

Information Snapshot – Dr Richard Alcock

Testing Hearts - Coronary artery disease (CAD)

Which tests and when?

Key Learning Outcomes

- Describe the assessment of someone with CAD
- Identify the differing cardiac tests-what they do, when to order them and what information they provide
- Outline care path and follow up for patients with CAD after initial assessment and treatment

Coronary artery disease (CAD)

Coronary artery disease (CAD) and its consequences (including myocardial infarction, cardiac arrest and heart failure) are the leading causes of death in Australia.¹ Acute coronary syndrome (ACS) is a spectrum of disorders all caused by CAD, ranging from unstable angina to acute myocardial infarction and sudden cardiac death. Treatment options for ACS have improved significantly. Although a significant proportion of patients are managed with medical therapy alone, many undergo revascularisation with percutaneous coronary intervention (PCI) or coronary artery bypass graft surgery and can achieve good long-term survival.

As short-term survival after an ACS has improved, the importance of secondary prevention therapy to prevent long-term morbidity, hospital readmissions and mortality has increased significantly. There is good evidence to show that patients who engage in secondary prevention therapies (both pharmacological and lifestyle based) have significantly lower rates of cardiovascular events in the first year after an ACS.² Morbidity and repeat cardiovascular events after an ACS also place a significant economic and resource burden on the healthcare system. Secondary prevention therapy must be instituted before patients are discharged from hospital after presentation with an ACS. However, GPs have a key role in ensuring ongoing adherence to prescribed cardio-protective medications, risk factor optimisation and adoption of healthy lifestyle behaviours

<https://medicinetoday.com.au/2017/august/feature-article/secondary-prevention-after-acute-coronary-syndromes-gp-role>

Troponin testing, ECG and a chest x-ray

Patients presenting with persisting or unstable symptoms that are potentially acute coronary symptoms should be referred urgently to hospital for troponin testing, ECG and a chest x-ray to investigate for possible myocardial ischaemia. Further investigations will depend on clinical signs and symptoms. Routine troponin testing in the community setting is not recommended. The introduction of a high-sensitivity cardiac troponin assay allows better detection of myocardial ischaemia with sex-specific cut-offs with greater specificity.³⁰ Clinical features supporting a likely diagnosis of an acute coronary syndrome include ECG changes, troponin elevation or ongoing symptoms suggestive of ischaemia. In these cases, inpatient investigations with invasive coronary angiography are usually appropriate.

Treadmill Testing

In the absence of ongoing symptoms and objective markers of ischaemia, patients may be referred for outpatient testing. Treadmill exercise testing is a universally available and non-invasive test that provides useful information regarding inducible ischaemia and functional capacity and is a useful prognostic indicator for cardiovascular morbidity and mortality.³⁰ Women have a higher rate of false-positive results on treadmill stress testing (up to 40% false-positive rate) than men.³¹ False-positive results may lead to significant psychological stress and invasive assessments. The specificity of treadmill stress testing is increased by concurrent echocardiography.

Stress Imaging

Stress imaging can be used when the baseline ECG is abnormal (i.e. left bundle branch block or left ventricular hypertrophy). It involves either stress echocardiography (exercise or dobutamine) or nuclear thallium testing. Chemical provocation is particularly useful in individuals with compromised mobility or exercise capacity, providing there are no contraindications.

CT Coronary Angiography

CT coronary angiography is emerging as a more widely acceptable alternative to functional testing. It may be of particular use in younger patients and women, because of its greater sensitivity compared with stress imaging and the high false-positive result rate with treadmill stress testing.³²⁻³⁴ CT coronary angiography also provides valuable information on coronary artery plaque burden and the calcium score that can guide medical therapy decision making.

<https://medicinetoday.com.au/2020/january/feature-article/closing-gap-women-coronary-artery-disease?class%5B0%5D=page-link&page=4>

Dr Richard Alcock



Stellar Cardiology

Hollywood Consulting Centre
Suite 22, 85 Monash Avenue
Nedlands WA 6009

P 08 6183 1836

M 0413 484 576

E admin@stellarcardiology.com.au

Healthlink ID: stellarc

Special Interests

- Interventional Cardiology
- Complex coronary procedures
- General Cardiology
- Cyclist / athlete health

Dr Richard Alcock offers consultative services for both general and interventional cardiology. He has experience in all aspects of adult cardiology with extensive training in interventional and complex coronary procedures. Dr Alcock aims to ensure that all cardiology patients are seen in a timely manner, and are provided with appropriate investigations and treatment advice. Richard completed his medical training at the University of Sydney with Honours. This was following an undergraduate Physiotherapy degree and working for several years as a physiotherapist. After his formal cardiology training in Sydney he completed his research degree in heart disease during non-cardiac surgery. Following this, he undertook two interventional cardiology fellowships; the first for two years in Sydney followed by a further two years at the Edinburgh Heart Centre, Scotland. He obtained his Fellowship of the Royal Australian College of Physicians in 2012. He currently holds the position of Consultant Cardiologist at Royal Perth Hospital, where he is active in both clinical research, as well as ongoing training of trainees in the coronary procedural lab. At Royal Perth Hospital, he is the clinical lead of the Complex Coronary Program, Director of the Coronary Catheterisation Lab, and the Director of the Interventional Fellowship program.

Hollywood Private Hospital
Monash Avenue, NEDLANDS WA 6009
T (08) 9346 6000

People caring for people.

hollywoodprivate.com.au


**Hollywood
Private Hospital**
Part of Ramsay Health Care