

CEC Article Vol 4, 2014

Aquatic Programing for Parkinson's Disease

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I believe that water fitness instructors have to be the most adaptable people in the fitness industry. We never know what we may be dealing with in any given class. Doctors often tell their patients to head to the water because they have heard what a wonderful place it is to work out in. It is wonderful to have the medical community finally acknowledging the benefits of water and encouraging their patients to go to aquatic classes. This being the case we may have people with heart conditions, MS, arthritis, Parkinson's and many other health issues taking our water fitness classes. It is important that we understand these conditions and health safety issues. We can then know what to watch out for and how to cue and teach a safe class for them as well as give a good workout to our physically fit participants. This article will focus on Parkinson's disease.

Parkinson's disease was originally known as Palsy. The disease was renamed Parkinson's after a British doctor named Parkinson wrote about the disease in 1817. This disease is caused by a loss of dopamine production which affects the area of the brain that controls movement causing uncontrolled, abnormal movement. Parkinson's disease is inherited but the environment can also trigger. A severe flu epidemic in the 1900's left many with a Parkinson's like disorder. In the 1980's people taking an illegal designer drug containing MPTP were later diagnosed with Parkinson's. Diagnosing Parkinson's disease is difficult and often done by eliminating other potential diseases.

Dystonia with fatigue is the first common symptom. Dystonia is an involuntary turning down of the foot, flexing of the big toe and abduction of arm and elbow making the hand rest in front of the abdomen. The tremors start out subtle and infrequent, worsening over time. They are usually asymmetrical and when at rest confined to the upper body. The body becomes rigid and movement is slower than normal. As the disease progresses it affects posture and gait. There is forward flexion at the hips and a shortened stride which in turn affects balance increasing the risk for falls. People with Parkinson's often become inactive due to a fear of falling and the inability to perform activities well.

The treatment for Parkinson's disease is drug therapy. The drugs currently being used are levodopa and carbidopa. Other treatment options are aerobic exercise, therapeutic massage, acupuncture, music and art therapy, balance and flexibility activities such as yoga and tai chi. All of these can help with muscle stiffness, soreness and pain. People with Parkinson's derive the same benefits from exercise as the general population.

These benefits are:

- Improved muscular strength and flexibility
- Improved balance
- Maintaining natural gait
- Maintaining or improving cardiovascular efficiency
- Improved self esteem

Exercise also helps protect against dementia which 83% of people with Parkinson's can develop after living with Parkinson's for 20 years.

According to the American Parkinson Disease Association exercise programs should include the following *.

- Strength and flexibility training
- Aerobics training which progresses slowly in intensity
- Functional training for daily living activities
- Balance and coordination training
- Voice and facial expression exercises
- Focus on posture and body alignment
- FUN!!!!

Water instructors know how the water allows much more freedom of movement. We can do many activities in water that we would never consider trying on land, such as leaping across the pool! This is especially beneficial for people with Parkinson's or other physical limitations. Some of the advantages of working out in the water for those with special needs are listed below.

- The buoyancy and viscosity of the water promotes range of motion and muscular strength, especially in the core and legs.
- The warmth and massaging properties of the water encourages the muscles and joints to relax and lengthen reducing pain.
- Water's viscosity slows movement giving more reaction time. It is a safe place to practice balance with supervision because

it gives the person time to regain their balance before falling.

- Water's movement means the body has to continually adjust which generates body awareness and encourages better posture. The hydrostatic pressure, warmth and massaging properties of water also assist in improved bowel elimination.

People with Parkinson's enjoy a freedom in the water that they do not have on land. The water helps them enjoy exercising and enables them to be with others, enabling them to break out of their cycle of isolation and depression. It also helps them regain their confidence and self-esteem when they see what they can accomplish in the water.

People with Parkinson's need to be monitored closely during exercise because their autonomic nervous system may dysfunction at any time causing poor regulation of body temperature, altered heart rate and blood pressure. Parkinson's symptoms are unpredictable and can flair up with no warning causing a loss of balance.

An instructor who has participants with Parkinson's in class should be aware of these safety issues.

Stress from a new situation:

Can cause acute Parkinson's symptoms such as rigidity and slowness of movement.

Energy depletion:

Exercising expends large amounts of energy. For example breathing in neck deep water uses 7 times more energy than breathing on land. Watch for signs of weakness, rigidity or dizziness at end of class.

