

Dystonia and Parkinson's Aquatic Techniques

by Maryanne Haggerty

In order to provide safe and effective exercise programs and routines for Dystonia and Parkinson's the aquatic therapist needs guidelines and or effective techniques to provide some relief from the neurological symptoms that interfere with muscle balance, posture, spinal health, core strength, balance strength, and flexibility. Neither condition has a cure so both have a need for continued research for treatments and a cure.

In the meantime, we are faced with a growing population of individuals who are being diagnosed with Dystonia and Parkinson's with an array of neurological movement disorders, and we are being sought after to help the individuals with these conditions. Many practitioners don't know what dystonia is and how it responds and are frustrated by Dystonia and Parkinson's symptoms or the lack of progress. By staying educated about these conditions you will be able to improve lives through exercise.

With the neurological movement disorders of Dystonia and Parkinson's, the person experiences a variety of symptoms and responses to the form and stage of these conditions. Both of these conditions are usually treated with drug therapy and sometimes DBS (Deep Brain Surgery). These treatments may or may not work and all have side effects. Aquatic therapy addresses the symptoms of muscles spasms, contractures, rigidity, tremors, and postural instability. If aquatic exercises are adapted to each individual's symptoms during their treatment session then the ease of moving in the water while using gentle resistance can help to control the symptoms. When symptoms are controlled or overridden then increases in flexibility and increases in core and balance strength will be able to progress. As with any condition, the individual responses will vary greatly and communication and interaction with the patient/client as to the efficiency of the exercises is essential in ensuring the benefits of the aquatic techniques.

About Dystonia

Dystonia is a movement disorder that causes the muscles to contract and spasm involuntarily. The involuntary muscle contractions cause twisting, repetitive, and patterned movements as well as postures that compromise spinal integrity. With dystonia, there are a variety of muscle contractions that can either be painful or just an involuntary posturing of a limb or the spine.

Dystonia is a neurological condition thought to originate in the basal ganglia portion of the brain. There are many different types of dystonia based on where the symptoms are in the body. Approximately 13 forms of Dystonia and many diseases and or traumas that include dystonia as a major symptom widen the scope of how many people are at risk. Some of those diseases are Parkinson's, Multiple Sclerosis, and Huntington's not to mention those caused by medications.

Cervical Dystonia or Spasmodic Torticollis affects the neck muscles pulling the head into extreme and awkward postures that affect cervical and scapular joint and muscle mechanics. Generalized dystonia affects the extremities such as the foot and arm and may include the whole body. Some other forms of dystonia affect the vocal cords, face, jaw, fingers, hand, forearm, and eyelids causing them to close. Regardless of the area affected, Dystonia causes pain, injury, embarrassment, and not to mention the depression of having your muscles lock your body in a twisted position for an undetermined time. Couple the physical symptoms of Dystonia with the false belief of past years (from lack of research and explanation) that it was a psychological problem, is a condition that was not getting appropriate treatments and that many practitioners gave up on or did not even treat.

A very popular treatment for Dystonia among other drug therapy treatments is Botox injections. Many or most of those with Cervical Dystonia are involved in having Botox injections in their neck and/or trapezius muscles to relieve spasms. BOTOX® (Botulinum Toxin Type A) Purified Neurotoxin Complex blocks the nerve impulses that trigger muscle activity. The neurotoxin is thought to chemically inhibit the release of the neurotransmitter acetylcholine from nerve endings by binding to certain receptors on cholinergic terminals. It is then engulfed by the nerve endings. Once inside a nerve ending, the neurotoxin interferes with the cholinergic vesicles that release acetylcholine. This interference leads to chemodenervation and reduced muscular contractions.

Aside from possible side effects and reactions to BOTOX, the amount of relief experienced may only be very short-term, usually estimated at approximately three months. Patients will eventually return to the muscle spasms, involuntary twisting and repetitive patterns as they were before most drug therapies. They can be reinjected over time with the neurotoxin as long as they continue to respond and do not have a serious allergic reactions. These allergic reactions can affect swallowing, speech, or respiratory disorders. Basically, it temporarily paralyzes the injected muscle. Depending on the muscle(s) injected, one can have trouble swallowing or even lifting the head up off the floor or pillow.

