

Learning more about

Coronary Artery Screening

The David A Baum Foundation recommends two screenings: The Calcium CT Scan and the The Carotid Intima-Media Thickness Scan (CIMT) in the start of your journey to healthier arteries. Below we break down each test for easier and quick understanding.

The Calcium CT Scan

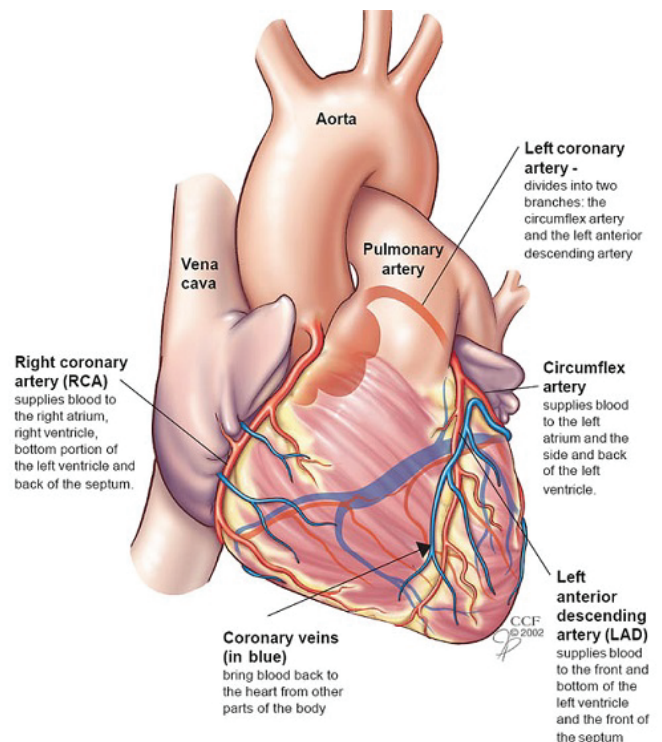
About:

The Calcium CT Scan is an inexpensive, noninvasive, 15-minute procedure which indicates the presence of arterial plaque inside your coronary arteries. Plaque, also known as fat deposits or LDL cholesterol, is the main culprit of heart attacks. The CT Scan is recommended for men over 50 years of age and women over 60 since women tend to show visible signs of calcium deposits 10 years after men. However, if your family has a history of heart attacks or strokes, the screening is recommended at a much younger age.

What It Looks For:

The arteries of concern are the small Coronary Arteries which surround the exterior of the heart. These arteries are crucial for heart health as they provide oxygen and nutrient rich blood to the heart muscles. The test scans the Left & Right Coronary arteries, the Circumflex Artery and Left Anterior Descending Artery. See illustration.

When these arteries are blocked or severely restricted, a heart attack may result. Most heart attacks are caused when arterial plaque becomes inflamed and it tears open in the inner lining of the artery. The body responds by blood clotting just like it does when one has a cut on the skin. Inside the coronary arteries, the clotting helps to heal the tear caused by the inflamed plaque, but it also usually blocks the entire artery thus cutting off the blood supply to the heart muscles.



The Calcium CT Scan Continued

Why This Test Looks for Calcium:

For most people (not all) and for reasons not totally understood, our bodies deposit calcium on and around arterial plaque. The calcium builds over time and these deposits can be viewed and measured by a CT Scan. Since the heart is always moving the CT Scan is used which takes multiple and quick images as opposed to a single XRay image.



