

# Reducing risk in heart disease

An expert guide to clinical practice for secondary prevention of coronary heart disease

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# Notes

- This guide was developed using a collaborative approach involving an assessment of Australian and international evidence-based clinical guidelines, scientific articles, expert consultation and available clinical data.\*
- This guide provides a general framework for appropriate management of patients with existing coronary heart disease (CHD). It should be followed subject to the health professional's judgement in each individual case, within the context of the goals of treatment. All treatments should be personalised according to the patient's prognosis, comorbidities, drug tolerance, lifestyle/living circumstances and wishes.
- This guide can be used by health professionals across the continuum of CHD care, including in acute settings, general practice, primary care, cardiac rehabilitation, and community and allied health services.
- General practitioners (GP) can use Chronic Disease Management (CDM) Medicare items to access rebates for planning and coordinating the management of patients with chronic diseases, including CHD. Medicare rebates also exist for services provided by other health professionals.
- For all medicines, be aware of barriers to adherence (such as cost) and usual contraindications; be mindful of the potential for significant and possibly adverse drug interactions and allergies; and carefully monitor and review patients regularly. Consider involving community pharmacy to help monitor medicines use.
- Where drug therapy is recommended for indefinite use, these recommendations have been based on the extrapolated findings of clinical trials, which are, by their nature, of limited duration.
- Patients who have had an acute coronary event are often initially prescribed low doses of medicines, such as beta-blockers, ACE inhibitors and statins, while they are still in hospital. In the majority of cases, we recommend the dose of each medicine is increased to the appropriate target dose as required and tolerated.
- Behaviour change is challenging. Any progress towards reaching ideal risk factor 'goals' and 'targets' will be beneficial for patients with CHD. Reducing or removing risk factors should be considered as a 'total package'. For example, treating dyslipidaemia, hypertension and diabetes should not divert attention from addressing smoking cessation. Tailor messages to the needs of patients of different ethnocultural groups and literacy levels.
- Diabetes, renal impairment and non-CHD manifestations of atherosclerosis, such as cerebrovascular or peripheral vascular disease, indicate high risk for coronary events. Patients with CHD should be screened for these conditions and managed appropriately.
- It is important to monitor and support patients' adherence to lifestyle advice and medicines on an ongoing basis. Where appropriate, consider using ancillary measures (e.g. special clinics, behaviour change support). Clear and consistent communication across care settings is vital.
- Encourage close relatives of patients with premature heart disease (men < 55 years, women < 65 years) to have an absolute cardiovascular disease risk assessment with their GP and be assessed for familial hypercholesterolaemia.<sup>1</sup>
- Recommendations are not necessarily congruent with current Pharmaceutical Benefits Scheme (PBS) criteria for eligibility for subsidy in all areas.

\* Based on an assessment of literature until August 2011. As evidence in this field is evolving rapidly, updates may be available at [www.heartfoundation.org.au](http://www.heartfoundation.org.au).

# Lifestyle/behavioural risk factors and management

- Establish goals appropriate for the patient's readiness to change in accordance with their risk factor profile.
- Where indicated, refer the patient to the Heart Foundation's Health Information Service (telephone 1300 36 27 87), allied health professionals (e.g. dietitian, psychologist) and cardiac rehabilitation/secondary prevention programs.
- The SNAP ([www.racgp.org.au/guidelines/snap](http://www.racgp.org.au/guidelines/snap)) and Lifescripts ([www.health.gov.au/lifescrpts](http://www.health.gov.au/lifescrpts)) programs can be used to help patients achieve and sustain lifestyle changes. Local or population-specific programs may also be available.

## Smoking

### Goal

Patients with CHD completely stop smoking and avoid second-hand smoke.

