

# KIDNEY DISEASE AND EXERCISE

PROFESSIONAL

## HOW DOES REGULAR EXERCISE HELP PEOPLE WITH KIDNEY DISEASE?

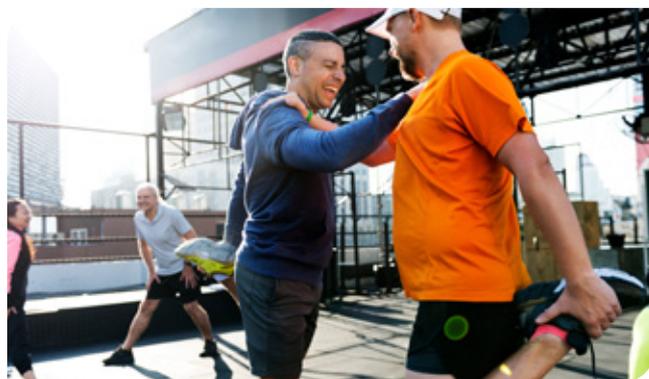
A systematic review published in 2015 identified 59 trials that evaluated the efficacy of exercise training in people with all-stages of kidney disease. The majority of studies have been performed in haemodialysis patients. This evidence suggests that regular exercise increases aerobic fitness/functional capacity (the ability to perform activities of daily living), improves muscle strength and health related quality of life, and counteracts sarcopaenia (loss of muscle mass) (2). Exercise training also beneficially impacts indices of cardiovascular health including blood pressure and heart rate variability (a measure of autonomic function).

Increasing physical activity through regular exercise may slow the progression of kidney disease and associated complications (1). Studies have shown that doing 'some' physical activity compared to 'none' reduces the risk of premature all-cause and cardiovascular mortality by up to 50% in patients with chronic kidney disease (3).

## WHY IS REGULAR EXERCISE IMPORTANT?

Exercise has many benefits for all people including (2):

- improves health related quality of life;
- increases exercise capacity (the ability to perform daily tasks);
- increases muscle mass and strength/function, and reduces falls risk;
- decreases blood pressure;
- reduces diabetes risk and improves glucose control in people with diabetes;
- aids weight loss and managing body weight; and
- reduces anxiety and depression.



## IS EXERCISE SAFE FOR PEOPLE WITH KIDNEY DISEASE?

People with kidney disease can exercise safely, provided that the exercise program begins slowly and progresses gradually, and that all exercises are performed using the correct technique. People with kidney disease may also have other co-morbidities, such as heart disease and diabetes, that require further special considerations. It is recommended that an exercise program is prescribed by an accredited exercise physiologist or physiotherapist who is qualified to recognise the exercise needs of people with kidney disease and possible diabetic complications. However, if access to services are limited, individuals will still benefit from general advice to increase physical activity levels from all health professionals (e.g. GP).

## WHAT TYPE OF EXERCISE IS RECOMMENDED?

Australian guidelines (5) recommend performing a combination of aerobic (endurance), resistance (strength) and flexibility (stretching) training for 30 minutes, 5-7 days per week.

## WHAT IS A TYPICAL EXERCISE SESSION?

Each session should comprise of a brief warm-up of approximately 10 minutes of light aerobic (e.g. walking) and stretching exercise before the main exercise phase. The main part of the session should comprise of aerobic exercise targeting large muscle groups such as walking, jogging, cycling, stair climbing or swimming depending on the capability of the person. Exercising with a partner or in a group may help develop a support network. Health care professionals should highlight the importance of warming up, cooling down and stretching to reduce the risk of injury

and include these components in exercise programs. People with kidney disease may have poor fitness when starting an exercise program, so the program should begin slowly and progress gradually, and be tailored to suit their starting fitness level and abilities.

## HOW INTENSE SHOULD THE AEROBIC EXERCISE BE?

Patients/people should exercise at the hardest intensity they are capable of. As per the guidelines (5), the aerobic exercise intensity should be classified by the person as 'somewhat hard'; that is, their breathing and heart rate should increase, making it difficult to talk continuously while exercising. People should try to exercise at the highest intensity tolerable, increasing the time as their fitness and confidence increase.

## WHAT TYPE OF RESISTANCE EXERCISE SHOULD BE DONE?

Resistance exercise should be done on alternate days at least twice a week, starting each session at a lower intensity. Intensity can be assessed using a rating of perceived exertion scale. The program should comprise of 1 set of 8-12 exercises at an intensity (weight) that can be maintained (lifted) with correct technique for 12-15 repetitions. Resistance exercise should include a combination of weight-bearing and functional exercises.

## WHAT ABOUT EXERCISE FOR PEOPLE ON DIALYSIS?

It is possible to exercise during haemodialysis; for example, by cycling on a stationary bicycle (5). However, the dialysis unit may not have the space for the bicycle or the staff expertise to monitor the exercising patient closely. Furthermore, the person might not be willing or feel capable of exercising during dialysis. It may be more convenient for patients to exercise on non-dialysis days, especially on days when they are feeling well. A patient may become hypotensive (low blood pressure) after haemodialysis and should avoid exercising directly afterward. Patients receiving peritoneal dialysis may find it more comfortable to exercise if they drain fluid from the abdomen and exercise when empty or partially empty. Because most patients on dialysis are on substantial fluid restriction and pass little urine, it is important to consult with the patient's nephrologist before changing the patient's fluid intake (e.g. encouraging water intake during and after exercise sessions).



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If you have any concerns about the safety of your patient in commencing an exercise program, please consider referral to a Sport and Exercise Physician.

Find a Sport and Exercise Physician [www.acsep.org.au/](http://www.acsep.org.au/)

### REFERENCES AND FURTHER INFORMATION

1. Robinson-Cohen et al., JASN; 25(2): 399-406 2014
2. Barcellos et al., Clin Kidney J; 8(6): 753-765 2015
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4. Painter P & Roshanravan B. Curr. Opin Nephrol Hypertens; 22:615-623 2013
5. Smart NA et a. JSAMS; 16:406-411, 2013

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