About Parkinson's

Parkinson's disease is a very common neurodegenerative disease. Alzheimer's is the most common, Parkinson's is next. Parkinson's disease is a neuromuscular movement disorder that causes rigidity (stiffness), bradykinesia (slowing of movements), tremors, dementia, and increases in reaction time, poor balance, and posture changes. There is a delay in reaction time for gross and fine motor functions from walking without a balanced arm swing to writing or even using utensils among other symptoms. Some of the physical symptoms include tremor of the fingers and thumb, shuffling, trouble in beginning movement, stooped posture, and lack of facial expressions.

Parkinson's results from the brain's inability to properly process dopamine, a neurotransmitter, in the substantia nigri (part of the basal ganglia). A variance in how much dopamine is produced and the number or function of dopamine's receptors results in Parkinson's. Infection, toxins, drug side effects, and or genetics may cause this condition.

Parkinson's disease is progressively degenerative with drug therapy helping to temporarily control the disease. Drug therapy may include anticholinergic drugs, neuroprotective drugs and Levodopa (L-dopa) which is a metabolic forerunner to dopamine. L-Dopa has been found to be effective initially. DBS and other surgeries have tried to control areas of the brain and nerve cells.

Even though Parkinson's has been widely known and researched, many with this condition are left to manage on their own except when there is an extreme impairment of their daily functioning.

What can you do?

Provide a safe and adaptable environment for the individual with Dystonia and Parkinson's to have an aquatic experience that provides some relief from their symptoms and helps them to control the variables that interfere with muscle balance, postural and spinal integrity, core and balance strength, and flexibility. By learning about these specific conditions you will be able to improve lives through aquatic exercise.

A brief look at aquatics techniques for Dystonia and Parkinson's takes into account the many variables that are symptoms and triggers of each condition. A Dystonia and Parkinson's Aquatic Techniques seminar/workshop would cover these in more detail.

Aquatic Techniques for Dystonia

Aquatic Techniques for Dystonia will vary greatly for each person with dystonia, from each day, from each variable that is used in the exercise program. The major key and the only key to

dystonia symptoms is CHANGE and ADAPTABILITY to the aquatic exercises that help to keep the muscles balanced. Spasms and patterns of muscles locking (opposing muscles contracting at the same time) or twisting the body is a warning to change the exercise!!! Tempo, repetitions, recovery are all dependent on progress. Aquatic Feldenkrais® and the Unpredictable Command Technique may help.

A Theme for exercise selection: Flexion based on the joints

Aquatic Techniques for Parkinson's

Aquatic Techniques for Parkinson's is also dependent on the individual's response to exercise, what stage of the disease they are experiencing, and the medication's interaction with timing and exercise. The major key to aquatic exercise for Parkinson's disease is mobility, balance, and posture. Unlocking the rigidity (stiffness) through focused flexibility, preventing falls and further injury through balance training, and gently strengthening postural muscles is the goal of the aquatic techniques. Ai Chi and BackHab techniques may help.

Themes for exercise selection: Extension and Trunk Rotation

The bottom line and the major line for all aquatic therapy exercise for Dystonia and Parkinson's is the patient/ client's response to each exercise and each day's conditions. Fine tuning and adjusting techniques to these specific neurological movement disorders is the focus of this workshop. One missing link (or exercise progression/regression) may open doors for increases in balance, mobility, and flexibility for your patient/ client with Dystonia and Parkinson's. The person with these conditions needs your investigation into the range of Aquatic Techniques that can make a difference in improving the physical and consequently the psychological well being of their lives. Go make a difference, go help them make waves!

Maryanne Haggerty, MS, has been educating professionals, individuals, and groups on safe and effective exercise for 25 years. As a faculty member and presenter for TSI, NASM, AEA, and AFAA, she has certified professionals. Promoting exercise for all abilities, Maryanne has presented televised exercise segments on aquatics. She has developed corporate wellness seminars and six-month home exercise program progressions. She is teaching on Parkinson's disease and Dystonia in Florida in July for the Aquatic Therapy & Rehab Institute. Go to www.atri.org for more information.