



# Warm water exercise

Best practice evidence for warm water exercise for people with musculoskeletal conditions: A systematic review of the literature – 2014

A RESEARCH PROJECT PLAIN LANGUAGE SUMMARY

**Researchers:** Health Services Research Unit, Monash University, and Arthritis and Osteoporosis Victoria

*Explanatory note:* In 2018 Arthritis and Osteoporosis Victoria become Musculoskeletal Australia. For the purposes of this summary, Arthritis and Osteoporosis Victoria will continue to be used.

## Background

Arthritis and Osteoporosis Victoria (A&OV) offers a number of exercise programs designed to provide health and social benefits to people with musculoskeletal conditions. These programs include tai chi, nordic walking and warm water exercise.

Warm water exercise programs such as 'Waves' warm water exercise program and the warm water exercise classes run by A&OV peer support groups are very popular with consumers and have been running for many years.

Although there is anecdotal evidence from participants and class leaders of the benefits of warm water exercise, as well as an increasing number of studies reporting the positive impacts of warm water exercise for people with musculoskeletal conditions, there is a lack of high quality evidence to substantiate the benefits of warm water exercise.

The aim of this project, a collaboration between Arthritis and Osteoporosis Victoria and the Health Services Research Unit at Monash University, was to systematically review the literature to determine the evidence base.

## What is warm water exercise?

Warm water exercise involves exercising in a heated, warm water pool. It is a comfortable and enjoyable way for a person with arthritis or a musculoskeletal condition to exercise the joints and muscles while being supported in the water. A&OV offers two types of warm water exercise classes – the Waves warm water exercise program and peer support group warm water exercise.

Waves is the A&OV warm water exercise program. It involves gentle exercises that give a general workout for the whole body. Classes run in hydrotherapy pools across Melbourne in pools that are kept between 32°C to 34°C. Specially trained volunteer leaders, many of whom also live with a musculoskeletal condition, demonstrate a general exercise program for participants to follow.

Volunteers also lead the peer support group warm water exercise classes. These classes are at various locations across Victoria and run regularly for group members.

Water exercise leaders from both Waves and peer support groups are trained by A&OV staff, and attend update training every two years. They are also provided with relevant resources, such as a leaders' warm water exercise DVD.

## The project

Researchers conducted a systematic review of studies on warm water exercise that had been published in peer-reviewed journals from Australia and overseas. Articles published in a peer-reviewed journal have been written by an expert and are then reviewed by several other experts in the same field (the author's peers) to get their opinion on the quality of the work before it is published. This review means that articles are generally of a high quality.

The search for studies began with a broad search that included studies that looked at a range of musculoskeletal conditions. In the past, studies have focused on the benefits of warm water exercise in relation to the more common conditions such as osteoarthritis, fibromyalgia and low back pain. It was important to extend the review to include other musculoskeletal conditions as the A&OV warm water exercise programs are open to people with any musculoskeletal condition.

Over 1,000 articles were found during this initial search. Of these, 28 randomised controlled trials\* and two quasi-randomised controlled trials^ were relevant to the review.

#### What is a randomised controlled trial\* or quasi-randomised controlled trial^?

A randomised controlled trial randomly allocates participants in a trial into two (or more) groups to test a treatment or intervention. This random allocation helps reduce bias. A quasi-randomised controlled trial allocates participants via a method that is not truly random – so it is quasi. For example, allocation may be by date of birth, day of the week, medical record number, the month of the year etcetera.

#### Findings

An analysis of the findings of the 30 included studies found that warm water exercise provides many benefits for people with musculoskeletal conditions. Importantly, there were no reports of any harmful effects of warm water exercise.

Twenty-six studies compared warm water exercise to land based exercise, or activities such as relaxation or no exercise. When compared to exercise on land, warm water exercise provides similar outcomes. This suggests that for people who find exercising on land difficult or where it may be unsafe or clinically not appropriate, warm water exercise may provide an effective and safe alternative.

When compared with the relaxation or no exercise groups, those participating in warm water exercise experienced a moderate reduction in pain, and a moderate improvement in physical function and quality of life. Based on the available evidence warm water exercise provides benefits to people with a range of musculoskeletal conditions compared to doing no exercise.

This study goes a long way to addressing the lack of evidence around warm water exercise and musculoskeletal conditions. However, gaps remain in our understanding of the characteristics – such as frequency, duration and intensity of exercises - of warm water exercise programs that provide the most benefit.

Based on the current evidence, successful programs appear to include two sessions of 60 minutes duration per week, run for at least six weeks, target strengthening of hip and knee extensor muscles (gluteals and quadriceps) using resistance and weight-bearing exercises, and include moderate intensity aerobic exercise. Including education sessions and balance exercises was found in a small number of studies to provide additional benefits.

#### How we can help

Call our MSK Help Line and speak to our nurses. Phone 1800 263 265 or email [helpline@msk.org.au](mailto:helpline@msk.org.au).

We can help you find out more about:

- arthritis and musculoskeletal conditions
- ways to live well with these conditions
- managing your pain
- upcoming webinars, seminars and other events.

*Written February 2014, updated June 2018*