Depression in patients with coronary heart disease (CHD): screening, referral and treatment

Screening, referral and treatment for depression in patients with CHD

A consensus statement from the National Heart Foundation of Australia

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- An update on evidence regarding depression in patients with CHD
- Provides guidance on screening and treatment for health professionals in acute and primary care

Depression as a risk factor for development of CHD

- A systematic review (2006) suggested that individuals with depression, but no current CHD, have a moderately **elevated risk of 1.6 for a later index CHD event.**[1]
- The Whitehall II study of 5,936 healthy individuals over a 6-year period showed depression was associated with **a hazard ratio of 1.93 for cardiovascular events.**[2]
- In the Nurses Health Study, depression was associated with increased all-cause mortality, with an **age-adjusted relative risk of 1.76.**[3]

References
1. Nicholson A, et al. Eur Heart J 2006; 27:2763–2774.
2. Nabi H, et al. Heart 2010; 96:1645–1650.
3. Pan A, et al. Arch Gen Psychiatry 2011; 68:42–50.

Prevalence of depression in patients with CHD

- Rates of major depressive disorder of around **15%** have been reported in patients after myocardial infarction (MI) or post coronary artery bypass grafts (CABG).[1,2]
- If milder forms of depression are included, a prevalence of **greater than 40%** has been documented.[1,2]

References
1. Thombs BD, et al. J Gen Intern Med 2006; 21:30–38.
2. Carney RM, et al. Biol Psychiatry 2003; 54:241–247.

Screening for depression in CHD

- Due to the high prevalence, routine screening for depression in all patients with CHD is recommended when a patient first presents, and at the follow up appointment.[1]
- A follow-up screen should occur 2–3 months after a CHD event, and then yearly, as for any other major risk factor for CHD.[1]

Reference
1. Colquhoun D, et al. Med J Aust 2013; 198 (9):483–484.

Screening for depression in CHD

- Use of a simple screening tool may increase uptake of screening.
- Examples of simple tools include:
  - Patient Health Questionnaire-2 (PHQ-2)[1]
  - Short-Form Cardiac Depression Scale (CDS).[2]

References
1. Elderon L, et al. Circ Cardiovasc Qual Outcomes 2011; 4:533–540.
2. Hare DL, et al. J Psychosom Res 1996; 40:379–386.

PHQ-2

- The PHQ-2 is an abbreviated form of the PHQ-9, with only the first two of the nine questions in the PHQ-9.
- PHQ-2 Yes/No version:[1]
  - During the past month, have you often been bothered by feeling down, depressed or hopeless?
  - During the past month, have you often been bothered by little interest or pleasure in doing things?
- There are also other versions of the PHQ-2 which may use shorter time frames.

Reference
1. Whooley MA, et al. J Gen Intern Med 1997; 12:439–445.

Screening for depression in CHD

- Patients with positive screening results should undergo further evaluation.[1]
- Consideration should also be given to screening the partner or spouse of these patients for depression, as they may have an increased risk of developing depression.[2]

References
1. Colquhoun D, et al. Med J Aust 2013; 198 (9):483–484.
2. Fosbøl EL, et al. Eur Heart J 201 2013; 34: 649–656.

Treatment

- Depression in patients with CHD responds similarly to cognitive behaviour therapy (CBT), collaborative care, exercise, and some drug therapies as it does in other patients with depression in the general population.[1]
- A collaborative or stepped-care approach is probably optimal for managing patients with CHD and comorbid depression.[2]

References
1. Colquhoun D, et al. Med J Aust 2013; 198 (9):483–484.
2. Ladapo JA, et al. Arch Intern Med 2012; 172:1682–1684.

Pharmacological treatment

- Clinical trials involving patients with depression and CHD:
  - fluoxetine[1]
  - sertraline [SADHART][2]
  - ENRICHD[3]
  - citalopram [CREATE][4]
  - mirtazapine [MIND-IT].[5]
- A recent meta-analysis of trials involving selective serotonin re-uptake inhibitors (SSRIs) in patients with CHD concluded that this class of drugs was well tolerated, with the risk of adverse events similar to placebo.[6]
- Tricyclic antidepressants may worsen CHD outcomes and should be avoided in patients with CHD.[7]

References
1. Strik J, et al. Psychosom Med 2000; 62:783–789. 2. Glassman AH, et al. JAMA 2002; 288:701–709.
3. Berkman LF, et al. JAMA 2003; 289:3106–3116. 4. Lespérance F, et al. JAMA 2007; 297:367–379.
5. Honig A, et al. Psychosom Med 2007; 69:606–613. 6. Mazza M, et al. J Psychopharmacol 2010; 24:1785–1792.
7. Honkola J, et al. Eur Heart J 2012; 33:745–751.