- Quitting smoking has major and immediate health benefits for all smokers.
- Take a detailed smoking history and choose smoking cessation therapy according to personal circumstances and preferences.
- Strongly and repeatedly encourage the patient and their family to stop smoking. Brief, repeated, non-judgmental advice about quitting smoking, provided by health professionals, is effective.<sup>2,3</sup> However, multiple attempts to quit may be required.
- Refer the patient and their family to Quitline (13 QUIT). Also consider referring them to a specialised smoking cessation program.
- Nicotine replacement therapy (NRT) can be used safely in smokers with stable cardiovascular disease (CVD), but should be used with caution within two weeks of a myocardial infarction (MI) and in patients with unstable angina, severe arrhythmias or a recent cerebrovascular event.<sup>2</sup>
- In all patients who continue to smoke, pharmacotherapy should be offered.<sup>4</sup>
- If pharmacotherapy is used, aim to combine it with behavioural and psychosocial support.<sup>5</sup>

## Nutrition

### Goals

Patients with CHD establish and maintain healthy eating. This includes:

- limiting saturated fatty acid (SFA) intake to < 7% and trans fatty acid (tFA) intake to < 1% of total energy intake.<sup>6</sup>
  - consuming 1 g eicosapentaenoic acid (EPA) + docosahexaenoic acid (DHA) and > 2 g alpha linolenic acid (ALA) daily
  - limiting salt intake to  $\leq$  4 g/day (1550 mg sodium).
- Encourage patients with CHD to adopt a healthy eating pattern that includes:
    - mainly plant-based foods (e.g. fruits, vegetables, pulses and a wide selection of wholegrain foods)
    - moderate amounts of reduced, low or no fat dairy products
    - moderate amounts of lean unprocessed meats, poultry and fish
    - moderate amounts of polyunsaturated and monounsaturated fats (e.g. olive oil, canola oil, reduced salt margarines).<sup>4</sup>

- Encourage patients to replace SFA with monounsaturated fatty acids and polyunsaturated fatty acids.<sup>6</sup>
- Advise patients to consume 2–3 g of phytosterols per day from margarine, breakfast cereal, reduced fat yoghurt or reduced fat milk enriched with phytosterols (approximately 2–3 serves per day of these enriched foods).<sup>6</sup>
- Advise patients to consume 1 g of combined EPA and DHA per day through a combination of oily fish (2–3 150 g serves per week), fish oil capsules or liquid, and food and drinks enriched with marine n-3 polyunsaturated fatty acids (PUFA).<sup>6</sup>
- Advise patients to consume > 2 g ALA per day by including canola- or soybean-based oils and margarine spreads, seeds (especially linseeds), nuts (particularly walnuts), legumes (including soybeans), eggs and green leafy vegetables.<sup>6</sup>
- Advise patients to reduce their salt intake by:
  - choosing foods processed without salt; foods labelled ‘no added salt’ or ‘low salt’; or foods labelled ‘reduced salt’ when other options are unavailable
  - avoiding high salt processed foods, salty snacks, high salt take-away foods, and adding salt during cooking or at the table.<sup>4</sup>
- Consider referring the patient to a dietitian for support with dietary changes.

## Alcohol

### Goal

Patients with CHD consume a low-risk amount of alcohol.

- Assess the patient’s medicines for potential interactions with alcohol and advise them as appropriate.
- Advise patients to drink no more than two standard drinks per day.<sup>7</sup>
- Women with high blood pressure or who are taking blood pressure medicine should drink no more than one standard drink per day.<sup>4</sup>
- We do not recommend that patients who don’t drink start drinking, or that patients who drink increase their alcohol intake.
- Brief interventions (e.g. advice, counselling) from a GP can be effective for non-dependent drinkers, particularly men. If a person is alcohol dependent, withdrawal may be complicated. Consider referring the patient to clinics/agencies with expertise in addiction.<sup>8</sup>

## Physical activity

### Goal

Patients with CHD do at least 30 minutes of moderate-intensity<sup>†</sup> physical activity on most, if not all, days of the week (i.e. 150 minutes/week minimum). This amount can be accumulated in shorter bouts of 10 minutes’ duration and can be built up over time.

For patients with advanced CHD, the goal amount of physical activity may need to be reduced.

Any progress towards reaching the recommended goal is beneficial.

- Assess the patient’s physical activity habits, together with the severity of disease and comorbidities. Conditions that need physical activity to be deferred or clinical assessment undertaken include unstable angina, uncontrolled or severe hypertension, severe aortic stenosis, uncontrolled diabetes, complicated acute MI, uncontrolled heart failure, symptomatic hypotension, resting tachycardia or arrhythmias.<sup>9</sup>

<sup>†</sup> Moderate-intensity physical activity causes a moderate, noticeable increase in depth and rate of breathing, while still leaving you able to talk comfortably. Examples include brisk walking on level firm ground, swimming, water exercise and cycling for pleasure or transport.