Water temperature:

Cool water temperatures (optimum temperature is 90-92 degrees) can cause a sudden drop in blood pressure leading to fainting. Chill bumps and shivering **during** moderate exercise is a sign that the water is too cool for them.

Balance issues:

People with Parkinson's have poor balance which leads to easily falling over in the water and being unable to stand back up. Flotation devices do NOT solve this problem but may help.

Aquatic instructors should strongly encourage the Parkinson's participant to do the following for their safety in class.

- Talk to their doctor and get his/her permission to participate in an aquatic fitness class.
- Bring an extra dose of levodopa/carbidopa medication to the pool to combat exercise induced symptoms.
- Exit the pool slowly giving their body time to adjust, watching for any of the symptoms listed above.
- Bring a workout buddy to be an extra set of eyes and who can assist you to and from the pool.

- Wear a shirt or water vest/jacket to help maintain core temperature.
- Take a water safety skills test, which is:
 - Walking forward, backward, and sideways in water.
 - Submerge face and blow bubbles
 - Float on back and return to standing
 - Float on front and return to standing

Participants with beginning Parkinson's may be able to participate in a regular water aerobics class with no trouble. Encourage them to monitor how they feel after class and if they do not have an occurrence of symptoms or unusual fatigue following class they should continue attending. If they do notice their symptoms get worse encourage them to try a slower class such as a water arthritis class. The participant with Parkinson's may use equipment such as buoys, kickboards and noodles for strength training or to assist in stabilizing.

The following is a sample beginner's class designed by the American Parkinson Disease Association*. Take note that it is very similar to a water arthritis class.

Warm-up:

Water walking 8-10 min. Walk forward/backward/sideways

Upper Body Exercises:

Squat, shoulders in and do following Horizontal Arms, Side & Forward Arm Raises, Overhead Reach, Scissor Arms, Shrugs

Upper Body Stretches: Hold 15-30 seconds.

Triceps, Shoulder, and Chest Stretches

Trunk Flexibility:

Trunk Rotation & Lateral Flexion, Pelvic Tilt, & Hip Circles

Lower Body Exercises:

Hold the wall if need help with balance and do following Squats, Hip Flexion/Extension, Abduction/Adduction, Knee Flexion/Extension, Hamstring Curls, Ankle Circles, Ankle Flexion/Extension

Lower Body Stretches: Hold 15-30 seconds.

Low Back, Quad and Calf Stretches

Face & Neck Exercises:

Look Surprised, Happy, Sad, Pretend to Yawn, Say the Vowels while Exhaling Tilt Head to Side, Look Over Shoulder, Pull Chin In for 3 seconds

Hand Exercises:

Spread Fingers/Make a Fist, Thumb to Each Finger, Play Piano, Thumb Sweep

Working with class participants with Parkinson's and other special needs can be very rewarding for a fitness instructor. Don't be afraid to accept the challenge and watch as these participants blossom in self-confidence and improved health!

*Information taken from the "Aquatic Exercises for Parkinson's Disease" brochure published by The American Parkinson Disease Association, Inc. 2001.

CEC ARTICLE QUESTIONS VOL 4, 2014 (2 CEC's)

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1. Parkinson's was originally called Palsy. T or F
2. Parkinson's is caused by _____?
3. Parkinson's is inherited but can also be caused by environmental situations. T or F
4. What are two common symptoms people with Parkinson's have?
5. Parkinson's is treated with _____ drug therapy.
6. People with Parkinson's have a dysfunction which can cause poor regulation of body temperature, blood pressure and heart rate during exercise.
7. List 4 benefits that people with Parkinson's may receive from exercising.
8. People with Parkinson's receive the same benefits from exercising as the general population. T or F
9. Name 4 safety concerns an instructor should be aware of if she/he has a participant with Parkinson's.
10. Name 4 ways to help alleviate these safety concerns.

11. What 3 other therapies or activities that may help a person with Parkinson's

12. What type of water fitness classes may a person with Parkinson's participate in?

13. A beginner aquatic Parkinson's class is very similar to an aquatic arthritis class. T or F

14. A person in the beginning stages of Parkinson's should be able to safely participate in a water aerobics class. T or F

15. What activities should be included in a beginners Parkinson's class?