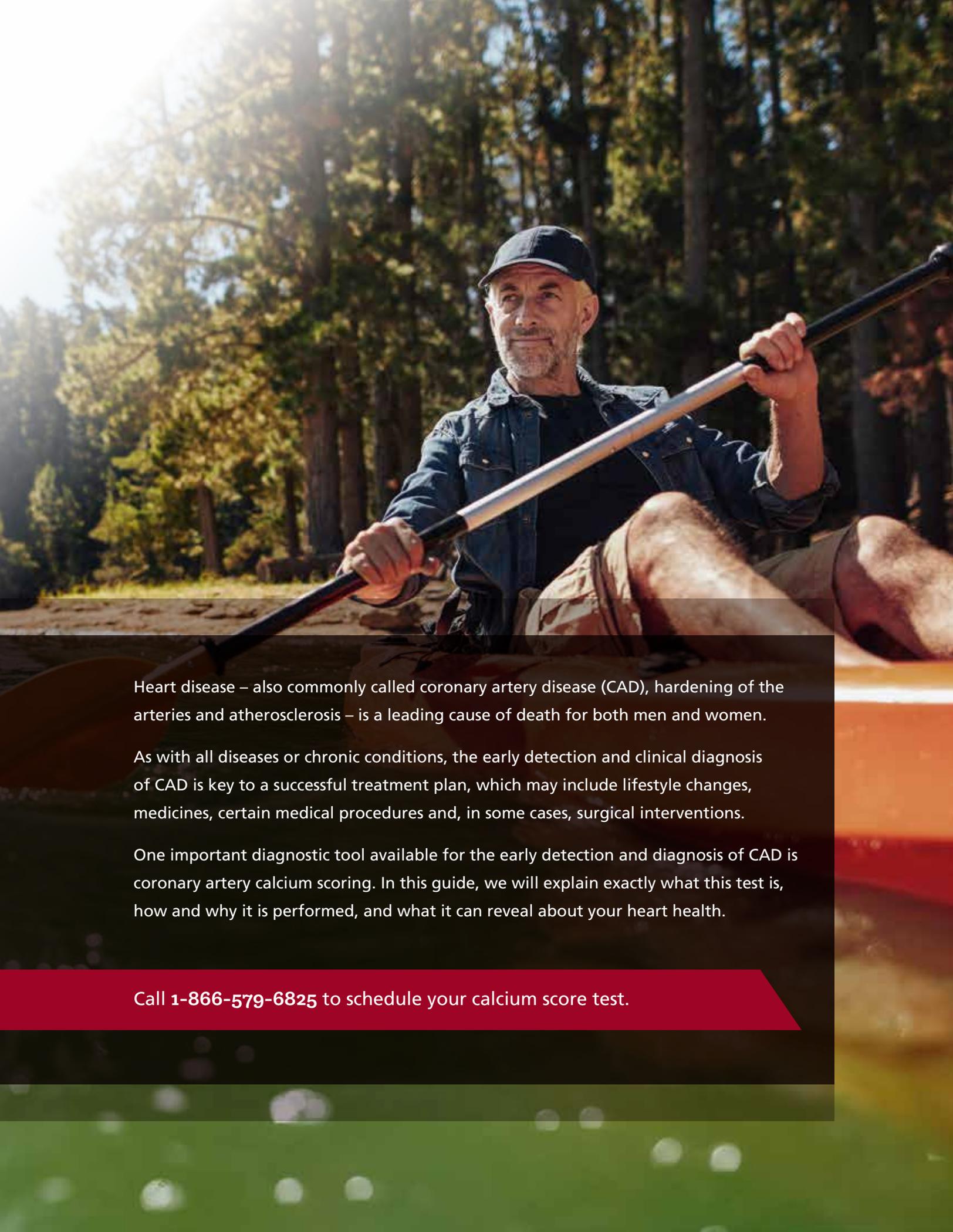




Calcium Scoring – Learn Your Heart Disease Risk
A Simple Test Can Save Your Life





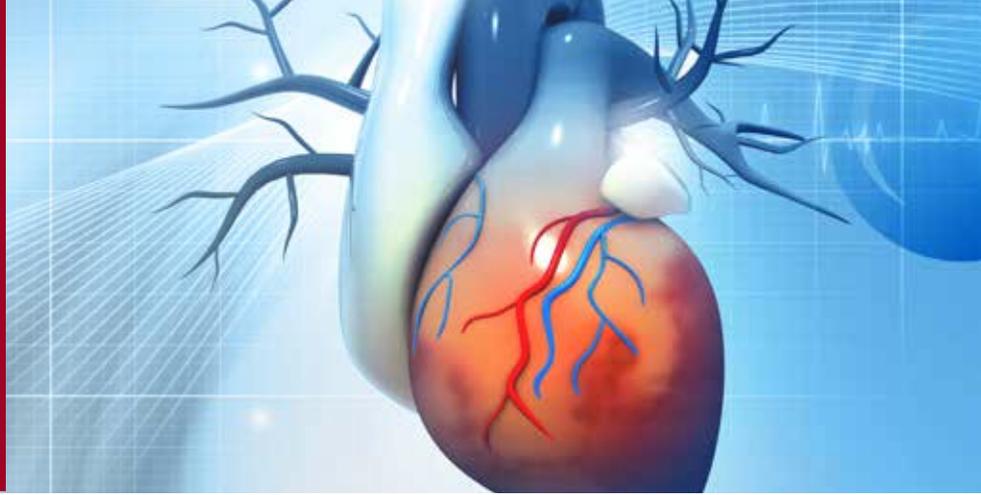
Heart disease – also commonly called coronary artery disease (CAD), hardening of the arteries and atherosclerosis – is a leading cause of death for both men and women.

As with all diseases or chronic conditions, the early detection and clinical diagnosis of CAD is key to a successful treatment plan, which may include lifestyle changes, medicines, certain medical procedures and, in some cases, surgical interventions.

One important diagnostic tool available for the early detection and diagnosis of CAD is coronary artery calcium scoring. In this guide, we will explain exactly what this test is, how and why it is performed, and what it can reveal about your heart health.

Call **1-866-579-6825** to schedule your calcium score test.

What is coronary artery disease?



The coronary arteries are the large blood vessels that supply your heart with oxygen-rich blood. Strong and continuous blood flow to the heart is essential for it to do its job efficiently. If blood flow is interrupted or constricted, serious consequences such as a heart attack can result.

Coronary artery disease or CAD is the name we use when these arteries are narrowed or blocked by the buildup of plaque – a waxy substance that can accumulate over many years due to a variety of factors. It is this plaque that limits or blocks the blood flow to the heart and can lead to serious health problems. Over time, the plaque may harden or rupture, resulting in a blood clot, which may cause additional narrowing or a complete blockage of the artery.

What conditions can be caused by CAD? What are the symptoms of each?

If left untreated, CAD can weaken the heart muscle over time and lead to angina, arrhythmias, heart failure or heart attack. A brief description of each condition and some common symptoms are included below. Some people may not experience any of the symptoms detailed below until they have a heart attack or experience a life-threatening arrhythmia.

Angina

Angina is discomfort or a feeling of pressure or squeezing in your chest. It may also be experienced as pain in your shoulders, arms, neck, jaw or back and is often mistaken for indigestion. Angina tends to get worse with activity or emotional stress and lessens when you rest.

Arrhythmia

An arrhythmia is when the rate or rhythm of your heartbeat is irregular. Many describe the sensation as a “fluttering” in their chest. Some arrhythmias can cause your heart to suddenly stop beating, which can cause death if not treated immediately. When this happens, it is called sudden cardiac arrest.