- Discuss physical activity needs/capabilities/barriers and encourage the patient to be active. Give the patient written guidelines for everyday physical activity tasks, including a light-to-moderate intensity walking program or equivalent. Discuss these guidelines with the patient.
- Advise the patient to start with low-intensity physical activity and gradually increase duration over several weeks. Gradually increase the intensity and variety of activities towards achieving specific goals. Note: it is not generally recommended that patients with CHD do vigorous physical activity.
- Incidental physical activity is also important to keep patients moving as often, and in as many ways, as possible. Encourage patients to sit less and move more throughout the day.
- Refer patients to a cardiac rehabilitation program and/or an exercise physiologist where appropriate and available.
- A structured rehabilitative physical activity program, supervised by qualified fitness personnel, should be considered. Examples include the Heart Foundation's Heartmoves program or Heart Foundation Walking groups. The Heart Foundation's Health Information Service can also give you and your patients more details; call 1300 36 27 87 or visit [www.heartfoundation.org.au](http://www.heartfoundation.org.au).
- Regularly review the patient's response to the physical activity regimen.

## Healthy weight

### Goals<sup>‡</sup>

Waist measurement:

- men < 94 cm
- women < 80 cm

Body mass index (BMI) range 18.5–24.9 kg/m<sup>2</sup>

- Assess and continue to monitor waist circumference and BMI.
- $BMI = \text{weight (kg)} / \text{height (m)}^2$ .
- A BMI of < 25 kg/m<sup>2</sup> may be unachievable for some patients. Focus on small realistic improvements. Weight loss of 5–10% of the patient's original weight can lead to improvements in cardiovascular and metabolic health.<sup>10</sup>
- When recommending weight loss, give patients advice on how to reduce their kilojoule intake as well as increasing their physical activity level. To lose weight, most patients will need to do more physical activity than the 30 minutes of moderate-intensity physical activity per day recommended for health benefits.<sup>4</sup>
- Some patients with stable CHD and a BMI > 35kg/m<sup>2</sup> may be eligible for bariatric surgery if non-surgical methods have been unsuccessful. Consider referring patients to obesity-metabolic services or bariatric surgeons and make sure they are given ongoing support.<sup>11</sup>

<sup>‡</sup> Goals based mainly on evidence of increased risk of death in European populations. They may not be appropriate for all age groups and ethnic groups.

# Biomedical risk factors/medical management

## Lipids

### Goals

- Low-density lipoprotein cholesterol (LDL-C) < 1.8 mmol/L<sup>§</sup>
  - High-density lipoprotein cholesterol (HDL-C) > 1.0 mmol/L
  - Triglyceride (TG) < 2.0 mmol/L
  - Non-high-density lipoprotein cholesterol (NHDL-C) < 2.5 mmol/L\*\*
- Give all patients with CHD healthy eating advice.
  - We recommend statin therapy for all patients with CHD (apart from in exceptional circumstances). For patients admitted to hospital, statin therapy should be started while they are in hospital.<sup>12</sup>
  - Make adherence to statins an ongoing discussion point with patients. Make sure patients understand that statins are an added benefit to improve their health, but do not replace making lifestyle changes.<sup>13</sup>
  - Muscle aches and pains are a common side effect in patients taking statins, but rhabdomyolysis is rare. If a patient reports symptoms of myalgia and has creatine kinase three times the upper limit of normal, monitor the patient closely and consider stopping statin therapy.
  - Fibrates effectively reduce cardiovascular risk in patients with type 2 diabetes, high TG or low HDL-C, and in patients who are overweight.<sup>12</sup>
  - You can prescribe a combination of statins and a fibrate, but with caution. To reduce risk of myopathy with concomitant therapy, use fenofibrate instead of gemfibrozil.<sup>12,14</sup>
  - Ezetimibe reduces the concentration of LDL-C by 15–20% as monotherapy, or when added to a statin. Long-term safety data is satisfactory.<sup>15</sup>
  - Advise patients with elevated TG to take fish oil capsules/liquid and marine n-3 PUFA enriched food and drink by starting with a dose of 1200 mg per day of EPA and DHA. If appropriate, titrate the dose up to 4000 mg per day of EPA and DHA.<sup>6</sup> Assess the patient's response every 3–6 weeks until target TG levels are reached.