Psychological interventions

- A Cochrane review of psychological interventions (including cognitive behavioural strategies) for patients with CHD found evidence of small-to-moderate improvements in depression and anxiety symptoms with these interventions.[1]
- There was no strong evidence that the interventions reduced total deaths, risk of revascularisation, or non-fatal infarction.[1]

Reference
1. Whalley B, et al. Cochrane Database Syst Rev 2011; (8):CD002902

Exercise

- Mild depression responds well to regular exercise and cardiac rehabilitation (exercise-based).[1]
- A recent Cochrane review of exercise as a treatment for depression concluded that exercise improves depression with a similar efficacy to CBT.[2]

References
1. Colquhoun D, et al. Med J Aust 2013; 198 (9):483–484.
2. Rimer J, et al. Cochrane Database Syst Rev 2012; (7):CD004366.

Exercise

- The benefit of exercise appears to have a dose–response relationship, needing at least half an hour of moderate aerobic activity on 5 days per week.[1]
- This is consistent with usual public-health recommendations.

Reference
1. Dunn AL, et al. Am J Prev Med 2005; 28:1–8.

Complementary and alternative therapies

- Therapies that may be effective in depression are supplemental marine n-3 fatty acids (EPA and DHA), SAMe and St John's wort.[1]
- Specific trials in patients with CHD and depression have not been performed with SAMe and St John's wort.
- Most commercial brands of St John's wort have not undergone randomised trials.[1]

Reference
1. Freeman MP, et al. J Clin Psychiatry 2010; 71:669–681.

Referral

- Once depression is identified through screening, treatment may be initiated immediately, or referral to psychological or psychiatric services may also be considered appropriate.[1]
- There can be a reluctance to treat depression in patients with CHD because of a belief that depression is normal after an acute cardiovascular event.[1]
- Mild depression may resolve spontaneously; however, for most individuals with CHD, depression remains long term.[1]

Reference
1. Colquhoun D, et al. Med J Aust 2013; 198 (9):483–484.

National Heart Foundation of Australia recommendations for screening and treatment of depression in patients with CHD[1,2]

Recommendation	Grade of recommendation	Level of evidence
1. For patients with CHD, it is reasonable to screen for depression	A	I
2. Treatment of depression in CHD patients is effective in decreasing depression	A	I
3. Treatment of depression in CHD patients improves CHD outcomes	D	II
4. Treatment of depression in CHD patients changes behavioural risk factors/ adherence	B	III-2
5. Exercise is an effective treatment of depression in patients with CHD	A	I
6. Exercise improves CHD outcomes in patients with CHD	B	II

References
1. Colquhoun D et al. Med J Aust 2013;198 (9):483–484.
2. National Health and Medical Research Council (NHMRC). Accessed December 2009. https://www.nhmrc.gov.au.

National Heart Foundation of Australia recommendations for screening and treatment of depression in patients with CHD[1,2]

Recommendation	Grade of recommendation	Level of evidence
7. Psychological interventions improve depression in patients with CHD	B	II
8. Psychological interventions improve CHD outcomes in patients with CHD and depression	D	II
9. SSRIs improve depression in patients with CHD	A	I
10. SSRIs improve CHD outcomes in patients with CHD and depression	D	III-1
11. Collaborative care approach improves depression in patients with CHD	B	II
12. Collaborative care approach improves CHD outcomes in patients with CHD and depression	D	II

References
1. Colquhoun D et al. Med J Aust 2013; 198 (9): 483–484.
2. National Health and Medical Research Council (NHMRC). Accessed December 2009. https://www.nhmrc.gov.au.

National Heart Foundation of Australia consensus statement summary of treatment subgroup effects[1,2]

		Depression		CHD outcome	
	Treatment	Grading of recommendation	Level of evidence	Grading of recommendation	Level of evidence
Non-drug	Exercise	A	I	B	II
	Psychological including CBT	B	II	D	II
	St John's Wort	D	* (no studies available to assess)	D	*
	Omega-3	D	II	D (only data available in patients without CHD)	II

References
1.Colquhoun D et al. Med J Aust 2013; 198 (9):483–484.
2.National Health and Medical Research Council (NHMRC). Accessed December 2009. https://www.nhmrc.gov.au.

