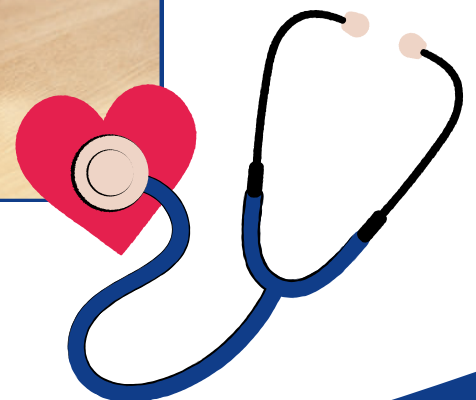


CT Coronary Artery Calcium Score

Understanding Your Results



CT Coronary Artery Calcium (CAC) Tests

One of the best ways to determine your future risk for coronary artery disease is a CT Coronary Artery Calcium screening.

This booklet provides information about:

- how your heart works
- your heart disease and risk factors
- how to interpret a CT coronary artery calcium score
- your treatment options to reduce your risk for coronary artery disease.



Please use this book as a guide only. It does not replace medical or professional advice. If you have specific questions or concerns, talk with your health care provider

What to expect after your screening

After your CAC test:

- ✓ Your doctor will review your score with you.
- ✓ You may discuss lifestyle changes such as diet, smoking cessation, and exercise.
- ✓ Medication (e.g., cholesterol lowering therapy) may be recommended.
- ✓ Additional tests (stress testing or imaging) might be considered in some cases.

Why Perform a CAC Test?

Your physician may recommend a CAC test if you have uncertain heart disease risk and want more personalized risk information, particularly if:

- you are 40–80 years old and have risk factors like high blood pressure, family history, or high cholesterol
- you are deciding whether to start preventive therapies such as statins or aspirin
- traditional risk calculators have not provided a clear picture of your cardiovascular risk.

Note: CAC testing is not routinely recommended for people with very low risk of heart disease or those who already have known heart disease, bypass surgery, or stents.

How Your Heart Works

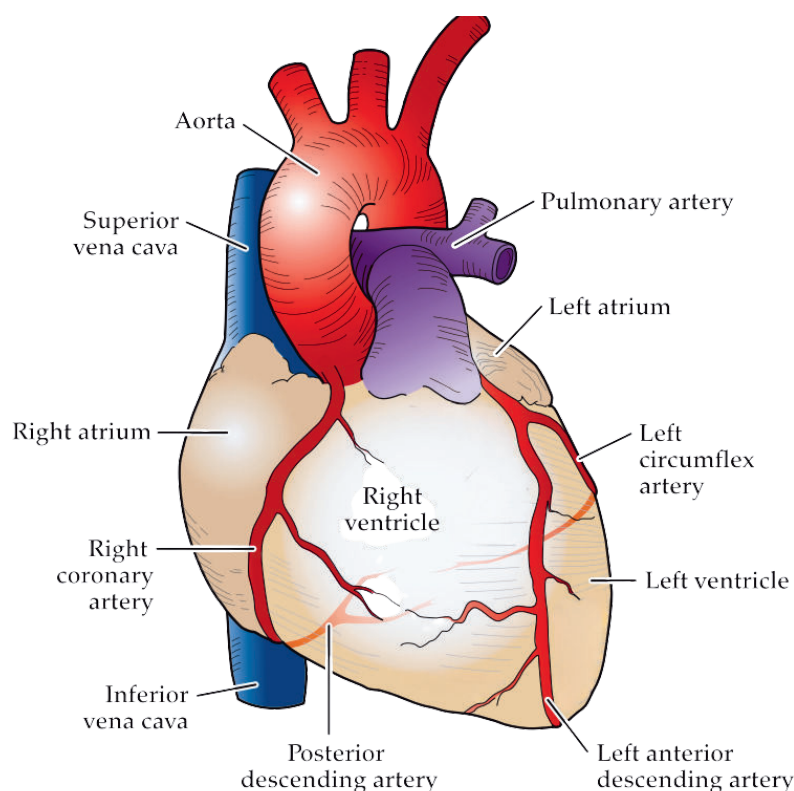
Your heart is a muscle that works like a pump. It sends oxygen-rich blood out to your body and brings oxygen-poor blood back to your heart and lungs. This blood travels through miles of blood vessels to deliver the oxygen your cells need to survive.

The heart gets its own blood supply from two main vessels called the coronary arteries, which sit on the outside of the heart muscle. The right coronary artery supplies blood to the bottom and back of the heart. The left coronary artery splits into two major branches that supply the front, left side, and back of the heart.

Each side of the heart has two chambers: an upper chamber called the atrium and a lower chamber called the ventricle. Valves between these chambers act like one-way doors to keep blood flowing in the right direction.

