

The Benefit of Aquatic Exercise for Lymphedema

Today I would like to share with you an article on aquatic exercises written by Mary Essert, B.A., ATRIC for this blog.

Mary specializes in creation and delivery of water fitness and post rehab aquatic programs for individuals with disabilities and conditions such as Arthritis, Fibromyalgia, Breast Cancer, Lymphedema, post Polio Syndrome and chronic pain issues. More information on Mary Essert is available at the bottom of the article.

I would also like to inform you that all the exercises for the upper and lower extremities I covered in the last blog entry ([Decongestive and Breathing Exercises for Lymphedema](#)) may be performed in the water as well.

Here is Mary's article:

Following Joe Zuther's recent article on Resistive Exercises, this article would be a natural sequence and serve as an introduction to another non-invasive tool to use in management of lymphedema symptoms.

In addition to a number of other benefits, aquatic exercises have a strengthening effect on the musculature.

The buoyancy effect water has on the musculoskeletal system makes movement more comfortable. Range of motion and flexibility are increased when in a warm water pool and the cardio vascular system is working more effectively, so an aerobic workout is possible. Additionally, the hydrostatic pressure acts like a "full-body garment" and helps to reduce edema, and stress is reduced when an individual with lymphedema is in the water.

In short, the movements in the water are resistive, assistive/supportive, compressive, massaging, relaxing and comforting.



Deep abdominal breathing enhances pumping in the thoracic duct, one of the large lymph vessels located in the abdominal and thoracic area. Muscle contraction performed distally (hands and feet) helps return venous and lymphatic fluid.

A new body of knowledge demonstrates great success with individuals when combining intense one- hour sessions with Manual Lymph Drainage (MLD) procedures. This combination and team approach is proving most effective; Lynette Jamieson, Director of Aquatic and Rehab Services in Mesa, AZ, has utilized this technique with good result.

Education of individuals who have lymphedema and who desire to participate in aquatic exercise is vital, and knowledge of other conditions or possible side effects from chemotherapy and radiation, such as neuropathy, is necessary.

Learning to listen to our own bodies in terms of frequency, intensity and time spent exercising is our job. My personal experience is that three exercise sessions per week is a minimum, but the alternate days I perform other forms of exercise, to include a cardio workout and gentle to moderate strengthening exercises.

Personal goals need to be expressed and merged with those of the therapist or personal trainer who works with an individual who has lymphedema.

In general, goals include:

- Pain reduction
- Increased range of motion
- Increased strength
- Increased cardio respiratory conditioning
- Improved posture , balance and energy
- Education/tools re: weight management and nutrition
- Increased relaxation and stress management
- Outlet for support/social/outreach

Some specific goals include:

- To restore proper biomechanics, increase range of motion in the shoulder
- Improve strength/endurance of injured and supporting muscle groups
- Improve lymphatic flow by movement through the water, use of hydrostatic pressure, turbulence and muscle activation
- To reduce susceptibility to hypo-kinetic disease with cardio vascular exercise
- To lose body fat, increase lean body mass to reduce risk of lymphedema and breast cancer recurrence

Paula Geigle, PT, PhD, Assistant Professor, University of MD is the first recipient of the Aquatic Physical Therapy Section's \$5,000 Swim EX Clinical Research Grant (2010). Her study "Role of Aquatic Exercise" in Breast Cancer Related lymphedema management" concluded that aquatic exercise does appear to be a safe method to assist in Breast Cancer related lymphedema control. Participants do report volume reduction as well as increased energy, more pliable tissue texture, and socially enjoying the aquatic exercise participation.

In addition to several other important precautions, water temperature is important. Warm water relaxes muscles and decreases postural tone, and cooler water stimulates tone and alertness. Hot water should be avoided with edema....no hot tubs or spas. In general, pool temperature of about 88 deg. F. is a good choice if air temperature and circulation are adequate. Warmer therapy pools

may be utilized according to the individual case, for shorter periods. Paying attention to breathing patterns and posture are important; an average class is about 45 minutes long.

If privacy in the locker room is a concern, individuals may dress for the pool at home. Difficulty of getting into a swim suit or not wanting to be seen in one may be another issue. Most pools will permit clean shorts/shirt or even slacks; these should be comfortable and free from strings. If an individual with lymphedema is reticent about crowds, pool sessions may be scheduled during “down” times.

Aquatic exercise may be not pleasant for everyone.....some individuals may be afraid, or have other issues. I encourage individuals to try one session to experience the benefits; it certainly doesn't hurt to have an additional management tool available.

Following are sample aquatic programs for individuals affected by Lymphedema (By Mary Essert (with credits to Judith Casley-Smith©2008*):

It is important to:

- Understand safe entry and exit of the pool.
- Master sculling techniques and recovery to a standing position.
- Water is a substitute for a compression garment/sleeve (no need to wear sleeve for aquatic ex.)
- Listen to your body and don't push through pain.
- Avoid fatigue; slow down or stop when needed.
- The intention is to move lymph and reduce edema and to promote range of motion.

