutter or skip a beat**.
- Oxytocin and dopamine (hormones of bonding and pleasure) modulate this effect.

Calm, Relaxation, Meditation

- Deep breathing, meditation, or listening to calming music activates the **parasympathetic system**.
- Heart rate **slows down**, variability increases (a sign of a healthy heart).

Heart Rate Variability (HRV)

- HRV = the variation in time between heartbeats
- **High HRV** → your heart responds flexibly to stress and recovery
- **Low HRV** → can be linked to chronic stress, fatigue, or heart problems

The vagus nerve and calm breathing

What is the vagus nerve?

- It's the **10th cranial nerve**, running from your brainstem down through your chest and abdomen.
- It's a key part of the **parasympathetic nervous system** — the “rest and digest” system.
- It helps **slow heart rate, lower blood pressure, and promote relaxation**.

How calm breathing activates the vagus nerve

When you breathe **slowly and deeply**, you stimulate the vagus nerve:

1. **Deep diaphragmatic breaths** (breathing into your belly, not just your chest) send signals to the brain.
2. These signals activate the **parasympathetic system**, which:

- Slows the heart rate
- Reduces stress hormones
- Improves digestion
- Promotes a sense of calm

Simple breathing exercises for vagus nerve activation

1. 4-7-8 Breathing

- Inhale through your nose for 4 seconds
- Hold for 7 seconds
- Exhale slowly for 8 seconds

2. Box Breathing

- Inhale 4 seconds → Hold 4 → Exhale 4 → Hold 4

3. Diaphragmatic Breathing

- Place a hand on your belly, breathe deeply so your belly rises, not just your chest

Practicing these for **5–10 minutes a day** can lower heart rate, reduce stress, and improve heart health.

Importance of heart health (diet, exercise, rest)

1. Diet

- **Why it matters:** What you eat directly affects your blood vessels, blood pressure, cholesterol, and weight.
- **Heart-healthy habits:**
 - Eat **fruits, vegetables, whole grains, and lean proteins**
 - Include **healthy fats** (avocado, nuts, olive oil)
 - Limit **salt, sugar, and processed foods**
 - Maintain a balanced portion size to avoid excess weight

A good diet helps prevent plaque buildup in arteries and keeps blood pressure and cholesterol in check.

2. Exercise

- **Why it matters:** Regular activity strengthens the heart, improves circulation, and lowers blood pressure.
- **Recommended:**
 - **150 minutes/week of moderate-intensity** activity (like brisk walking or cycling)
 - Include **strength training** 2–3 times/week
 - Even short, frequent walks or stretching help if you have a sedentary lifestyle

Exercise improves heart efficiency and reduces the risk of heart attacks and strokes.

3. Rest and Sleep

- **Why it matters:** Poor sleep or chronic stress can raise blood pressure and heart rate, and increase the risk of cardiovascular problems.
- **Tips for healthy rest:**
 - Aim for **7–8 hours of quality sleep** per night
 - Practice **stress-relief techniques** like meditation, deep breathing, or yoga
 - Maintain a **consistent sleep schedule**

Good rest helps the heart recover daily, lowers stress hormones, and keeps your nervous system balanced.

Key takeaway

- **Diet** → fuels your heart and protects arteries
- **Exercise** → strengthens the heart and circulation
- **Rest** → allows recovery and reduces stress impact

Together, these habits **create a strong, resilient heart** and reduce long-term risk of heart disease.

How meditation or music affects heartbeat

1. Meditation

- Meditation activates the **parasympathetic nervous system** (“rest and digest”) and **calms the sympathetic system** (“fight or flight”).
- **Effects on heartbeat:**
 - **Slows heart rate**
 - **Increases heart rate variability (HRV)** → a sign of a healthy, adaptable heart
 - Reduces stress hormones like **adrenaline and cortisol**
- **Examples:**
 - **Mindfulness meditation:** Focus on breath or bodily sensations
 - **Loving-kindness meditation:** Fosters positive emotions
 - **Guided meditation:** Follow a calming voice

Regular meditation can lower resting heart rate and improve overall cardiovascular health.

2. Music

- Music influences the **autonomic nervous system**, affecting heart rhythm and blood pressure.
- **Effects on heartbeat:**
 - **Slow, calm music** (classical, ambient, or instrumental) → slows heart rate, lowers blood pressure
 - **Uplifting or fast music** → can increase heart rate temporarily (useful for exercise motivation)
- **Mechanism:**
 - Music stimulates the **vagus nerve** and emotional centers in the brain
 - Encourages **rhythmic breathing**, which further regulates heart rate

Many hospitals now use music therapy to reduce stress before surgery or to calm patients with heart issues.