NHMRC levels of evidence[1]

	NHMRC evidence hierarchy: designation of levels of evidence
Level	**Intervention**
I	A systematic review of level II studies
II	A randomised controlled trial
III-1	A pseudorandomised controlled trial (i.e. alternate allocation or some other method)
III-2	A comparative study with concurrent controls: •non-randomised, experimental trial •cohort study •case-control study •interrupted time series with a control group
III-3	A comparative study without concurrent controls: •historical control study •two or more single arm study •interrupted time series without a parallel control group
IV	Case series with either post-test or pre-test/post-test outcomes

Reference
1. National Health and Medical Research Council (NHMRC). Accessed December 2009. https://www.nhmrc.gov.au.

Definition of NHMRC grades of recommendations[1]

Grade of recommendation	Description
A	Body of evidence can be trusted to guide practice
B	Body of evidence can be trusted to guide practice in most situations
C	Body of evidence provides some support for recommendation (s) but care should be taken in its application
D	Body of evidence is weak and recommendation must be applied with caution

Reference
1. National Health and Medical Research Council (NHMRC). Accessed December 2009. https://www.nhmrc.gov.au.

Implementation

- A practical **depression screening tool** has been developed by the National Heart Foundation of Australia that:
- provides easy access to the recommended screening questionnaires, for health professionals to use in clinical practice
- includes the PHQ-2 and PHQ-9 questionnaires
- can be used to quantify depression severity and assess change over time and response to treatment
- may be a useful patient record.
- The main aim of this tool is to increase the uptake of screening of CHD patients for depression and assist implementation of the recommendations made in the National Heart Foundation of Australia consensus statement.[1]
- The tool can be downloaded from the Heart Foundation website at www.heartfoundation.org.au.

Reference
1. Colquhoun D et al. Med J Aust 2013; 198 (9):483–484.

Depression in patients with coronary heart disease

A practical tool for screening your patients

The prevalence of depression is high in patients with coronary heart disease (CHD). Rates of major depressive disorder of around 15% have been reported in patients after myocardial infarction or coronary artery bypass grafting. The benefits of treating depression include improved quality of life and adherence to therapy, and potentially improved CHD prognosis.[1]

The Heart Foundation recommends that all patients with CHD be routinely screened for depression by their GP or health professional at first presentation, using the questions below. Repeat at the next follow-up appointment.

A follow-up screen should occur 2–3 months after a CHD event. Screening should then be considered on a yearly basis, as for any other major risk factor for CHD. See *Reducing risk in heart disease* for more information, available at: http://www.heartfoundation.org.au/SiteCollectionDocuments/Reducing-risk-in-heart-disease.pdf.

Patient Health Questionnaire (PHQ-2) – yes/no version[2]

	YES	NO
1. During the past month, have you often been bothered by feeling down, depressed or hopeless?	☐	☐
2. During the past month, have you often been bothered by little interest or pleasure in doing things?	☐	☐

If the patient answers yes to either question in the PHQ-2, it is recommended that the full PHQ-9 is then completed (see over page or http://www.phqscreeners.com/). PHQ-9 can be used to quantify depression severity and assess change over time and response to treatment. It may be useful to file in the patient's records. The calculated score can be interpreted using the table opposite.

PHQ-9 score	Depression severity
0–4	None–minimal
5–9	Mild
10–14	Moderate
15–19	Moderately severe
20–27	Severe

The short-form Cardiac Depression Scale (CDS)[3] is an alternative simple initial screening tool that can be used and is available at: http://www.austinmedicine.unimelb.edu.au/research/Cardiac%20&%20Vascular/index.html

References

1. Colquhoun DM, Bunker SJ, Clarke DM, et al. Screening, referral and treatment for depression in patients with coronary heart disease. A consensus statement from the National Heart Foundation of Australia. Med J Aust 2013; 198 (9): 483–484.
2. Elderon L, Smolderen K, Na B, et al. Accuracy and prognostic value of AHA-recommended depression screening in patients with coronary heart disease. Data from the Heart and Soul Study. Circ Cardiovasc Qual Outcomes 2011; 4: 533–540.
3. Hare DL, Davis CR. Cardiac depression scale: validation of a new depression scale for cardiac patients. J Psychosom Res 1996; 40: 379–386.

Conclusions[1]

- Depression is a recognised risk factor in onset and prognosis of CHD.
- The prevalence of depression is high in patients with CHD and it has a significant impact on the patient's quality of life, adherence to therapy and prognosis.

Reference
1. Colquhoun D et al. Med J Aust 2013;198 (9):483–484.

Conclusions[1]

- A simple tool for initial screening, such as the PHQ-2, or the Short-Form CDS, can be incorporated into usual clinical practice with minimum interference, and may increase uptake of screening.
- Effective treatments for depression include CBT, collaborative and co-ordinated care, exercise, and some drug therapies.

Reference
1. Colquhoun D et al. Med J Aust 2013;198 (9):483–484.