



# Coronary artery calcium scoring in people without symptoms

## Information for patients

### Is this information for you?

This information is for you if you are:

- considering having coronary artery calcium (CAC) scoring and you do not have any symptoms of cardiovascular disease.

### About CAC scoring

Blood vessels in your body supply blood to your heart so that the heart can work. Over your lifetime, these blood vessels might harden and narrow for a number of reasons, and this may affect the flow of blood to your heart. If the flow of blood is blocked to your heart, this causes a heart attack, which is a serious emergency.

CAC screening is a type of computed tomography (CT) scan that specifically measures the calcium in your blood vessels.<sup>1,2</sup> The test is also known as a 'CAC score' or 'coronary calcium scan'. If your doctor believes that other methods of estimating your risk of heart attack are inappropriate or inconclusive, the scan may be used to indicate your risk of heart attack.<sup>2</sup> Depending on the results, you could be advised to take long-term medication to lower your cholesterol and/or blood pressure in order to lower your risk of a heart attack.

### Why GPs do not routinely recommend having a CAC score

General practitioners (GPs) use other measures to estimate your risk of having a heart attack because these other measures are effective and potentially less harmful than CAC scoring.

To work out the best approach for you, your GP will ask you your age, if you smoke and if you have a family history of cardiovascular disease, and may ask you about what you eat and how often you exercise. They will also measure your blood pressure, and might ask you to take a blood test to measure your cholesterol levels.

All of this information will help your GP identify your risk of cardiovascular disease, and a CAC score will not change what your GP does or what you need to do.

If, after collecting all of this information, it is still unclear if you are at risk or not, your GP might order a CAC score, and might consider medication for you depending on the result.<sup>2</sup>



A CAC score also has a number of potential harms. These include:

- potential increase in risk of cancer<sup>2,3</sup> due to the radiation used
- a false sense of security because a good CAC score is not a guarantee that you will never have cardiovascular issues in your lifetime
- discovery of an 'abnormality' in your chest – in most cases, this abnormality will not be serious, but once you know about it, you might worry unnecessarily, and it might lead to further tests that would otherwise not be needed<sup>2,3</sup>
- financial cost<sup>2,3</sup> (which can vary between providers and may or may not be covered by private health insurance)
- costs and inconvenience associated with lost time (making and travelling to an appointment, taking time off work).

## Common questions about CAC scores

### **I have no particular risk factors for a heart attack, but can I have the test anyway just to be sure?**

Because of the potential harms in having the test, it should only be done if the results will help you and your GP make a decision about whether you need to take long-term medication to lower your cholesterol or blood pressure.<sup>2</sup>

If you are concerned about your cholesterol or blood pressure, talk to your GP about your concerns.

To keep your risk low, eat plenty of vegetables and some fruit, exercise regularly and, if you smoke, quit smoking.<sup>4,5</sup>

### **I have been having some chest pains and/or unusual shortness of breath. Should I have the test to see if my heart is okay?**

**If you have are experiencing chest pains or unusual shortness of breath, talk to your GP as soon as possible.**

Your GP will examine you and ask:

- how the pain feels (eg is it a burning sensation, a sharp sensation, does it stay, or does it come and go?)
- when you normally experience the pain and/or shortness of breath (eg do you experience the pain while resting or during exercise, or when you are feeling anxious or worried?)
- how long the pain and/or shortness of breath lasts for.

Based on your answers, your GP will talk to you about the best way of identifying any health issues you might have, and how to manage your symptoms. Sometimes a test is needed to determine if there are any serious health issues, but the CAC score is not the most appropriate test for these symptoms.

### **If I have been advised to take cholesterol and blood pressure medicine because of my risk of heart attack, do I need a CAC score?**

No, you do not need a CAC score because the results of the CAC score will not change your treatment.<sup>2</sup> Regardless of the result, you will still need to continue taking your medication, eating well and exercising.

### **If I have had a CAC score, when should it be repeated?**

Your CAC levels change very slowly over time, so there is no point in repeating the test in less than two to five years, depending on your level of overall risk and any changes to other factors.<sup>2,3</sup>

## Alternatives to having a CAC scan

- Whether you have a high or low risk of heart attack, eat plenty of vegetables and some fruit, limit your alcohol consumption to the recommended level, and exercise regularly.<sup>4,5</sup>
- If you are a smoker, quit smoking.<sup>6</sup> Ask your GP about quitting, how they can help you, and the benefits of quitting.
- If you are taking cholesterol and blood pressure medication, continue to take the medication as prescribed.
- If you have been experiencing chest pain, visit your GP.
- If you experience severe chest pain, call an ambulance (000).

## More information

National Heart Foundation of Australia, [Keeping your heart healthy](#)

National Heart Foundation of Australia, [What is a heart attack?](#)

## If you still want to go ahead

Talk to your GP about the risks and benefits of a CAC score, so that you can make an informed decision.

Tell your doctor if you are pregnant or planning a pregnancy.

Be aware that you will have to pay an out-of-pocket cost, as this test is not covered under Medicare.<sup>2,3</sup>

On the day of the test, do not smoke and do not drink caffeine before your test. Because smoking and caffeine can increase your heart rate, your heart rate might be too fast for you to take the test that day, or you might need to take medication (which can have side effects) to slow down your heart rate so that you can take the test.

Discuss the results with your GP, so you understand what they mean and what you now need to do.

## References

1. National Heart Foundation of Australia. Coronary artery calcium scoring. Canberra: Heart Foundation, [date unknown]. Available at [www.heartfoundation.org.au/bundles/your-heart/medical-tests-coronary-artery-calcium-score](http://www.heartfoundation.org.au/bundles/your-heart/medical-tests-coronary-artery-calcium-score) [Accessed 27 February 2023].
2. Australian Chronic Disease Prevention Alliance. Australian guideline and calculator for assessing and managing cardiovascular disease risk. South Melbourne, Vic: ACDPA, 2023. Available at [www.cvdcheck.org.au](http://www.cvdcheck.org.au) [Accessed 9 August 2023].
3. Chua A, Blankstein R, Ko B. Coronary artery calcium in primary prevention. Aust J Gen Pract 2020;49(8):464–69. Available at [www1.racgp.org.au/ajgp/2020/august/coronary-artery-calcium-in-primary-prevention](http://www1.racgp.org.au/ajgp/2020/august/coronary-artery-calcium-in-primary-prevention) [Accessed 3 August 2023].
4. The Royal Australian College of General Practitioners. Guidelines for preventive activities in general practice. 9th edn, updated. East Melbourne, Vic: RACGP, 2018.
5. National Aboriginal Community Controlled Health Organisation and The Royal Australian College of General Practitioners. National guide to a preventive health assessment for Aboriginal and Torres Strait Islander people. 3rd edn. East Melbourne, Vic: RACGP, 2018.
6. The Royal Australian College of General Practitioners. Supporting smoking cessation: A guide for health professionals. 2nd edn. East Melbourne, Vic: RACGP, 2019.