Heart Attack

A heart attack happens when one or more coronary arteries become completely blocked, cutting off blood flow to a section of the heart. Until blood flow is restored, the affected section of heart muscle begins to die. Immediate medical care is required, as once heart muscle has died, it cannot be restored and will be replaced by scar tissue, further weakening the heart. Heart attack symptoms are similar to those of angina but may last longer, be more severe, and be accompanied by shortness of breath, nausea, vomiting, light-headedness and a clammy feeling. The pain may go away and come back and may not be relieved during rest as with angina. If you or a loved one experiences any of these symptoms, call 9-1-1 immediately.

Heart Failure

Heart failure is when your heart is weakened and cannot pump enough blood to meet your body's needs. It doesn't mean your heart stops working completely as the name suggests; it just doesn't work efficiently, and as a result, you may feel short of breath and very tired. Heart failure can cause your body to retain fluids, causing swelling of the feet, ankles, stomach area and veins in the neck.

What causes CAD?

CAD is a process in which the inner layers of the coronary arteries are damaged. It develops slowly over time and can even begin in childhood. It is caused by a variety of things – some we can change, others we can't. We call these modifiable and non-modifiable risk factors. Often, when the modifiable risk factors are addressed, the influence of the non-modifiable risks can be lessened.

Modifiable Risk Factors (what we can change)

We all make lifestyle decisions every day – some good, some bad. If we choose to control the risk factors listed below by modifying our behavior and following our doctor's orders, we can have a lasting, positive effect on our health and our quality of life and decrease the likelihood that we will develop CAD.

- **Nutrition/Diet**

Eat a diet rich in fresh fruits and vegetables; whole grains; fat-free or low-fat dairy; and fish high in omega-3 fatty acids such as salmon, tuna and trout. Avoid or limit red meat; palm and coconut oils; sugary foods and beverages; saturated fats found in animal products; and trans fatty acids (trans fats) found in baked goods, crackers and stick margarine. Limit your salt intake by making low-sodium choices, avoiding prepackaged foods and taking the salt shaker off the table.

