

# Hydrotherapy

## What is Hydrotherapy?

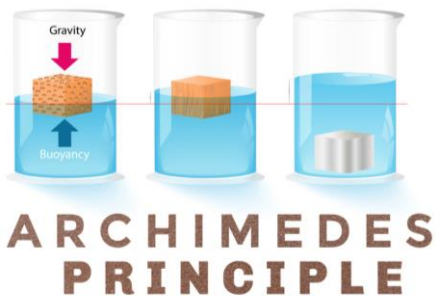
Hydrotherapy (also known as water therapy, aquatic therapy or pool therapy) is exercising within an aquatic environment.

- Hydro – comes from the Greek word for ‘Water’
- Therapy – comes from the Greek word for ‘Healing’
  - Hydrotherapy – ‘Water Healing’

The main difference between exercising in a hydrotherapy pool and normal swimming pool is the temperature. A normal pool is kept around 28°C in comparison to a hydrotherapy pool heated to 33-35°C.

## Buoyancy

Buoyancy (based on Archimedes Principle) is determined by the relative density of an object and the liquid in which it is immersed. Imagine having a wooden and metal block of the same size – although they are the same size, the metal block will sink quicker because it’s more dense when compared to the wooden block.



When we compare fat mass (also known as adipose tissue) and muscle mass. Muscle mass has a higher density than fat mass, so someone who is muscular will be less buoyant in water compared to someone who has more adipose tissue

## Weight-Bearing Forces

When you exercise in the water, due to buoyancy, the weight-bearing forces are reduced, therefore decreasing joint load and stress.

The reduced joint load and stress will depend on the depth of water (ie. The deeper the water, the less weight bearing on your joints). Because of this, hydrotherapy is extremely beneficial in early rehabilitation as you can still exercise and move the joint without excessive weight-bearing forces.

## Benefits of Hydrotherapy



Promotes Blood Flow

Stimulates the Immune system



Reduces Joint Load

Encourages Social Interaction



Alleviates associated pain or discomfort

Decreases Oedema



## Hydrostatic Pressure

Hydrostatic Pressure (based on Pascal's Law) is the fluid pressure exerted equally on all surface areas, on an immersed body at rest at a given depth. In simpler terms, hydrostatic pressure applies constant force on body parts immersed in water and changes according to the force (ie. The difference between standing in waist deep water versus neck deep).

### Advantages:

- Improves circulation around the body – assist the heart in circulating blood around the body and returning it to the heart
  - Beneficial for individuals with diabetes (particularly peripheral neuropathy), thrombosis, peripheral artery disease and/or Lymphodema
- Increased the rate of kidney function and filtration rate alongside increasing urine production.
- Good for Lymphodema or swelling, as the constant pressure encourages the excess fluid back into lymphatic system to be removed by the body.

### Disadvantages:

- Increases venous return to the heart – this can cause the heart to be under an increased workload, which is not ideal for individuals with underlying heart or lung conditions. It can further cause heaviness in the chest

## Things to Consider Before Starting Hydrotherapy

- Have you spoken to an Exercise Professional?
- Are you able to get changed independent or do you need help?
  - Do you need mobility aids around the edge of the pool? Remember the edge of the pool can have water on the ground causing it to be slippery
  - Do you have any medications that need to be on the edge of the pool?
  - Remember to bring a drink bottle

## Contraindications

Prior to commencing any form of exercise, you should always consult an exercise professional, in particular for hydrotherapy.

Due to the nature of hydrotherapy and the principles of buoyancy and hydrostatic pressure, there are some conditions which are not suitable for hydrotherapy. These include:

- Acute inflammatory conditions
- Cardiac Instability
  - Decompensated heart failure, myocardial infarction, unstable ischemia, dissecting aortic aneurysm, resting HR above 100bpm, or resting BP 200/100mmHg
- Severe hypo or hyper-tension
- Respiratory instability
- Active bleeding
- Open/infected wounds
- Incontinence