The right side of the heart receives oxygen-poor blood and pumps it to the lungs to pick up fresh oxygen. The left side then receives this oxygen-rich blood from the lungs and pumps it out to the rest of the body.

Your heart also has its own electrical system that controls the heartbeat. A small group of specialized cells sends electrical signals through the heart muscle, causing it to contract—or beat—about 60 to 100 times per minute.



What the CT Scan Shows

The CT scanner uses an ultra-fast X-ray and detector system to take 40 to 50 cross-sectional pictures of your chest. From these pictures, the scanner can build a 3-D image of your heart in only one-tenth of a second!

The purpose of this CT scan is to determine a coronary artery calcium score. This score is determined by the number, size and density (thickness) of the calcified plaque in the coronary arteries that supply blood to your heart.

Plaques are fatty deposits filled with cholesterol and inflammatory material that can form over time in your coronary arteries. As plaques develop, they harden (calcify).

The hardening of plaque is not necessarily a bad thing, it's the cholesterol and inflammatory part of the plaque that usually causes heart attacks. The CT scanner "sees" these calcifications and measures the total amount of plaque without the need for a procedure.

The more calcified plaque in your arteries, the greater your risk for future heart disease. This CT scan does not test for blockages. It only assesses your future risk for heart disease.

Your CT Report

A cardiovascular imaging specialist will read and analyze your scan.

Your report will include the following information:

- Your coronary artery calcium score is a marker of the total amount of calcified plaque in your arteries, which indicates your future risk for heart disease
- a percentile based on your calcium score based on your age, sex and race/ethnicity
- specific recommendations about your treatment options based on your coronary artery calcium score

What Your Score Means

Coronary artery calcium scores vary widely in men and women, ranging from scores of zero to in the thousands.

An ideal calcium score is zero. Even if your score is higher than zero, there are treatment options that can help reduce your future risk for heart disease.

Scope of Calcium Score

The CT scan shows only calcified plaque in your arteries and does not find other forms of heart disease such as valve disease or heart failure.

Talk with your healthcare provider if you have symptoms such as shortness of breath or ankle swelling. It is important to seek immediate care if you experience chest pain.

How Doctors Use Your CAC Score

Your CAC score is one part of your risk assessment.

Your clinician will consider:

- Your score
- Age, sex, and traditional risk factors (cholesterol, blood pressure, smoking, diabetes)
- Other clinical data

Because of this, the CAC score helps your physician tailor prevention plans, which may include lifestyle changes, medications, or further testing.

Limitations of the CAC Test

A CAC score has important limitations:

- Does not detect soft plaque (non-calcified), which can also cause heart attacks.
- A score of 0 doesn't guarantee no future heart disease.
- May not be appropriate for everyone; discuss with your provider whether it's right for you.

After your physician reviews your Coronary Artery Calcium (CAC) score, the next steps depend on your score and your overall cardiovascular risk profile (age, cholesterol, blood pressure, diabetes, smoking, and family history). Refer to the table on the following page for an outline of what different scores mean in regards vascular health and treatment.

Your CT scan will provide you with a coronary artery score.

For a general meaning of your score, please see the chart on the next below..

Your preliminary score is denoted below:

Score	What it means	Treatment
Zero	Ideal result: This score shows a low short-term risk for heart disease.	Continue your heart-healthy lifestyle. You typically do not need to take preventive medicines. Talk with your health care provider about treatment options if you have high cholesterol or diabetes, or if you use tobacco.
1 to 99	Mild plaque build-up: This indicates a small amount of plaque in your coronary arteries.	While this result is generally linked with low risk for heart disease, any amount of plaque does carry some risk. Talk with your health care provider about if you should start medicine to lower your lipids. This can slow and even reverse plaque development.
100 to 400	Moderate plaque build-up: This indicates a moderate amount of plaque in your coronary arteries.	Talk with your health care provider about starting medicine to lower your lipids to reduce their risk for future heart disease. Medicine to lower your lipids can help even if your lipid levels are normal
More than 400	Significant plaque build-up: This indicates severe coronary atherosclerosis (hardening of your arteries).	Talk with your health care provider about: • lowering your cholesterol • your LDL (“bad cholesterol”) should be less than 70 mg/dL • managing your blood pressure • managing diabetes (if you have it) • consider taking an aspirin each day.

Risk Factors You Cannot Control

These factors increase your risk of coronary artery disease but are not modifiable. Even if you cannot change them, knowing about them helps guide prevention decisions.

1. Age

- Risk increases as you get older.
- For men, risk rises significantly after age 45.
- For women, risk increases after age 55 (especially after menopause).

2. Biological Sex

- Men generally develop heart disease earlier than women.
- Women's risk increases after menopause due to hormonal changes.