## Blood pressure<sup>4</sup>

### Goal

Patients with CHD achieve and maintain a blood pressure (BP) measurement of < 130/80 mmHg. This includes patients with or without diabetes and/or stroke/transient ischemic attack (TIA) and/or microalbuminuria (men > 2.5 mg/mmol, women > 3.5 mg/mmol).

### Diagnosis of hypertension

- If systolic blood pressure (SBP)  $\geq$  140 mmHg or diastolic blood pressure (DBP)  $\geq$  90 mmHg on multiple measurements over several occasions, consider diagnosis of hypertension.
- If possible, obtain the patient's BP measurements when they are outside the clinic; for example, through ambulatory BP monitoring<sup>††</sup> or self-measurement. This is particularly useful for patients with unusual variation in readings, suspected 'white-coat hypertension' or resistance to drug treatment.

§ This target is for high-risk patients who have had a coronary event.

\*\* NHDL-C is calculated by subtracting HDL-C from total cholesterol (TC). It combines LDL-C, very low density lipoprotein cholesterol (VLDL-C), intermediate density lipoprotein (IDL-C) and lipoprotein (a) (LP(a)). The NHDL-C does not assume normal lipoprotein composition, does not require a fasting specimen, and may be a better indicator than LDL-C in patients with high TG (such as patients with diabetes).<sup>16</sup>

†† Ambulatory BP monitoring targets are: < 135/85 mmHg for daytime, < 120/75 mmHg for nighttime, and < 130/80 mmHg for 24 hours.<sup>17</sup>

- Clinically assess all risk factors, detect end-organ damage and related comorbid conditions, and identify causes of secondary hypertension.
- Consider referring the patient to a physician or specialist clinic if they have:
  - SBP  $\geq$  180 mmHg or DBP  $\geq$  110 mmHg
  - isolated systolic hypertension and widened pulse pressure (SBP > 160 mmHg and DBP < 70 mmHg)
  - suspected secondary hypertension
  - BP that is difficult to manage.

#### Urinary albumin

- Assess albuminuria in all patients with CHD by performing a urine albumin/creatinine ratio (ACR) on a spot urine specimen (preferably an early morning void). If ACR > 2.5 mg/mmol (men) or > 3.5 mg/mmol (women), repeat to confirm.

#### Management of hypertension

- Advise patients on weight management, physical activity, limiting alcohol intake to no more than two standard drinks per day (men), one standard drink per day (women), and maintaining a low salt diet (see Table 1). As appropriate, refer to relevant specialists (e.g. dietitian, exercise physiologist).
- Unless there are good reasons for an alternative choice, we recommend ACE inhibitors (ACEI) as first-line antihypertensives in patients with pre-existing CVD, including CHD, stroke and peripheral vascular disease, or in patients with diabetes and hypertension.
- In patients with diabetes and proteinuria, start treatment with either an ACEI or angiotensin II receptor antagonist (ARA) if ACEI-intolerant.
- Most patients need appropriate drug combinations to reach their BP goals. Combination therapy may also minimise adverse effects.
- Consider non-adherence with drug therapy as a cause of BP that is difficult to manage.

Table 1: Recommended lifestyle changes and potential impacts on BP\*

Modification	Recommendation	Approximate SBP reduction
Reduce weight	BMI < 25 kg/m <sup>2</sup> and waist circumference < 94 cm (men) or < 80 cm (women)	1 mmHg per 1% reduction in weight
Reduce salt intake	< 4 g/day of salt (approximately 1600 mg sodium)	4–5 mmHg
Increase physical activity	At least 30 mins physical activity most days of the week	4–9 mmHg
Modify diet	Consume a diet rich in fruits, vegetables, and low fat dairy products and low in saturated and total fat <sup>†</sup>	8–14 mmHg
Limit alcohol intake	$\leq$ 2 standard drinks per day	2–4 mmHg

\* The effects of multiple interventions are not cumulative. Reductions are averages based on the results of clinical studies, and effect size varies between individuals. For comparison, individual antihypertensive medicines may reduce BP by an average of 8 mmHg.

<sup>†</sup> Normal renal function only.