- **Tobacco Use**

Quit smoking! Smoking raises blood pressure and can damage arteries, leaving you susceptible to CAD and a host of other diseases including lung cancer and chronic obstructive pulmonary disease (COPD).

- **Weight Management**

Excess weight puts stress on all of the organs in the body, including the heart. It can also leave you vulnerable to developing diabetes, sleep apnea and other conditions that can contribute to the development of CAD. Work with your doctor to determine a healthy weight range for you and take steps to achieve safe, gradual, sustainable weight loss.

- **Physical Inactivity**

Routine physical activity can help to lower several risk factors including bad cholesterol and high blood pressure. It can also help to manage weight, raise good cholesterol and reduce stress. Be sure to talk to your doctor before beginning any exercise program.

- **Cholesterol**

Know your numbers and follow your doctor's advice to keep your blood cholesterol at a healthy level. This may involve dietary changes, an exercise regimen and possibly medication. If you are prescribed statin medications to control your cholesterol, take them as prescribed.

- **Blood Pressure**

Keeping your blood pressure under control is important for all aspects of your health. Work with your doctor to keep it at 120/80 or below.

- **Alcohol Intake**

Excessive alcohol use can raise blood pressure, cause liver damage and result in weight gain. Men should limit their alcohol usage to two drinks or less per day, and women should consume no more than one drink per day. One drink equals 5 ounces of wine, 12 ounces of beer or 1.5 ounces of liquor.

- **Manage Your Stress**

One of the most commonly reported triggers for heart attack is an emotionally upsetting event – especially one involving anger. Also, many people cope with stress by smoking, drinking or overeating – all of which are on the “avoid” list for those who want to remain healthy.

Non-Modifiable Risk Factors (what we can't change)

- **Age**

Growing old is a privilege, but it does bring about some inevitable changes. The odds of developing certain conditions, including CAD, do increase with age. However, living a heart-healthy lifestyle and controlling our modifiable risk factors as listed above can help us optimize our health and wellness throughout our lifetime.

- **Gender**

Men and women may face different health challenges due to simple anatomy. However, CAD is an equal-opportunity disease, and both sexes need to be vigilant and follow their doctor's orders to manage their risk factors. It is recommended that men be screened at a younger age than women.

- **Family History**

In addition to high cholesterol and high blood pressure (which can run in families), other conditions such as diabetes, inflammatory conditions and metabolic syndrome can also be inherited and contribute to CAD.

How is CAD diagnosed?



Your doctor will diagnosis CAD based on your medical and family history, your risk factors, a physical exam, and results from tests and procedures that he or she may order such as:

- Blood tests
- Chest X-ray
- Coronary angiography and cardiac catheterization
- Coronary artery calcium scoring
- Echocardiography
- EKG
- Stress testing

Coronary artery calcium scoring is the screening test that is the focus of this guide. Although it is widely available, its use by patients has been limited due to the high cost of the test and the fact that most insurances will not pay for it. Now, University Hospitals is pleased to offer the test at no cost to our patients. The next section describes calcium scoring in detail so you and your doctor can decide if it's right for you or your loved one.

Coronary artery calcium scoring

What is it?

Coronary artery calcium scoring is a noninvasive computed tomography (CT) scan that takes a series of very thin pictures of your heart and the vessels that supply blood to your heart. These pictures are used to measure the amount of calcium that has built up in the walls of your coronary arteries. Based on the images taken, you will be assigned a coronary artery calcium “score” that can range from zero to 400 or more.

The higher your level of calcium, the greater your risk for heart disease or CAD.

- A score of zero means that no calcium was detected and your risk of heart attack over the next 10 years is very low.
- A score of 1 – 399 indicates that there is some calcium present. The higher the score, the higher your risk of heart attack.
- A score of 400 or higher means extremely high levels of calcium were detected in your coronary arteries and aggressive treatment will be required.

Numerous studies in medical literature cite coronary artery calcium scoring as a valuable tool to predict future risk of heart attack.

How do I know if I should have the test?

Your doctor will determine if calcium scoring is right for you based on your medical history, risk factors, age, gender and ethnicity.

If you are a man age 45 or older or a woman age 55 or older with one or more of the following risk factors, you may be eligible for the test:

- High total blood cholesterol
- Low HDL (good) cholesterol
- High blood pressure
- Current smoker or history of smoking
- Diabetes
- Family history of heart disease
- Age 40 or older and diagnosed with a chronic inflammatory condition (inflammatory bowel disease, lupus, rheumatoid arthritis, psoriasis)

People with a very low risk of heart disease or who have already been diagnosed with heart disease would not benefit from a calcium scoring test.