3. Family History of Early Heart Disease

- You may be at higher risk if:
 - A father or brother was diagnosed before age 65
 - A mother or sister was diagnosed before age 55
 - A strong family history suggests a genetic predisposition.

4. Genetics / Inherited Conditions

- Some people inherit conditions that increase risk, such as:
 - Familial hypercholesterolemia (very high LDL cholesterol)
 - Certain inherited lipid disorders
 - Genetic clotting disorders

6. Personal History of Cardiovascular Disease

If you've previously had:

- A heart attack
- Stroke
- Peripheral artery disease
- Your future risk remains elevated, even if well controlled.

Risk Factors You Can Control

These are modifiable risk factors. Improving them can significantly lower your risk of heart attack, stroke, and progression of coronary artery disease.

1. High LDL Cholesterol (“Bad” Cholesterol)

- Elevated LDL contributes to plaque buildup in the arteries.
- Can often be improved with diet, exercise, and medications (such as statins).
- Your clinician may set a specific LDL target based on your CAC score and overall risk.

Several medicines have been shown to reduce LDL cholesterol and subsequently reduce the risk of heart attack and stroke. If your coronary artery calcium score is higher than 100, you should consider taking a medicine to lower your LDL level. Even small reductions in LDL have been shown to reduce a heart event risk.

Ideal levels for LDL are less than 70mg/dL. The most common type of cholesterol medicine is a statin that can lower LDL. These medicines can decrease plaque growth over time and may even help reverse some existing plaque.

There are many non-statin medicines that can also lower your LDL level and heart disease risk. You and your healthcare provider can decide together if medicine to lower your lipid level is right for you.

2. High Blood Pressure (Hypertension)

- Damages artery walls and accelerates plaque formation.
- Often has no symptoms.
- Managed with lifestyle changes and/or medication.

3. Smoking and Tobacco Use

- Strongly increases heart attack risk.
- Damages blood vessels and promotes clot formation.
- Quitting significantly reduces cardiovascular risk, even if you’ve smoked for years.

4. Diabetes and Prediabetes

- High blood sugar damages blood vessels.
- Diabetes greatly increases heart disease risk.
- Controlled with diet, weight management, physical activity, and medications when needed.

5. Overweight and Obesity

- Associated with higher blood pressure, cholesterol abnormalities, and diabetes.
- Even modest weight loss (5–10%) can improve heart health markers.

6. Physical Inactivity

- Being physically inactive doubles your risk for heart disease. Even 20 - 30 minutes of moderate activity three to four times a week can reduce your risk.

Moderation with Salt (Sodium)

Protecting Your Blood Pressure and Arteries

If your coronary artery calcium (CAC) score shows plaque buildup, controlling sodium intake is an important step in protecting your heart.

The American Heart Association recommends limiting sodium to:

- No more than 2,300 mg per day for most adults
- Following provider's directions for those with heart disease

Common Sources of Sodium

Most sodium does not come from the salt shaker — it comes from processed and restaurant foods.

High-sodium foods often include:

- Canned soups
- Processed meats (deli meat, bacon, sausage)
- Frozen meals
- Fast food
- Snack foods (chips, crackers)
- Breads and rolls

Practical Ways to Reduce Sodium

- Choose fresh or frozen vegetables (without added sauces)
- Compare food labels and choose lower-sodium options
- Rinse canned beans and vegetables
- Flavor foods with herbs, lemon, garlic, or spices instead of salt
- Limit highly processed and packaged foods

Lowering sodium can help reduce blood pressure within weeks.

Eat more vegetables and fruits: Eating enough vegetables and fruits are strongly linked to good health and especially the health of the heart and blood vessels.

Added Sugars: Why Moderation Matters

Reducing added sugars is an important part of protecting your heart health, especially if your coronary artery calcium (CAC) score shows plaque buildup.

Diets high in added sugars are linked to:

- **Higher triglyceride levels**
- **Increased LDL (“bad”) cholesterol**
- **Weight gain and obesity**
- **Increased risk of type 2 diabetes**
- **Higher risk of heart disease**

The American Heart Association recommends limiting added sugars as part of an overall heart-healthy eating pattern.

Limiting Unhealthy Fats

Certain types of fat can raise LDL (“bad”) cholesterol and promote plaque buildup in the arteries.

Unhealthy fats include:

- Saturated fats (found in fatty meats, butter, full-fat dairy, coconut oil)
- Trans fats (found in some baked goods and processed snacks)

The American Heart Association recommends limiting saturated fat to less than 6% of total daily calories for people who need to lower cholesterol.

Healthier Fat Choices

- Olive oil and avocado oil
- Nuts and seeds
- Fatty fish (salmon, tuna, sardines)
- Avocados

