



**NURTURING
WATER
THERAPIES**

Senior Health, Fitness and Aquatic Exercise

www.NurturingWaterTherapies.org

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Introduction



- ▶ Personal background:
 - ▶ swimming/aquatics
 - ▶ senior fitness/exercise
 - ▶ working with organizations, physicians and Physical Therapists
 - ▶ Specialized classes/Individual sessions
 - ▶ How I got into Aquatic Therapy



80% of Americans over the age of 65 have one chronic condition; 50% of Americans over 65 have at least two chronic conditions

Do you suffer from:

Chronic Pain

Chronic Fatigue

Depression

Lack of Sleep

Muscle Weakness

Today we are going to talk about how Aquatic Therapy can help benefit your life!



What is Aquatic Exercise and Aquatic Therapy?

- Water-based treatments or exercises individually designed to meet your needs using various therapeutic techniques
- Low-impact activity
 - Water's buoyancy takes the pressure off your bones, joints and muscles.
 - Water offers natural resistance, which helps strengthen your muscles.
- Aids in reducing pain, improving range of motion, gait, balance and stability

What if my pain is too severe to exercise?

- The assumption that physical activity should be stopped due to pain is incorrect.
- Exercise improves long term outcomes.
- If exercise is aggravating the pain, modifications need to be made.

How can being in water modify my exercise and decrease my pain?

Fun Facts

- The resistance to movements performed at an average speed in water is approximately 12 to 15 times the resistance to movements performed at the same speed on land.
- Water is 800 times denser than air.
- Water movement speeds are 39% slower than land movement speeds for equivalent energy expenditure.
- While chest is immersed in the water, the work of breathing increases 60% owing to hydrostatic pressure

Not-so-fun Facts

- The leading cause of death for adults over the age of 65 has shifted from acute illness and infectious disease to chronic conditions and degenerative illnesses such as heart disease, diabetes, strokes and cancer.
 - **All of which have been related to lifestyle factors.**
- 95% of health care dollars are spent to treat chronic conditions; more than 2/3 of health care costs are spent to treat chronic conditions among older adults

Benefits of Aquatic Therapy



Complements land-based therapy or exercises



Water-based therapy provides a change in routine and introduction of new program that complements land-based therapy.



Aqua Physics

Because of water's unique properties, water-based exercise will provide somewhat different benefits than land-based exercise.

Water Resistance

Water has 12 times the resistance of air.

The resistance may slow the exerciser down, but it gives him/her tremendous benefits.

Movement Speed

When moving through water, exercise needs to be modified to allow for water resistance.

Speeds must be slowed and controlled without compromising alignment and using full range of motion.

Aqua Physics (Cont.)

Muscle Balance

A tremendous benefit to aquatic exercise/therapy. When participants exercise in the water, they are able to get equalized muscle balance that is not available through any other medium.

Energy Expenditure

A water workout can give a greater energy expenditure for a workout while maintain a lower heartrate.

Water Buoyancy

With a 90% weight loss in shoulder-depth water, participants are able to exercise with less biomechanical stress allowing them to exercise longer and more frequently without the likelihood of injury.

Physical Laws and Principals of Water

Understanding physical laws and water principles will give the instructor the knowledge base needed to provide the best individual care as they work with clients in the water.

Physical Laws:

Inertia

Acceleration

Action versus reaction

Leverage

Water Principles:

Water Density

Buoyancy

Hydrostatic Pressure

Resistance

Turbulence



Benefits of Aquatic Exercises and Therapy For Stroke Survivors

A stroke occurs when a blood vessel to one's brain is blocked or broken, thus damaging brain cells.

Possible skill loss may include:

Speech

Vision

Movement (in some cases near total paralysis)

Memory

After a stroke, the functions lost must be completely relearned, including re-developing muscle memory, strengthening muscles, relearning speech patterns and developing new memories.



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How a stroke can affect mobility



After a stroke, you may experience:



Weakness. Your foot and leg may be paralysed completely or they may be weak. Paralysis on one side of the body is called hemiplegia. Weakness on one side of the body is called hemiparesis.



Planning or coordinating problems. You may have difficulty planning leg movements. This is called apraxia. You may also have difficulty coordinating movements which makes them feel slow or clumsy. This is called ataxia.



Changes in the muscles. You may have high tone which makes your muscles stiff and tight. This is called hypertonia or spasticity. Alternatively, your muscles may be floppy or loose. This is called low tone or hypotonia.



How a stroke can affect mobility (Cont.)



Balance. You may have difficulty keeping your balance, feel unsteady or dizzy.



Contracture. If your muscles are tight or weak, they can become shorter. This can result in the joint becoming fixed in one position.



Changes in sensation. You might lose feeling, have pins and needles or have increased feeling (hypersensitivity).



Swelling. If your leg or foot does not move as well as it used to, fluid may build up (oedema).



Fatigue. You may feel very tired after walking even a short distance. This is made worse because as you may have to concentrate hard on even simplest movements.



Pain. You may experience pain in your leg after a stroke, most often in the hip. This can make walking more difficult.

What you need to know:

A stroke can affect how well you sit, move, balance, stand and walk.

Exercise will improve your fitness, your general health and reduce your risk of having another stroke.



Aquatic Therapy

- ▶ In recovering from loss of movement due to strokes, aquatic therapy is a great medium to relearn valuable life skills.
- ▶ It's goal is to help re-teach functions affected by the stroke, while strengthening and building off of the skills and functions that still remain.



Improve balance and coordination and gait

Specifically prescribed exercises that focus on your strength, coordination, balance, sensation or fitness are known as task-specific activities.



Repetition is key to improvement, so you may do movements many times.

Decreased spasticity and tone

Movement and exercises can help to reduce muscle stiffness and pain.

Regular activity will help you to continue your recovery.

Improve activities of daily living allowing for more independence and an optimal quality of life

Mobility difficulties affect everyone differently.



It is important to find the one that best fits your needs.

Ideal Aquatic Therapy Environment

Accessibility

- Facility should be ADA approved.
- Pool must have accessible means of entry and exit.

Safety

- Never swim alone
- A certified lifeguard should be on duty during therapy sessions.
- Accessibility to first-aid supplies and AED.

Pool Temperatures

- 88-92 degrees for less active patients

Ambiance

- Patients with sensory challenges will benefit from a quieter atmosphere.

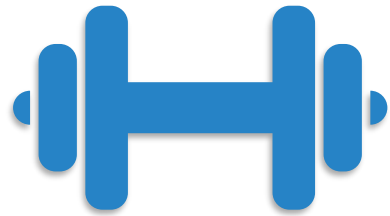
Video: Aquatic Rehab after a Stroke

- ▶ Joe received aquatic therapy while an inpatient at Helen Hayes Hospital. He suffered a stroke that left the right side of his body weak, uncoordinated, and in pain.
- ▶ The buoyancy and warm water (92 degrees) allowed him to relax tense muscles and move safer and easier than he could on land. He received hands on techniques to release tight muscles, and he participated in Water Tai chi (known as Ai Chi) to improve balance, joint range of motion, and relaxation.





Benefits of staying active and exercising



Exercise improves your fitness, your general health



Reduces your risk of having another stroke

Conclusion



Thank you for listening.



What questions do you have?



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