

Solid-organ transplantation



What is solid-organ transplantation?

Solid-organ transplant surgery is an accepted life-saving procedure with over 1,300 recipients in Australia in 2015. The most common organ transplanted is the kidney, followed by the liver, lungs, heart and pancreas. Often, the major indications for organ transplantation are chronic end-stage diseases specific to each organ (e.g. end-stage kidney disease). Following transplantation, patients are treated with immunosuppression therapy to prevent organ rejection. These medications may result in significant loss of fitness and weight gain, contributing to the development of the metabolic syndrome and cardiovascular disease.

How does exercise help with solid-organ transplantation?

There are several benefits for all who participate in exercise training. These include:

- Improving cardiorespiratory fitness and physical function.
- Increasing muscular strength, muscle size and bone density.
- Assisting with weight loss and weight maintenance.
- Improving cardiometabolic risk profile (e.g. reducing blood pressure, regulating glucose control, improving lipid profile).
- Improving symptoms associated with depression and anxiety.

Patients awaiting solid-organ transplantation are often severely deconditioned, showing a wide variety of health-related physiological and psychological complications. Research suggests that cardiorespiratory fitness and reduced muscle mass are associated with poor outcomes before and after solid-organ transplant surgery. Exercise training appears safe in this population and it is recommended that patients remain physically active while listed for transplantation to minimise any further disease-related deconditioning.

It is important to seek medical approval prior to engaging in any exercise following solid-organ transplantation. Transplant recipients have commenced aerobic exercise training in as little as 8 weeks following surgery. It is suggested that exercise-induced improvements in health are maximised if patients commence exercise training within the first year after surgery.

What type of exercise is best for solid-organ transplantation?

The most common modes of exercise training that have been used in both solid-organ transplant candidates and recipients include **aerobic** (endurance), **resistance** (strength) and **flexibility** (stretching). People that are awaiting or have received a solid-organ transplant are often deconditioned and should begin exercising slowly with gradual progression. It is recommended that people aim to achieve 20-60 minutes of aerobic exercise on 3-6 days per week at an intensity that suits the individual's current condition.

Resistance training should be performed on 2-3 days a week, with 8-10 different exercises, focusing on major muscle groups. It is suggested to perform one to three sets of 8-12 repetitions, with a weight requiring a moderate effort (50-80% of one-repetition maximum). Additionally, flexibility training can also be incorporated 2-3 times per week for 10 minutes.

It is highly important you speak to your medical team and/or an accredited exercise physiologist before commencing any exercise.

Always seek professional advice from an Accredited Exercise Physiologist. Find one here: www.essa.org.au/find-aep