Note: Recommendations and approximate SBP reductions in this table are a guide for the general population and are not specific to patients with CHD.

Source: National Prescribing Service. Treating hypertension. Prescribing Practice Review: PPR 52. NSW: National Prescribing Service, 2010. Reproduced with permission from the National Prescribing Service.

# Diabetes

## Goals

Patients with previously undiagnosed type 2 diabetes are identified.

In patients with diabetes, aim to maintain optimal blood sugar level (BSL) ( $\text{HbA1c} \leq 7\%$ ), but be mindful of the potential harmful effects of optimising blood glucose control (particularly weight gain).<sup>18</sup>

## Definitions<sup>20,††</sup>

- Diabetes: fasting plasma glucose  $\geq 7$  mmol/L or 2-hour post-75 g oral glucose load  $\geq 11.1$  mmol/L.
- Impaired glucose tolerance: fasting plasma glucose  $< 7.0$  mmol/L and 2-hour post-glucose load  $\geq 7.8$  and  $< 11.1$  mmol/L.
- Impaired fasting glucose: fasting plasma glucose 6.1–6.9 mmol/L.

## Diagnosis<sup>20</sup>

- All patients with CHD should be screened for diabetes. Acute coronary syndromes (ACS) often unmask glucose intolerance or diabetes.
- We do not recommend using finger prick glucose testing to diagnose diabetes.
- Measure plasma glucose on a fasting venous sample. An accredited laboratory should do the analysis.
- For fasting plasma glucose levels 5.5–6.9 mmol/L (random 5.5–11.0 mmol/L), perform an oral glucose tolerance test.
- A definitive diagnosis of previously undiagnosed type 2 diabetes should not be made during an acute cardiovascular event. Results that suggest undiagnosed diabetes should be confirmed 2 months after the acute event.

## Management of type 2 diabetes

- No clear independent effect of improving blood glucose control on macrovascular complications (e.g. CHD, stroke, peripheral vascular disease) has been observed in patients with type 2 diabetes. However, blood glucose management should be optimised because it reduces the development or progression of microvascular complications (e.g. retinopathy, nephropathy, neuropathy).<sup>18</sup>
- Patients with newly diagnosed type 2 diabetes should be routinely offered a trial of lifestyle modification. However, pharmacotherapy may also be needed for patients with significant hyperglycaemia. Treatment should be intensified if diabetes management is not at target and becomes worse after 3–6 months of a specific treatment strategy, or sooner if there is significant hyperglycaemia.<sup>18</sup>
- Treatment of other risk factors, including dyslipidaemia, hypertension, overweight/obesity and smoking, is particularly important for patients with diabetes.
- In patients with diabetes with proteinuria, start treatment with either an ACEI or ARA if ACEI-intolerant.
- Thiazolidinediones, also known as glitazones, should be avoided in patients with heart failure.<sup>24</sup> There is insufficient evidence to confirm a risk for patients who have CHD who are using glitazones. They should be used with caution until further evidence is available.

†† HbA1c  $\geq 6.5\%$  is likely to be included as a diagnostic option for diabetes during the life of this guideline.<sup>19</sup>

# Pharmacological management

## Antiplatelet agents<sup>21</sup>

### For patients with CHD

- All patients with CHD should take 75–150 mg/day of aspirin unless contraindicated.
- Clopidogrel can be taken instead of aspirin when aspirin is contraindicated.
- Clopidogrel should be considered in combination with aspirin in patients who have recurrent cardiac ischaemic events.
- Clopidogrel use carries an increased risk of bleeding during surgery.

### For patients with ACS

- We recommend clopidogrel is used in combination with aspirin when considering the following:
  - Among patients with ST-elevation myocardial infarction (STEMI) undergoing fibrinolysis, clopidogrel should be commenced with a loading dose of 300 mg, then 75 mg/day for 12 months.
  - Among patients with STEMI undergoing coronary stenting, clopidogrel should be commenced with a loading dose of 600 mg and 75 mg twice daily for one week, then 75 mg/day for 12 months.
  - Among patients with non-ST elevation ACS undergoing coronary stenting, clopidogrel should be commenced with a loading dose of 600 mg and 75 mg twice daily for one week, then 75 mg/day for 12 months.
  - Among patients with non-ST elevation ACS managed non-invasively, clopidogrel should be commenced with a loading dose of 300 mg, then 75 mg/day for 12 months.
  - For patients with ACS who are undergoing stenting, prasugrel 10 mg/day can be used as an alternative to clopidogrel for 12 to 15 months. Avoid prescribing prasugrel in patients with an increased risk of bleeding; for example, patients with a history of stroke/TIA, low body weight (< 60 kg) and advanced age (> 75 years).
  - Ticagrelor can also be used as an alternative to clopidogrel for patients with ACS. It should be given as a 180 mg loading dose, then 90 mg twice daily thereafter. However, consider the patient's risk of bleeding.

