PREHABILITATION (CARDIAC) & EXERCISE

PROFESSIONAL

WHAT IS PREHABILITATION (CARDIAC)?

Cardiac prehabilitation is a proactive approach to cardiac rehabilitation (1), in which interventions take place during the preoperative waiting period to improve functional capacity and enhance postoperative recovery (2). This generally incorporates the domains of nutrition (e.g. healthy eating), exercise and physical activity, and psychology (e.g. health and wellbeing, behaviour change, etc.).

Cardiac prehabilitation alternatively endeavours to prepare the client before surgery takes place, through the preparation and dissemination of a healthy lifestyle program. This holistic approach ensures acknowledgement of the multifaceted complexities involved in cardiac care, including, but not limited to, aerobic and resistance capacity and training, lifestyle modification, diabetic control, sleep health and psychoeducation (e.g. behaviour change).

Per the National Heart Foundation of Australia (3), one in six Australians self-report having cardiovascular disease (CVD), which equates to approximately 4 million Australians (or over 16% of the population). While the prevalence of cardiovascular disease has been decreasing as research in this area further develops, it is still one of the most prevalent (and preventable) diseases in Australia. Cardiovascular disease is responsible for over a quarter (25%) of all deaths of our nation.

Per The National Health Service (UK), a combination of health factors contributes to the risk of developing cardiovascular disease and requirement of surgical intervention. Elements include, but are not limited to, high blood pressure, smoking, high cholesterol, type 2 diabetes, physical inactivity, being overweight or obese, and having a family history of CVD. These significantly increase the risk of angina (chest pain due to restricted blood flow to the heart), heart attacks (where blood flow to the heart is blocked) and heart failure (where the heart is unable to function properly).

Cardiac prehabilitation is suitable for clients if they are diagnosed with and/or require:

- Coronary heart disease
- A heart attack or admission for angina
- A stent procedure or heart surgery (bypass, valve or artery surgery)
- Heart failure and cardiomyopathy
- Heart transplant
- A device insertion, for example a pacemaker or implanted defibrillator
- A cardiac arrest
- In-heart electrical rhythm problems, such as atrial fibrillation
- High blood pressure in your lungs (pulmonary hypertension)
- A stroke or mini stroke (transient ischaemic attack or TIA)
- An event (stent, percutaneous coronary intervention or PCI, Coronary artery bypass surgery or CAGS).

THE BENEFITS OF EXERCISE

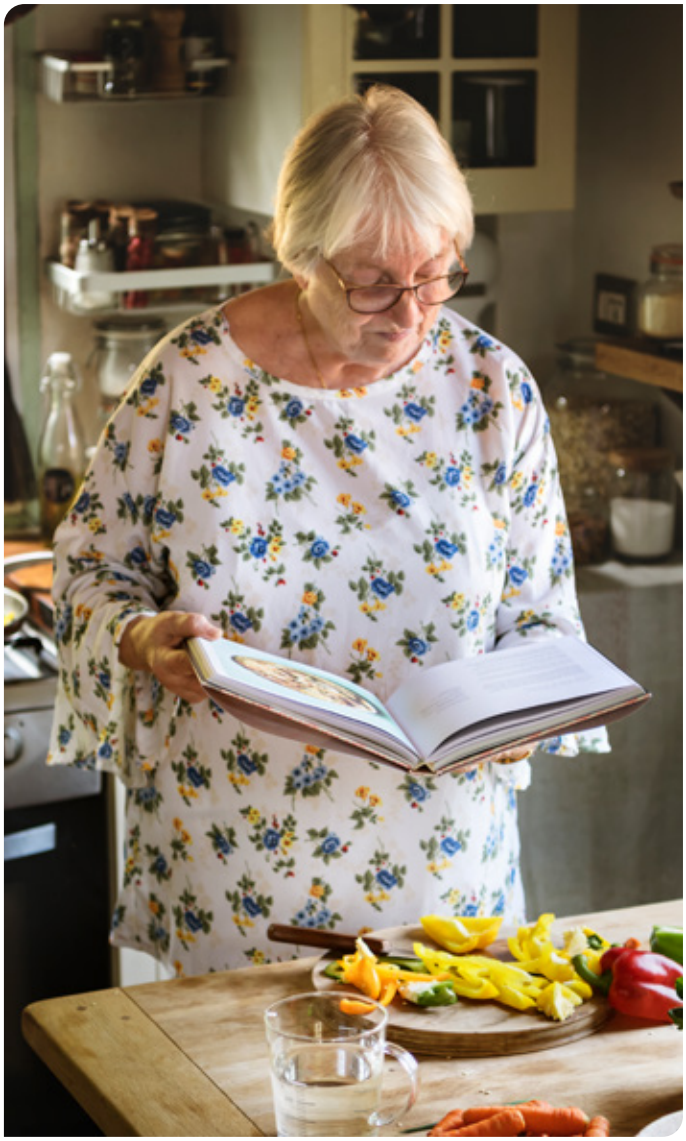
The combination of diet and exercise are shown to (4):

- Reduce the progression and development of cardiovascular disease risk factors (e.g. obesity, type 2 diabetes, etc.)
- Improve quality of life
- Increase ejection fraction
- Improve vasculature and myocardial perfusion
- Reduce chronic inflammation

THE MOST APPROPRIATE EXERCISE

The combination of diet and exercise are shown to (4):

- 150 minutes of moderate activity each week
  - Desirably six months prior to surgery (4)
  - Can be broken into smaller, more manageable intervals (e.g. starting at 10 minutes a day, working up to the Australian Government's recommended 30 - 45 minutes a day, five or more days a week, per the National Heart Foundation of Australia)
- Starting at a level that is suitable for the client and gradually increasing duration and intensity as fitness levels improve
- High-intensity interval training is appropriate, well-tolerated and can be recommended (4, 5)
- Resistance training should be individualised to a person's physical capacity, adjusting to factor one repetition maximum (1RM) and rate of perceived exertion (RPE) (5)
  - 2-3x/week with 8-10 multi-joint exercises targeting major muscle groups (5)
- Supervised exercise is preferred considering unsupervised exercise may result in less physical activity, and decrease in muscular endurance and cardiovascular health (6)



RELATED INFORMATION AND REFERENCES

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Exercise is Medicine Australia www.exerciseismedicine.org.au

Exercise Right www.exerciseright.com.au

Find an Accredited Exercise Physiologist www.essa.org.au

National Heart Foundation of Australia physical activity recommendations for people with cardiovascular disease: https://adelaidevascularspecialist.com.au/wp-content/uploads/2017/06/Physical-activity-recommendations-for-people-with-cvd.pdf

https://www.nhs.uk/conditions/cardiovascular-disease/

https://www.heartfoundation.org.au/heart-health-education/physical-activity-and-exercise

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