



## **CORONARY ARTERY CALCIUM SCORING: NEW RECOMMENDATIONS**

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THE National Heart Foundation has cautiously endorsed the use of coronary artery calcium (CAC) scoring for the assessment of cardiovascular risk in certain populations and under certain conditions, according to a position statement published today by the *Medical Journal of Australia*.

CAC scoring measures the amount of calcium in the coronary arteries from a computed tomography (CT) scan of the heart. A positive CAC score, measured in Agatston units (AU), is a marker of atherosclerosis, with increasing CAC scores correlating to increasing risk of cardiovascular disease (CVD) events and a CAC score of 0 AU indicating an absence of CAC and a low risk of CVD events.

"Evidence for the ability of CAC scoring to improve the predictive performance of traditional risk assessment models, and for the ability of CAC-guided management to reduce CVD morbidity and mortality, is evolving," wrote the authors of the position statement, led by Professor Garry Jennings, Chief Medical Advisor of the National Heart Foundation of Australia.

The Heart Foundation made the following four recommendations:

- CAC scoring could be considered for selected people with moderate absolute cardiovascular risk, as assessed by the National Vascular Disease Prevention Alliance (NVDPA) absolute cardiovascular risk algorithm, and for whom the findings are likely to influence the intensity of risk management. (*GRADE evidence certainty: Low. GRADE recommendation strength: Conditional.*)
- CAC scoring could be considered for selected people with low absolute cardiovascular risk, as assessed by the NVDPA absolute cardiovascular risk algorithm, and who have additional risk-enhancing factors that may result in the underestimation of risk. (*GRADE evidence certainty: Low. GRADE recommendation strength: Conditional.*)
- If CAC scoring is undertaken, a CAC score of 0 AU could reclassify a person to a low absolute cardiovascular risk status, with subsequent management to be informed by patient-clinician discussion and follow contemporary recommendations for low absolute cardiovascular risk. (*GRADE evidence certainty: Very low. GRADE recommendation strength: Conditional.*)
- If CAC scoring is undertaken, a CAC score > 99 AU or ≥ 75th percentile for age and sex could reclassify a person to a high absolute cardiovascular risk status, with subsequent management to be informed by patient-clinician discussion and follow contemporary recommendations for high absolute cardiovascular risk. (*GRADE evidence certainty: Very low. GRADE recommendation strength: Conditional.*)

"The National Heart Foundation of Australia acknowledges that the limited availability of Australian published literature affects the certainty of the evidence for the role of CAC scoring in the Australian setting," Jennings and colleagues wrote.

"However, we recognise the need for practical guidance for the use of CAC scoring, and thus these conditional recommendations with expert consensus are based on the Australian and international evidence available at the time.

"CAC scoring can have a role in the reclassification of absolute CVD risk for selected, asymptomatic patients in Australia, in conjunction with traditional absolute CVD risk assessment and as part of a shared decision-making approach that considers the preferences and values of individual patients.



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"This is a rapidly evolving area with emerging evidence, improved equipment limiting radiation exposure, and reducing out-of-pocket costs to consumers in the absence of public reimbursement.

"While historically there have been many challenges associated with clinical trials for the use of CAC scoring, the results of novel clinical trials currently underway will likely have an impact on the certainty of evidence for CAC scoring," Jennings and colleagues wrote.

"Lastly, we note that the recommendations presented in this article may change with forthcoming updates to the 2012 NVDPA absolute cardiovascular risk guidelines."

Jennings and colleagues concluded that:

"The Heart Foundation's position is that CAC scoring can have a role in reclassification of absolute cardiovascular risk for selected patients in Australia, in conjunction with traditional absolute risk assessment and as part of a shared decision-making approach that considers the preferences and values of individual patients.

"We call for more research to define the role of CAC-guided risk assessment and management in the Australian population."

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