

What are aquatic interventions?

Aquatic interventions are exercise programs performed in a controlled water environment (e.g. in a pool).

Aquatic therapy is also referred to as:

- water-based therapy
- pool therapy
- hydrotherapy
- hydrokinesiotherapy

Why are aquatic interventions used for?

It is common to experience physical difficulties after a stroke, such as difficulty with walking and balance. Exercise after a stroke is very important to recovery. It is necessary to continue to exercise after a stroke, to avoid further muscle weakness and reduced fitness. Exercise can also have a positive effect on mental health and neurological health.

Aquatic interventions can be suitable for different levels of ability and recovery after stroke. Aquatic therapy is used in stroke rehabilitation because water provides a safe and comfortable environment for exercise. There are several ways in which aquatic therapy assists recovery:

- The density and viscosity (thickness) of water provides buoyancy to support body weight. This reduces the impact of movement on joints, allows for increased mobility, and reduces the risk of falls when exercising.
- The hydrostatic pressure of water provides resistance for muscle strengthening. This pressure also provides increased sensory input to the muscles and joints.
- Water can provide relief for muscles and joints.

Are there different types of aquatic interventions?

Yes, there are different types of aquatic therapy used in stroke rehabilitation. Rehabilitation clinicians may choose a specific program because of:

- the method (e.g. task-oriented training, Halliwick method, Ai Chi method)
- the equipment (e.g. obstacle courses, treadmills)
- the goal (e.g. improving upper body strength, lower body strength, balance or proprioception)

How do I do aquatic therapy?

Your stroke rehabilitation team will talk with you to determine whether aquatic therapy is available, safe, and suitable for your recovery. Your rehabilitation clinician will develop a program that addresses your specific recovery needs and goals. Your clinician will supervise your session and will instruct you on the exercises and movements. They may assist you in the pool or direct you from beside the pool, depending on safety.

Do aquatic interventions work?

Researchers have done studies to see if aquatic therapy helps people who have had a stroke. There is good evidence that aquatic therapy can improve balance and walking skills.

There is strong evidence that aquatic therapy is helpful in the **subacute phase** of stroke recovery (1-6 months after the stroke) for improving:

- lower extremity muscle strength
- gait

There is moderate to strong evidence that aquatic therapy is helpful in the **chronic phase** of stroke recovery (more than 6 months after the stroke) for improving:

- balance
- mobility
- walking speed
- gait
- walking endurance
- cardiovascular fitness
- muscle activity
- pain

Other studies show that aquatic therapy is also helpful for improving emotional status and quality of life (related to health).

Note: These studies showed that aquatic interventions were more effective than land-based interventions or no treatment.

Are there any side effects or risks?

There are safety risks to consider when starting aquatic therapy after stroke.

Risks include:

- Slips and falls on wet surfaces around pools. The clinician will assess the individual's safety and mobility before starting the program. The clinician will supervise or assist the individual to enter and exit the pool safely.
- Drowning and heat exhaustion. The clinician will closely supervise the individual when doing exercises. The clinician will monitor the pool temperature and the individual's wellness during the session.
- Skin irritation and infection. Aquatic therapy should be done in a pool with controlled pH levels and an environment with frequent cleaning routines. The clinician should follow hygiene and infection control procedures.

Aquatic therapy should be done under supervision of a rehabilitation clinician. The clinician will choose a program that is safe and that suits the person's recovery.

Who provides the treatment?

Aquatic interventions are performed under the supervision of a trained clinician. The clinician will choose specific exercises that use the physical properties of water to benefit the patient. The program and exercises will be selected according to each person's recovery stage, abilities, needs and rehabilitation goals.

Who can help me?

It is important to obtain medical clearance from your physician before starting an exercise program after stroke. Talk with your rehabilitation team if you are interested in aquatic therapy for stroke recovery.