

Coronary Artery Calcium Scoring (CACS)

WHAT IS CORONARY ARTERY CALCIUM SCORING?

Coronary Artery Calcium Scoring (also called 'Heartcheck') is a new test in the fight against New Zealand's number one killer - heart disease. In less than 20 minutes we can calculate a score that indicates how likely you are to have symptoms of Coronary Artery Disease.

Coronary Artery Calcium Scoring (CACS) is a relatively new method to image the coronary arteries to look for signs of Coronary Artery Disease (CAD) due to the buildup of calcium in fatty deposits (or atherosclerosis, also called plaques) in the coronary arteries.

This technique involves the use of a High-Speed Gated CT (Computerised Tomography) scanner. It does not require any medicines or x-ray dyes. 'Gated' refers to the ability of the CT scanner to take images in time with the heartbeat, so that there is no blurring of the image.

With a few breath holds, images can be taken of the coronary arteries. From the images the amount of calcium in your coronary arteries is measured, and a score (CAC Score) is calculated from the amount of calcium present. The calcium score is then compared to a reference range for the population of your age and gender, and gives a relative risk of developing symptoms of coronary artery disease compared to that of the rest of the population.

The Heartcheck scan doesn't replace coronary angiography. The two tests provide different types of information. Heartcheck screening more accurately determines who is at risk of developing symptoms of coronary artery disease. Coronary angiography is for detection of narrowing of the coronary arteries in a person who already has symptoms of possible coronary artery disease.

The Heartcheck scan can detect the development of plaque before symptoms occur. Plaque starts being deposited in the wall of the artery years before it narrows the artery to the point that symptoms develop. Detection of early coronary artery disease allows individuals to take modifying action before symptoms develop.

Only 60% of people with heart disease have the traditional risk factors for coronary artery disease. CAD is a disease of genetics and lifestyle. You cannot be completely reassured that you will not have heart disease just because your cholesterol is normal, you don't smoke, have a normal blood pressure and exercise regularly.

WHAT IS ARTEROSCLEROSIS?

Atherosclerosis is the build up of fatty deposits in the lining of the arteries. This causes narrowings of the arteries, eventually to the point that blood flow is reduced, and leads to symptoms of coronary artery disease such as chest pain and breathlessness. Sometimes a blood clot may form on a fatty deposit, and cause the artery to block suddenly. This causes a heart attack, severe angina or even death. A heart attack is the largest single cause of death for men and women. Over 30% of those suffering a heart attack will die suddenly without warning.

Atherosclerosis is treatable at any stage. The earlier the treatment is commenced the better. There are three objectives when managing atherosclerosis:

- to reduce the progression of the disease
- to stop the formation of new fatty plaques
- to encourage regression of non-calcified plaques.

Treatment involves intensive lifestyle modification with a healthy diet, exercise, weight loss if appropriate, drugs such as statins to reduce blood cholesterol levels, cessation of smoking, and reduction of blood pressure if required.

Coronary Artery Calcium Scoring (CACs) **CONTINUED**

WHO SHOULD HAVE THIS TEST?

The test is best suited to males aged 40-70, and females aged 50-70. Your doctor can assess your cardiac risk to some extent using tables from the National Heart Foundation. If you are at high risk on the NHF table, then the Heartcheck result will not change this and you probably will not benefit from having it done. If you are at intermediate risk on the NHF tables, then the Heartcheck test is very useful at determining whether you should take aggressive preventative action or whether you can be reassured, and is strongly recommended. If you are at low risk on the NHF tables, then the Heartcheck test result is usually the same and may not benefit you.

However, there are exceptions to these general rules. For example, even if you appear to be at low risk on the NHF tables, if you have a close relative who develops cardiovascular disease (heart attack, stroke etc), then you may be at much higher risk than the NHF tables suggest, and a Heartcheck scan can confirm this and allow you to adopt preventative measures. Those who are at high risk on the NHF tables who are having trouble with side-effects of statin medication may find that a Heartcheck scan indicates they are at lower risk than previously thought, allowing them to stop taking medication unlikely to be of any benefit, or alternatively it may confirm that statin therapy is really necessary and should be continued if at all possible.

If you already have cardiovascular disease such as angina, or have suffered a heart attack or stroke, then by definition you are at relatively high risk of disease, and the Heartcheck scan is not appropriate for you.

HOW OFTEN SHOULD I HAVE THIS TEST DONE?

As you get older your risk of developing cardiovascular disease changes, and you can develop high blood pressure and increased blood cholesterol levels. Therefore, even if your Heartcheck scan result shows you to be at low risk, it is worth repeating the scan in 5 years time.

HOW MUCH DOES IT COST?

Your GP can refer you for a Heartcheck scan. However, because it is a screening test, it may not be covered by your health insurer. Please check our website for the current price: www.ascotrad.co.nz/Our-Services

BEFORE THE PROCEDURE:

- You must have a doctor's referral to take this test. We do require some clinical details, for example your cholesterol levels, to ensure that we can interpret the scan most effectively.
- There is no special preparation and any other instructions will be given to you when you make your appointment.

DURING THE PROCEDURE:

- First you'll be asked to fill out a brief questionnaire that incorporates information supplied by your doctor.
- You will then be asked to lie in the CT scanner for the scan. ECG leads will be attached to your shoulders and stomach so the images can be timed with your heart beat.
- You will be asked to hold your breath for only a few seconds. There is no need for medication of any sort, and you cannot feel the images being taken.

AFTER THE PROCEDURE:

- A report will be given to your doctor. Your doctor will then recommend any follow-up treatment or action required.

Coronary Artery Calcium Scoring (Heartcheck) scans are done at our Ascot Hospital site.