The calcium scoring test is one important way you can be proactive about your health. Knowledge is power. Once you know your score, there are steps you can take to lessen or reverse your heart disease.

How much does it cost? Is it covered by insurance?

Although calcium scoring is widely available, it is generally not covered by insurance and can be expensive.

University Hospitals is pleased to offer this life-saving screening test to our patients at no cost.

What will the test be like? How do I prepare?

If it is determined that you would benefit from a calcium scoring test, your doctor will write an order or prescription for the scan. This order will be required when either you or your doctor call to schedule the test. The number to call is 1-866-579-6825.

Your appointment will last 20 – 30 minutes from start to finish. Since this is a completely noninvasive test, there is no elaborate preparation required. Simply arrive at your scheduled time and wear comfortable clothing that does not contain any metal components (zippers, buttons, etc.), as these can interfere with the scan. The radiology technician will also request that you remove any jewelry you may be wearing for the same reason.

Avoid caffeine (coffee, tea, caffeinated sodas and chocolate) and tobacco products the day of the test, as these can raise your heart rate and affect the accuracy of the test results.

You will be placed in a comfortable position on the CT table, and a radiology technician will perform the test, which only takes 5 – 10 minutes. Your heart rate will be monitored throughout the test. If your heart rate is too high, you may be given medication to lower it. The most accurate test results are achieved when your heart rate is below 90 beats per minute.

And that's it! You will then be free to go home and resume your normal routine.

University Hospitals offers calcium scoring at multiple locations across the region. See page 11 for a complete list.

What's next? Talking to your doctor about your results.

After your results have been interpreted by a radiologist, your primary care doctor or the doctor who referred you for the test will receive a copy of the results along with your calcium score.

If your test results indicate that CAD is present, you and your doctor will now discuss next steps to treat it and prevent it from progressing.

Depending on the severity of your CAD, your doctor may suggest the following to improve and manage your condition:

- Medications to control high blood pressure and high cholesterol
- Medications to reduce the risk of blood clots forming
- Certain medical procedures
- Diet and lifestyle changes including nutrition, physical activity, weight management, stress reduction and smoking cessation
- Surgical intervention to widen or bypass clogged arteries
- Cardiac rehabilitation – a medically supervised program designed to help improve the health of those with heart problems; it is often prescribed as a treatment for angina or after a heart attack or surgical intervention

Remember to take all your medicines as prescribed and follow all your doctor's recommendations for treatment. And, even if your risk of heart attack is determined to be low, continue to follow a heart-healthy lifestyle to keep it that way!

Where can I go for a calcium scoring test?

Once you have your physician order, you may call 1-866-579-6825 to schedule your test at any of the UH locations listed below. When you call, please ask for specific instructions as to where you should park and where to go to sign in for your test.

UH Cleveland Medical Center

1100 Euclid Avenue
Cleveland, Ohio 44106

UH Ahuja Medical Center

3999 Richmond Road
Beachwood, Ohio 44122

UH Bedford Medical Center*

44 Blaine Avenue
Bedford, Ohio 44146

UH Conneaut Medical Center

158 West Main Road
Conneaut, Ohio 44030

UH Elyria Medical Center

630 East River Street
Elyria, Ohio 44035

UH Geauga Medical Center

13207 Ravenna Road
Chardon, Ohio 44024

UH Geneva Medical Center

870 West Main Street
Geneva, Ohio 44041

UH Parma Medical Center

7007 Powers Boulevard
Parma, Ohio 44129

UH Portage Medical Center

6847 North Chestnut Street
Ravenna, Ohio 44266

UH Richmond Medical Center*

27100 Chardon Road
Richmond Heights, Ohio 44143

UH St. John Medical Center, a Catholic hospital

29000 Center Ridge Road
Westlake, Ohio 44145

UH Amherst Health Center

254 Cleveland Avenue
Amherst, Ohio 44001

UH Avon Health Center

1997 Healthway Drive
Avon, Ohio 44011

UH Broadview Heights Health Center

5901 East Royalton Road
Broadview Heights, Ohio 44147

UH Chagrin Highlands Health Center

3909 Orange Place
Orange Village, Ohio 44122

UH Concord Health Center

7500 Auburn Road
Concord Township, Ohio 44077

UH Fairlawn Health Center

3800 Embassy Parkway
Fairlawn, Ohio 44333

UH Medina Health Center

4001 Carrick Drive
Medina, Ohio 44256

UH Mentor Health Center

9000 Mentor Avenue
Mentor, Ohio 44060

UH Twinsburg Health Center

8819 Commons Boulevard
Twinsburg, Ohio 44087

UH Westlake Health Center

960 Clague Road
Westlake, Ohio 44145

**Campuses of UH Regional Hospitals*

To schedule your calcium score test, call **1-866-579-6825**. • University Hospitals | 11