## Anticoagulants

- We recommend using warfarin in patients who have had an MI who are at high risk of systemic thromboembolism because of atrial fibrillation, mural thrombus or previous embolisation. It may sometimes be combined with aspirin and/or clopidogrel, but in this circumstance patients should be closely observed for signs of bleeding. The need for warfarin should be reviewed after 3 months.
- A number of new anticoagulant therapies are becoming available for use in patients in whom warfarin is inappropriate.
- We recommend prescribing ACEIs for everyone with CHD, especially in patients at high risk of recurrent events, unless contraindicated. Start therapy early post-MI.<sup>23</sup>

## ACEIs/ARA

- Consider prescribing ARAs for patients who develop unacceptable side effects while taking ACEIs. Monitor renal function among patients taking these agents.

## Beta-blockers

- We recommend prescribing beta-blockers in all patients post-MI, especially in patients at high risk of recurrent events, unless contraindicated.<sup>23</sup>
- High-risk patients are defined as patients with either:
  - significant myocardial necrosis
  - left ventricular (LV) systolic dysfunction
  - persistent evidence of ischaemia
  - ventricular arrhythmia.

## Statins

- We recommend statin therapy for all patients with CHD (apart from in exceptional circumstances). For patients admitted to hospital, statin therapy should be started while they are in hospital (see *Lipids* section on page 7).<sup>12</sup>

## Aldosterone antagonists

- Eplerenone may be prescribed early (3–14 days) post-MI in patients with LV systolic dysfunction and symptoms of heart failure.<sup>23,24</sup>

## Short-acting nitrates

- All patients should be prescribed a short-acting nitrate, unless contraindicated, and provided with a written action plan for chest pain.<sup>21</sup>

# Other considerations of medical management

## Anti-arrhythmics<sup>25–27</sup>

- Due to the pro-arrhythmic effects of anti-arrhythmic agents, we do not recommend the routine use of anti-arrhythmic drugs in patients with ACS, especially in patients with depressed LV function.
- Urgently refer patients who have syncope or sustained ventricular tachyarrhythmia for specialist opinion.
- Atrial fibrillation is common after coronary artery bypass graft surgery and amiodarone is often used as a short-term treatment.

## Implantable cardiac defibrillators (ICD)

- ICD are the most effective means of preventing sudden cardiac death in patients who have had an MI that causes LV systolic dysfunction. Sudden death can occur many years after the MI, underscoring the importance of preventive strategies.
- Consider prophylactic ICD implantation in patients who, despite optimal medical therapy, have persistently depressed LV function (LV ejection fraction  $\leq 35\%$ ) after MI.<sup>24</sup> Early prophylactic ICD insertion (6–40 days after MI) is not beneficial.<sup>28</sup>
- To reduce the number of ICD discharges, amiodarone or sotalolol may be used for rate control.
- Despite being associated with reduced mortality, ICD may worsen quality of life for some patients. Make sure patients with ICD have ongoing support and management.
- Consider planning for ICD deactivation in patients with advanced symptoms of chronic heart failure (CHF).

## Calcium channel blockers

- Calcium channel blockers of the non-dihydropyridine group (e.g. diltiazem, verapamil) may be used as anti-anginal agents for patients in whom beta-blocker therapy is contraindicated, provided there is no evidence of CHF.<sup>24</sup>
- Controlled-release verapamil has been shown to reduce the incidence of cardiovascular events in patients with stable angina. It may decrease the risk of re-infarction and death after MI.<sup>29</sup>

## CHF<sup>24</sup>

### Goal

Patients progressing to CHF are diagnosed early and receive optimal management.