Hypertension (High Blood Pressure)

- **Definition:** When blood pressure is consistently above normal (usually $\geq 130/80$ mmHg).
- **Why it matters:** Can damage arteries, heart, kidneys, and increase risk of stroke or heart attack.
- **Causes:** Stress, poor diet, obesity, lack of exercise, genetics.
- **Prevention/Tips:** Eat less salt, exercise regularly, manage stress, avoid smoking and excessive alcohol.

Blood Pressure Monitoring

- Measures the force of blood against artery walls.
- Can be done with:
 - **Manual sphygmomanometer** (arm cuff + stethoscope)
 - **Digital BP monitor** (easy to use at home)
- Helps detect hypertension early.

Pulse and Heart Rate Measurement

- Pulse = number of heartbeats per minute.
- Can be measured at **wrist, neck, or chest**.
- **Normal resting heart rate:** 60–100 bpm (lower in athletes).
- Can indicate fitness level or stress.

ECG (Electrocardiogram) and Heart Imaging Basics

- **ECG:** Records electrical activity of the heart; detects irregular rhythms, heart attacks, or conduction problems.
- **Imaging (Echo, MRI, CT):** Visualizes heart structure, valves, and blood flow.

Wearable Tech for Heart Health

- Smartwatches and fitness trackers can monitor:
 - Heart rate
 - Blood oxygen levels
 - Sleep patterns
 - Detect irregular heart rhythms
- Useful for continuous monitoring and early alerts.

What is the heart?

The heart is a fist-sized organ that pumps [blood](#) throughout your body. It's your [circulatory system](#)'s main organ. Muscle and tissue make up this powerhouse [organ](#).

Your heart contains four muscular sections (chambers) that briefly hold blood before moving it. Electrical impulses make your heart beat, moving blood through these chambers. Your [brain](#) and [nervous system](#) direct your heart's function.

Function

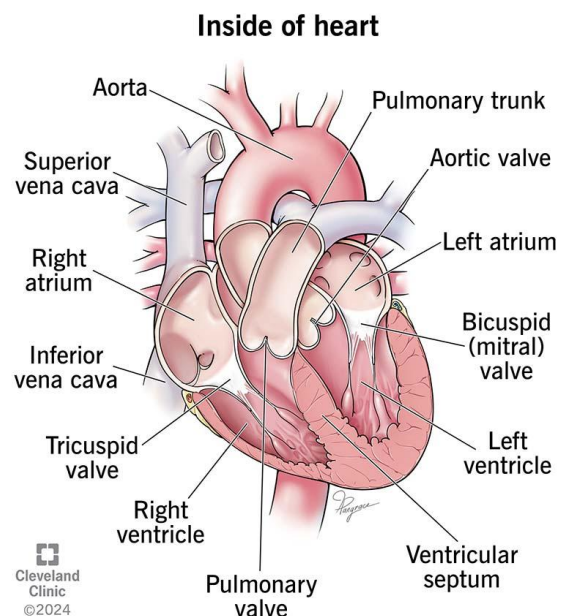
What is the function of the heart?

Your heart's main function is to move blood throughout your body. Blood brings oxygen and nutrients to your cells. It also takes away carbon dioxide and other waste so other organs can dispose of them.

Your heart also:

- Controls the rhythm and speed of your [heart rate](#).
- Maintains your [blood pressure](#).

Your heart works with these body systems to control your heart rate and other body functions:



- **Nervous system:** Your nervous system helps control your heart rate. It sends signals that tell your heart to beat slower during rest and faster during stress.
- **Endocrine system:** Your [endocrine system](#) sends out [hormones](#). These hormones tell your blood vessels to constrict or relax, which affects your blood pressure. Hormones from your [thyroid](#) gland can also tell your heart to beat faster or slower.

Anatomy

Blood moves through chambers inside your heart.

What are the parts of the heart?

The parts of your heart are like the parts of a building. Your heart anatomy includes:

- Walls.
- Chambers that are like rooms.
- Valves that open and close like doors to the rooms.
- [Blood vessels](#) like plumbing pipes that run through a building.
- An electrical conduction system like electrical power that runs through a building.

Heart walls

Your heart walls are the [muscles](#) that contract (squeeze) and relax to send blood throughout your body. A layer of muscular tissue called the septum divides your heart walls into the left and right sides.