Begin with gentle Water Walking

Forward, backward and laterally for 5+minutes

Focus on Posture

Locate neutral and find a comfortable depth so shoulders can be submerged. Stability is desirable. Core muscles will be strengthened.

Breathe Work

Practice thoracic breathing, abdominal breathing and a combination. Intentional breath work blended with stability and balance skills.

Neutral Stance (Perform 5-10 reps as comfortable, increase when ready)

• **Reverse Cat Stretch:** Hunch shoulders and lean to front, then return to standing on exhale, shoulders back

• **Head Turns:** Look to Side for counts 1 & 2 / Center 3 / Relax 4

• **Forward Head Roll:** Tilt Head Right on count 1 / Roll Head Down & Toward Left 2, 3 & 4 / Return to Start 5. (Repeat other side.)

Shoulders & Arms

- **Shoulder Lifts:** Raise shoulders toward ears - count 1 & 2 / Relax 3 & 4 / Lift 5 & 6 / Relax 7 & 8
 - **Shoulder Rolls** with slow count: raise and roll shoulders in circle underwater
 - **Shoulders Forward & Backward** (retract & protract scapulae, elbows move toward back)
 - **Pendulum Arm Swing** (use pool edge): Balance one hand on a noodle, or stand with neutral spine; swing one arm at a time from shoulder, then both together with hands clasped
 - **Repeat Reverse Cat Stretch** as above
 - **Palm Press:** Prayer position; scapular retraction follows (pull elbows toward back...forearms are parallel to water surface)
 - **Shoulder Touch from Side Extension:** Bring fingers to shoulder as elbow bends from straight arm at side
 - **Shoulder Touch from Side Extension:** Fists to shoulder as elbow bends
 - **Arm Rotation with Pronation & Supination:** Shoulder emphasis (arms outstretched in front of body)
 - **Biceps/Triceps Curls:** Add jogging to prevent chilling (change hand position to increase intensity-open hand more intense)
 - **Shoulder Abduction & Adduction:** Outstretched arms to side, bring toward body, then away. Add arms criss-cross front and back (add crossing arms at elbow in front of body if comfortable, both directions)
 - **Upright Rows** (bend elbows, press back)
 - **Wall Press Away:** Front and side position (stand firm on pool floor and lean toward wall to comfort, hold 10 seconds, then push back to neutral stance)
 - **Elbow Touch:** Hands behind head, bring elbows together in front and open with breath
 - **Asterisk:** Pretend you are making a large asterisk shape in front of your body with both arms together then with single arms, underwater)
- Hand Exercises:** ‘Play the piano’, thumb circles, make a fist etc. such as hula hoops (pelvic rotation to comfort) (use sculling for balance)

Stand on one foot to perform ankle flexion & extension, ankle circles, etc. (stabilize knee)

Free/Active Stretching: Such as hula hoops (pelvic rotation to comfort)

Balance & Agility Work (use sculling for balance)

Aerobic Work

Combination Aerobic Movements (cross country ski, half jumping jacks, bicycle, forward and backward kicks with opposite arm movement etc.)

Repeat Walking: Emphasis on heel strike, heel, ball toe in forward walking, toe, ball, heel in backward.

For lower extremity emphasis, add Arthritis Foundation Aquatic Program(see Arthritis Foundation instructor) series of range of motion exercises, standing at wall for support, then graduating to balance in pool, hip flexion, extension, ab- and adduction, hip range of motion, circles from hip, extra ankle/foot work such as pedaling, AVOID KNEE ROTATION . Consider bicycling with belt or noodle support, or one leg at a time at wall. Walking or deep water running and deep water exercise may be advised, using a flotation belt.

Relaxation (use belts or noodles if comfortable) In supine position, perform curl ups and knees to chest, add gentle cycling and free movement with breath work....

Stretches (standing at wall)

- **Runners stretch**
- **Achilles tendon stretch**
- **Hamstring stretch**
- **Quad stretch**
- **Cross over shoulder stretch**
- **Spider Man Wall Stretch** (at wall, bring knees up close....anchor one foot with outstretched leg on wall, lean toward bent knee) Reverse position after holding stretch 10-30 seconds.

End with breathe work ...

Additional Resources:

Women Fitness: [Top 10 Exercises to get fit in the water](#)

Mayo Clinic: [Aquatic Exercises - How To](#)

Calgary Lymphedema Rehabilitation: [Benefits of Aquatic Exercises with Lymphedema](#)

Lymphedema People: [Water Exercises](#)

For more information re: specific exercises , resources and bibliography, see www.maryessert.com Breast Cancer Exercises for Land and Water CD-ROM by Aaronson and Essert produced by Fitness Learning Systems.

Several more recent research studies have confirmed aquatic therapy as a meaningful and effective tool in management of Lymphedema.

D. Tidhar, M.Katz-Leurer. Aqua Lymphatic Therapy in Women Who Suffer from Breast Cancer, Support Care Center.2009

Robert Wascher , MD, FACS. Exercise Improves Lymphedema Symptoms in Breast Cancer Survivors. <http://stanford.wellsphere.com>. 2009