



## **Aqua therapy – Freeing You from Your Limitations**

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Have you ever imagined the frustration of being stuck in a wheelchair for a day, let alone months or years, having your body in the same seated position for hours before you get to lie down? And that is the only two positions your body gets to move in for most of the day.

Unfortunately there are many people with spinal cord injuries (quadriplegic, paraplegic, etc.) and neurological conditions (stroke, motor neuron disease, cerebral palsy, etc.) that have to go through this every day.

Over and above the physical discomfort of being immobile, there are also many physiological changes that occur. These include:

- Reduced metabolic rate.
- Depending on the patient's condition, there might be a decline in the person's ability to cough productively. This could lead to more frequent bacterial infections due to the inability to clear mucus efficiently.
- Decreased circulating fluid volume and pooling of blood in lower extremities, reduces venous return. This in turn reduces the cardiac output which results in a decreased BP and therefore making the heart work harder.
- Long term immobilisation can also lead to an increased risk of thrombus formation, due to decreased blood flow.

- Depending on the condition, the person will also experience a decrease in muscle mass, decreased stability as well as impaired joint mobility.
- Some may develop bed sores due to tissues being compressed and blood being diverted for extended periods of time.
- Increased risk for UTIs due to gravitational forces.

But all these physical constraints and physiological changes could be relieved or improved by simply submerging in water.



Submersion decreases weight bearing by up to 90% when submerged in neck deep water, so an individual who is unable to support their body weight on land is often able to walk with minimal support in the pool. Other benefits of buoyancy are that the water support weak muscles, enhances flexibility and range of motion, and increase the ease of handling for the therapist.

Hydrostatic pressure is the force exerted on the immersed body by fluid molecules, and is a wonderful benefit of aquatic therapy. Hydrostatic pressure decreases pain and edema, which in turn increase range of motion. It also increases venous return and circulation by assisting the heart and decreases blood pooling in extremities. Furthermore, hydrostatic pressure turns down the body's reticular (activating) system (the brain's system of arousal), dampening tactile sensory input to the brain. This is partly why the water is such a calming environment for most people. Individuals who have a negative response to touch are often able to tune out their surroundings and focus on and enjoy being in the pool.

Submersion also places increased demands on the respiratory system, allowing for increased exhalation. Therefore, the respiratory muscles are forced to work a bit harder in the water, which causes these muscles to become more efficient.

The list of benefits, from physical and physiological to emotional benefits, that spinal cord injury and neurological patients experience from aqua therapy goes on and on but the one thing that most of these patients will mention is the **FREEDOM** of being out of their chair and being able to move their body in more than just the seated or lying down position. For many spinal cord injury or neurological patients exercise on land is impossible but this may not necessarily be the case in water.

Aqua therapy might just be the one thing you need to set you FREE from your limitations.