Your heart walls have three layers:

- **Endocardium:** Inner layer.
- **Myocardium:** Muscular middle layer.
- **Epicardium:** Protective outer layer.

The epicardium is one layer of your [pericardium](#). The pericardium is a protective sac that covers your entire heart. It produces fluid to lubricate your heart and keep it from rubbing against other organs.

Heart chambers

Your heart has four separate [chambers](#). You have two chambers on the top (atrium, plural atria) and two on the bottom (ventricles), one on each side of your heart.

- **Right atrium:** Two large veins deliver oxygen-poor blood to your right atrium. The superior [vena cava](#) carries blood from your upper body. The inferior vena cava brings

blood from your lower body. Then the right atrium pumps the blood to your right ventricle.

- **Right ventricle:** The lower right chamber pumps the oxygen-poor blood to your [lungs](#) through the pulmonary artery. The lungs reload the blood with oxygen.
- **Left atrium:** After the lungs fill your blood with oxygen, the [pulmonary veins](#) carry the blood to the left atrium. This upper chamber pumps the blood to your left ventricle.
- **Left ventricle:** The left ventricle is slightly larger than the right. It pumps oxygen-rich blood to the rest of your body.

Heart valves

Your [heart valves](#) are like doors between your heart chambers. They open and close to allow blood to flow through. They also keep your blood from moving in the wrong direction.

Atrioventricular valves

The atrioventricular (AV) valves open between your upper and lower heart chambers. They include:

- **[Tricuspid valve](#):** Door between your right atrium and right ventricle.
- **[Mitral valve](#):** Door between your left atrium and left ventricle.

Semilunar valves

Semilunar (SL) valves open when blood flows out of your ventricles. They include:

- **[Aortic valve](#):** Opens when blood flows out of your left ventricle to your [aorta](#) (artery that carries oxygen-rich blood to your body).
- **[Pulmonary valve](#):** Opens when blood flows from your right ventricle to your [pulmonary arteries](#) (the only arteries that carry oxygen-poor blood to your lungs).

Blood vessels

Your heart pumps blood through three types of blood vessels:

- **[Arteries](#)** carry oxygen-rich blood from your heart to your body's tissues. The exception is your pulmonary arteries, which go to your lungs.
- **[Veins](#)** carry oxygen-poor blood back to your heart.
- **[Capillaries](#)** are small blood vessels where your body exchanges oxygen-rich and oxygen-poor blood.

Coronary arteries

Your heart receives nutrients through a network of [coronary arteries](#). These arteries run along your heart's surface. They serve the heart itself and include the:

- **Left coronary artery:** Divides into two branches (the circumflex artery and the left anterior descending artery).
- [Circumflex artery](#): Supplies blood to the left atrium and the side and back of the left ventricle.
- [Left anterior descending artery \(LAD\)](#): Supplies blood to the front and bottom of the left ventricle and the front of the septum.
- **Right coronary artery (RCA):** Supplies blood to the right atrium, right ventricle, bottom portion of the left ventricle and back of the septum.

Electrical conduction system

Your [heart's conduction system](#) is like the electrical wiring of a building. It controls the rhythm and pace of your heartbeat. Signals start at the top of your heart and move down to the bottom. Your conduction system includes:

- **Sinoatrial (SA) node:** Sends the signals that make your heart beat.
- **Atrioventricular (AV) node:** Carries electrical signals from your heart's upper chambers to its lower ones.
- **Left bundle branch:** Sends electric impulses to your left ventricle.
- **Right bundle branch:** Sends electric impulses to your right ventricle.
- **Bundle of His:** Sends impulses from your AV node to the Purkinje fibers.
- **Purkinje fibers:** Make your heart ventricles contract and pump out blood.

Where is your heart located?

Your heart is in the front of your chest. It sits slightly behind and to the left of your [sternum](#) (breastbone), which is in the middle of your chest.

Your heart is slightly on the left side of your body. It sits between your right and left lungs. The left lung is slightly smaller to make room for the heart in your left chest. Your [rib cage](#) protects your heart.

What does your heart look like?

Your heart looks a little bit like an upside-down pyramid with rounded edges. Large blood vessels go into and out of your heart to bring blood into and away from your heart. They connect your heart to the rest of your body, which it supplies with blood and oxygen.

How big is your heart?

Everyone's heart is a slightly different size. Generally, your heart is about the same size as your fist. On average, an adult's heart weighs about 10 ounces. Your heart may weigh a little more or a little less, depending on your body size and sex.