

Chronic Heart Failure and exercise

What is chronic heart failure?

Chronic heart failure (CHF) is a life-threatening condition that occurs when the heart no longer effectively pumps blood to the lungs and the rest of the body. People with CHF are often breathless and tire easily, especially during exercise. Worsening or poorly managed heart failure may cause fluid to build up in the lungs, known as acute pulmonary oedema or 'water on the lungs'. This is accompanied by severe breathlessness, frothy sputum and coughing, and requires urgent medical attention. Fluid may also build up in other areas, causing peripheral oedema (puffy, swollen ankles) and venous congestion (e.g. prominent jugular veins) which may cause the veins to bulge out in the neck. CHF has many causes, the most common being myocardial infarction (heart attack), hypertension (high blood pressure) and diabetes (high blood sugar).

How is CHF treated?

For people with CHF, a combination of medical and lifestyle management usually reduces symptoms, improves quality of life, slows the progression of the disease and prolongs life. CHF shares many of the risk factors prevalent in other cardiometabolic conditions. Controlling cardiovascular risk factors is very important to prevent and manage CHF. This includes lowering levels of blood cholesterol and other fats, lowering blood sugar levels and blood pressure, limiting alcohol intake, stopping smoking and engaging in daily physical activity.

Patients with CHF are prescribed multiple drugs including 'ACE inhibitors' or 'angiotensin blockers' to reduce blood pressure, slow the progression of disease and improve quality of life. Other prescriptions may include 'diuretics' to reduce fluid accumulation and 'beta blockers' to lower heart rate and blood pressure. The three drug classes act individually and together to reduce the work of the heart, improve exercise tolerance, reduce symptoms and mortality. For acute episodes of CHF, inotropes such as digoxin may be given to boost the pumping action of the heart. Atrial fibrillation is common in CHF and is treated using ablation, pharmacotherapy (for arrhythmias and to prevent clotting) and/or pacemakers; a goal of pacing is also to achieve cardiac resynchronisation. Some patients with severe CHF have surgery to reduce the size of a swollen heart or to fit an extra pump to assist the ventricular pump. Patients need to control their salt and fluid intakes and follow a healthy, low-fat, low-sugar diet with plenty of fresh fruit and vegetables. In addition, a properly planned exercise program is very beneficial, improving signs and symptoms and quality of life.

How does exercise benefit people with CHF?

Exercise has many benefits for people with CHF. Exercise:

- increases cardiovascular function (VO₂peak) that is highly linked to improved clinical outcomes;
- increases muscle strength and endurance;
- improves ability to function and undertake activities of daily living;
- improves quality of life and reduces anxiety and symptoms of depression;
- improves cardiovascular risk by lowering levels of blood cholesterol and other fats, blood sugar and blood pressure;
- reduces the occurrence and severity of the signs and symptoms associated with CHF; and
- slows the rate at which the disease progresses, which reduces both the number of times patients are hospitalised and the death rate from CHF.

Thus exercise acts as a 'poly-pill' that improves physical and clinical fitness and mental health.



Important considerations for CHF and exercise

CHF is a serious condition and a number of factors must be considered when designing an exercise program:

- People with CHF must be medically stable before starting an exercise program.
- Generally, people with CHF have more energy in the morning, particularly midmorning.
- The exercise program should be enjoyable to be sustained long term, and include some usual daily activities such as walking to shops and walking the dog.
- Before starting a program, properly supervised exercise tests are required to determine safe and effective types, amounts and levels of intensity of exercise. Tests include any or all of the following: aerobic fitness (VO₂peak), heart rate and rhythm, blood oxygen content (called 'oxygen saturation') and blood pressure, muscle strength and endurance tests and functional capacity assessments; tests can usually be done with little dependence on technology and rarely require exercise at high intensity.
- The exercise program should include both aerobic training for heart and lung fitness and resistance exercise training (weight training).
- Low blood pressure is a common problem for people with CHF, especially during exercise or recovery from exercise. Blood pressure and other vital signs and symptoms should be monitored before and after each supervised exercise session. Low blood pressure can cause symptoms of light-headedness, fainting, sweating, anxiety, distress and disturbances in heart rhythm. Patients should be able to recognise the adverse signs and symptoms associated with exercise and report these promptly to their primary health professional.
- People with CHF and diabetes should monitor and self-manage their blood sugar levels before and after exercise.
- People with CHF should adhere to their management plans.

How much exercise should people with CHF do?

No particular amount of exercise is the 'right amount' for people with CHF. Programs must always be tailored to a person's medical status, medical treatment, exercise capacity and lifestyle goals. As a guide, however, aerobic endurance exercise should be performed on most days of the week for between 20 and 60 minutes, at an intensity that suits the person's condition. This exercise can be taken in one session or broken up into smaller periods of exercise and physical activity throughout the day. Resistance training should be performed on 2–3 days a week, with 8–10 different exercises for the major muscle groups. Two or three sets of 8–12 repetitions, with weights that require a moderate to high effort (e.g. 50-80% of one repetition maximum), are appropriate. An alternative to a formal exercise program is to actively engage in usual daily activities that incorporate exercises for strength and endurance, mobilisation, flexibility and balance. Good examples are gardening, light housework, walking to the shops, and carrying or wheeling the shopping home.

References and further information

Exercise is Medicine Australia www.exerciseismedicine.org.au

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

Exercise Right www.exerciseright.com.au

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