Aquatic Therapy (AT) for Patients with Neurological Disease

**Precautions**:1

* Cardiovascular disease
* Cardiopulmonary disease
* History of CVA or Epilepsy
* Incontinence
* Cold or influenza
* Fever
* Skin conditions
* Chlorine allergy
* Tracheotomy
* Urinary incontinence
* Hydrophobia
* Diarrhea
* Vomiting

**Contra-indications**:1

* Urinary tract infection
* Uncontrolled epilepsy
* Actively bleeding wounds
* Active Hepatitis A infection
* Certain unstable heart conditions such as: myocarditis and uncontrolled angina

**Indications for Aquatic Therapy**

* To relieve pain1
* To reduce muscle spasm
* To relax
* To increase joint range of motion
* To re-educate muscles
* To strengthen weak muscles2
* To improve functional mobility
* To improve circulation
* To improve balance8

**Properties of Water**:

* **Buoyancy:** when a body is immersed in water, it experiences an upward force equal to the weight of volume of water displaced3
* **Hydrostatic Pressure**: Pressure that the water exerts on the body
* **Water Resistance:**
* **Shape resistance**: object moving in water experiences resistance in the direction of movement, and lower pressure behind
* **Wave resistanc**e:3 Experience resistance with colliding waves from moving water
* **Friction:**3 Force acting opposite to the relative motion of the object.
* **Turbulence**: Violent/unsteady movement of air or water.
* **Thermodynamics:** Water has high heat capacity and is a good conductor: transfers heat to the body quickly

**Types of Aquatic therapy:**5

* Ai Chi
* Aquatic PNF
* Bad Ragaz Ring Method
* Halliwick Method
* Watsu

**Evidence for Aquatic Therapy**:

There is a need for larger, higher quality randomized controlled trials

* **Multiple Sclerosis:** Small RCTs, some evidence that aquatic therapy improves fatigue6, health related quality of life7 decreases in pain, and muscle spasms6
* **Parkinson’s**: One RCT found that AT group had increase in dynamic balance, TUG, and BSS compared to the control group8
* **Stroke:** AT may improve strength in paretic limb9 and balance10

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Abbreviations:

 RCT=Randomized Controlled Trial

 AT = Aquatic Therapy

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