

# Coronary Heart Disease and exercise

## What is Coronary Heart Disease?

Coronary heart disease (CHD), also known as coronary artery disease, is a disorder of the coronary arteries around the heart in which the regional blood supply is insufficient to deliver the oxygen needed by the heart muscle. CHD is the leading cause of death in many developed countries, and accounts for 17% of all deaths and 49% of deaths from cardiovascular disease in Australia.(1)

## How does exercise affect Coronary Heart Disease?

Regular moderate-intensity exercise has many benefits for people with CHD: it prevents the blood vessels from narrowing further (anti-atherosclerotic), prevents blood clotting (anti-thrombotic), helps deliver blood to the heart (anti-ischaemic), and helps to maintain a normal heart rhythm (anti-arrhythmic). These changes reduce the load on the heart at rest and during exercise, which helps to lessen some of the symptoms as well as decrease the risk of death from CHD (4). Additional benefits from exercise in those with CHD include: improved physical function and psychological wellbeing, and favourable changes in blood pressure, HDL cholesterol and insulin sensitivity (5).

## What types of exercise are recommended?

Exercise prescription should take into account the individual's exercise capacity and risk profile, and aim to reach and maintain the individual's highest possible fitness level (6). Exercise recommendations for CHD state 30-60 minutes per day, on 3-5 days per week, of moderate-intensity exercise (e.g. vigorous walking). The total may be completed in shorter sessions of 5-10 minutes and accumulated throughout the day (6). Exercise intensity can be set in any of the following ways starting at the lower end of the range and increasing over time:

- as a proportion of maximal heart rate (50–80%) or at 40–60% of heart rate reserve (6); and
- using the rating of perceived exertion (10–14 on a 6–20-point Borg's scale).

In patients who experience exertional angina (chest pain during physical activity) exercise should be prescribed at a maximum heart rate corresponding to at least 10 beats per minute below the heart rate at which ischaemia occurs (7). Strength is often compromised in patients with CHD so dynamic resistance (weight) training should be incorporated with aerobic exercise training to improve physical strength needed for activities of daily living. Isometric (static) training should be avoided, because it can increase the pressure on the heart muscle (myocardium). Resistance training should:

- Commence at a maximum intensity of 30–50% of one-repetition maximum (1RM: weight that can be lifted only once), and the intensity should not exceed the weight that can be lifted for 12–15 repetitions using correct technique (8); and
- Be performed 2–3 days per week and include one set of 8–10 exercises targeting all major muscle groups. As the patient progresses, the number of sets of each exercise should increase (up to three) following which the intensity may be increased up to a maximum of 60-70% of 1RM.
- Include a recovery pause of at least 1 minute between each set (6)
- After a cardiac event, people should complete at least two weeks of aerobic training before starting resistance training. After coronary artery bypass graft surgery, people should avoid exercises that cause tension or pressure on the breastbone for two to three months. People need to be taught the correct technique, and the importance of, regular breathing when performing resistance exercise.

## References and further information

Exercise is Medicine Australia [www.exerciseismedicine.org.au](http://www.exerciseismedicine.org.au)

Find an Accredited Exercise Physiologist [www.essa.org.au](http://www.essa.org.au) Exercise Right [www.exerciseright.com.au](http://www.exerciseright.com.au)

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For more detailed information, please read the full version of this factsheet at [www.exerciseismedicine.org.au](http://www.exerciseismedicine.org.au)