- Patients with known atherosclerotic disease (even without LV dysfunction) are at increased risk of developing CHF. Maintain a high index of suspicion in patients with previous MI or recognised CHD, diabetes, hypertension or atrial fibrillation.
- Patients with suspected CHF should undergo an electrocardiogram (ECG), chest X-ray and echocardiogram, even if the physical signs are normal.

## Influenza and pneumococcal vaccinations

- Everyone with CHD should receive pneumococcal and annual influenza vaccinations (unless contraindicated).<sup>30</sup>

## Oestrogens and progestins (or oestrogen alone in women who have had a hysterectomy)

- We do not recommend prescribing oestrogens and progestins for primary or secondary prevention of CHD. If hormone replacement therapy is prescribed for other conditions, consider the risks and benefits and discuss these with the patient.<sup>31</sup>

## Antioxidants (vitamin A, vitamin C, B-carotene, vitamin E)

- There is no evidence that combination antioxidant supplements help prevent CVD. There is concern that high doses (> 800 IU/day) of vitamin E supplements may increase the risk of CVD.<sup>32</sup>

## Alternative and over-the-counter medicines

- Use of complementary and alternative medicines (CAM) is common among patients with CHD (although specific use of CAM to treat cardiac conditions is uncommon).<sup>33</sup>
- When taking a medicines history, ask patients about CAM use for any condition, to reduce the risk of drug–CAM interactions or adverse effects.<sup>34</sup>

## Non-steroidal anti-inflammatory drugs (NSAIDs)

- Avoid prescribing NSAIDs (excluding aspirin), even for short-term use, for patients with a history of CHD, because of the increased risk of recurrent MI and death.<sup>35</sup>

# Initiating and sustaining behaviour change

Helping a patient to adapt their behaviour to optimise their health and wellbeing is challenging. Support patients to engage in behaviour change strategies, being mindful of individual physical, social, cultural and psychological factors.

Multiple attempts may be needed to achieve targets. Health professionals should respond positively to incremental success. Include care planning and review as part of this process.

## Secondary prevention/cardiac rehabilitation (SP/CR) programs

### Goal

Everyone with CHD has access, and is actively referred, to comprehensive ongoing risk factor modification and cardiac rehabilitation services.

The model of intervention is dependent on local resources and patient preferences.<sup>36</sup>

- Secondary prevention describes all measures used to help patients return to an active and satisfying life, and reduce their risk of further cardiovascular events. Contemporary cardiac rehabilitation and secondary prevention programs are cost-effective, safe and beneficial for patients of all ages. They improve survival rates, reduce the need for revascularisation procedures and reduce the need for hospitalisation.<sup>37</sup>
- During SP/CR, patients and their families/carers receive an individual assessment and a program including risk factor modification, purpose-designed exercises, health education and counselling, behaviour modification, and support for self-management.
- Programs are preferably run by a multidisciplinary team. They can be delivered in a variety of ways (e.g. group or one-on-one) and in a variety of settings (e.g. outpatient, general practice, home-based, telephone, web-based).
- Secondary prevention services must be integrated into the patient journey and not seen as extra options outside mainstream healthcare.<sup>36</sup>
- SP/CR should be provided in consultation with, and integrated into the ongoing care provided by, the patient's GP, practice nurse, cardiologist and other healthcare professionals.

## Warning signs of heart attack: action plan<sup>38,39</sup>

### Goal

Everyone with CHD is prescribed a short-acting nitrate, unless contraindicated, and given written information and an action plan to follow in the event they have warning signs of heart attack.

- Give everyone with CHD a 'Will you recognise your heart attack' action plan and fact sheet (available from the Heart Foundation website). A written action plan should include advice about:
  - rest and self-administration of short-acting nitrates
  - telling someone nearby about the symptoms
  - calling Triple Zero (000)<sup>§§</sup> for an ambulance if symptoms are severe, get worse quickly or last for 10 minutes.
- Educate patients about the broad range of warning symptoms that may be experienced including:
  - discomfort or pain in the centre of the chest
  - discomfort in the upper body (arm(s), shoulder(s), neck, jaw, back)
  - feeling short of breath, nauseous, dizzy or light-headed, or having a cold sweat.

§§ If calling Triple Zero (000) does not work on a mobile phone, try 112.