Image credit: <https://www.cedars-sinai.org/programs/imaging-center/exams/ct-scans/coronary-calcium.html>

EBCT Calcium Score	Plaque Burden	Probability of Significant CAD
0	No identifiable plaque burden	Very low (generally <5% likelihood)
0-10	Minimal identifiable plaque burden	Very unlikely (generally <10% likelihood)
11-100	Definite (at least mild)	Mild or minimal coronary stenoses likely
101-400	Definite (at least moderate atherosclerotic plaque burden)	Nonobstructive CAD highly likely, although obstructive disease possible
>400	Extensive	High likelihood (>90%) of at least one "significant" coronary stenosis

<https://patents.google.com/patent/WO2005027832A2/en>

End Result:

When the test is completed the patient is given a score that indicates the amount of calcium and the corresponding amount of plaque in the arteries. Some CT Scan testing facilities will also provide a time frame estimating the risk of having a heart attack in the future.

Final Notes:

While most will have calcium deposits in the presence of arterial plaque, some people do not. This is why the David A Baum Foundation recommends two screenings. The other being the Carotid Intima-Media Thickness (CIMT) ultrasound scan of your Carotid Arteries. If plaque is found in your Carotid Arteries, you probably have plaque in your Coronary Arteries even though you may have a zero calcium score.

Second, if you have a CT Scan score greater than zero, talk to a specialist focused in preventing and reversing Artery Disease such as Doctors trained in the Bale Doneen methods of prevention. Visit BaleDoneen.com or contact the David A Baum Foundation for guidance.

The Carotid Intima-Media Thickness Scan (CIMT)

About:

The CIMT is an ultrasound scan of your right and left Carotid Arteries supplying blood to the brain. Arteries have an inner and outer surface and the connective tissue in between the two layers that is referred to as the Intima-Media which is where plaque accumulates. The scan looks for stenosis or a restriction in the arteries caused by fatty plaque buildup inside the arteries.

What It Means:

Generally, if you have plaque in your carotid arteries, you also will have similar plaque in your Coronary arteries. With the Carotid arteries being closer to the surface of the skin, the ultrasound can provide detailed pictures of stenosis unlike the Calcium CT Scan which provides detailed pictures of calcium buildup but not of the plaque the calcium surrounds. The DABF encourages both of these scans as both are non-invasive, relatively inexpensive, and take about 15 minutes.

End Result:

The results of the scan will be provided to your ordering doctor, and with both scans you and your doctor can decide on further treatment.

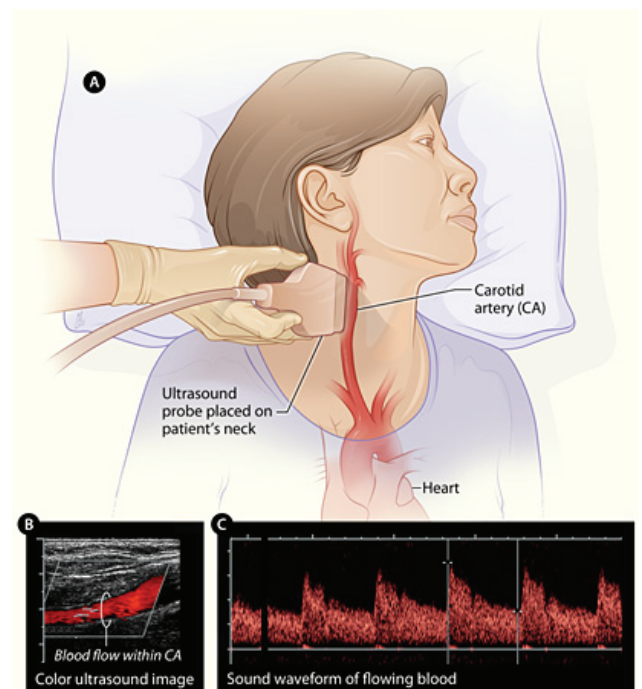


Image credit: <http://bradentonheartcenter.com/carotid-ultrasound/>

Final Notes:

Ultrasound technology has vastly improved in recent years and these machines provide very clear pictures of the Carotids plus take detail measurements of stenosis as well as track plaque accumulation. Unfortunately, some hospitals and doctors have 20 to 30 year old ultrasound machines that lack these improvements. Find a provider with the latest technology and one that is focused in prevention of vascular disease.