- Communicate the following key messages:
  - warning signs of a heart attack are varied
  - not everyone will experience chest pain
  - symptoms can come on suddenly, or come on slowly before getting worse
  - warning signs experienced in a future cardiac event may be different
  - patients with CHD are at higher risk of having a heart attack than people without CHD
  - early treatment is important to reduce heart muscle damage and save lives
  - it is vital for patients to act quickly and call Triple Zero (000) for an ambulance if they are experiencing warning signs, even if they are not sure whether they are having a heart attack.

## Psychosocial factors and assessment

### Psychological management<sup>40</sup>

#### Goals

All patients with CHD are assessed for comorbid depression using a validated tool and treated accordingly. Patients with depression receive appropriate psychological and medical management.

- Depression is approximately three times more common in patients after an MI than in the rest of the population.
- Prognosis is worse for patients with both CHD and major depression or elevated depressive symptoms, than in patients with CHD alone.
- Depression is also associated with decreased adherence to medicines and reduces the chances of successful modification of other risk factors and participation in cardiac rehabilitation.
- Counselling strategies (e.g. cognitive behavioural therapy, interpersonal psychotherapy) is effective in the management of depression.
- The selective serotonin reuptake inhibitor (SSRI) class of antidepressants is safe and effective in the management of depression in patients with comorbid CHD. (Note: there is a potential SSRI drug interaction with warfarin.)
- Avoid prescribing tricyclic antidepressants (TCA) to patients with CHD, due to their class III antiarrhythmic effect.
- Anxiety often coexists with depression, and should be assessed and managed accordingly.
- Aerobic exercise and cardiac rehabilitation can reduce depressive symptoms, in addition to improving cardiovascular fitness.
- Closely monitor patients with CHD who are being treated for depression for adherence to their medical and lifestyle interventions, drug efficacy and safety (with respect to cardiovascular and mental health). Coordination of care between healthcare professionals is essential for patients with combined medical and mental health diagnoses.

### Social support

#### Goal

Everyone with CHD is assessed for their level of social support.

- Social isolation and a lack of social support are significant risk factors for CHD.<sup>41</sup>
- Assess the patient's level of social support. Refer patients considered at risk to cardiac rehabilitation services and/or a social worker or psychologist.
- The Heart Foundation's Health Information Service (telephone 1300 36 27 87) has current contact details of local support groups, including Heart Support Australia and Heart Foundation Walking groups.

# More information

For more copies of this guide and an extensive range of other professional resources, please contact the Heart Foundation's Health Information Service on 1300 36 27 87 (local call cost). The Heart Foundation also has a wide range of consumer information on healthy eating, physical activity, blood pressure, cholesterol, coronary heart disease and other topics.

Visit [www.heartfoundation.org.au](http://www.heartfoundation.org.au) for the complete range of Heart Foundation professional resources and guidelines, as well as heart health information for patients and the general public.

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## Methodology and conflicts of interest

Evidence-based recommendations are largely based on major Australian Clinical Practice Guidelines, as well as from results of recent clinical trials. Thus, the development of the current good-practice guide involved a process of partial adaptation of other guideline statements and reports and supplemental literature searches. The guide underwent a 30-day public consultation period during which time a total of 32 submissions and 200 individual comments were made. All submissions and comments were considered by the writing group in the final version of the guide.

Members of the writing group contributed equally to the production of this guide. An initial review of the previous guide was completed by the writing group, and regular teleconferences were held to discuss what changes should be made to the guide to align with the latest evidence. A consensus process was followed for changes made and each meeting was documented in minutes and draft guides. Key contributors were consulted as experts in their field where further clinical guidance or clarification was required.

All members of the writing group were asked to declare any conflicts of interest at the commencement of the project and at each teleconference. Professor Nigel Stocks received consultancy fees from AstraZeneca (ACCOUNT study) and Novartis (VIPER-BP study). No other conflicts of interest were declared by members of the writing group. The key contributors to this project were also asked to declare any conflicts of interest. These are available on request.

This guide will be reviewed regularly and modified when necessary to take into account new research, new technologies, and the results of evaluation of guideline outcomes.

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For heart health information  
1300 36 27 87  
[www.heartfoundation.org.au](http://www.heartfoundation.org.au)

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