

The role of various exercise modalities in the treatment of lymphedema

When a portion of the lymphatic system is injured by trauma, surgery or radiation, or develops abnormally, the functionality of the lymphatic system is impaired. In many cases this can cause swelling, which most often affects the upper or lower extremities. A well-balanced exercise program in combination with other treatment options used in the management for lymphedema is an important component to reduce the swelling, and a vital tool for patients to continue with normal activities of daily living.

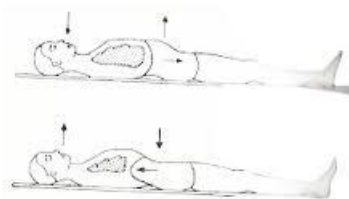
Exercise protocols are customized by the lymphedema therapist and physician to meet individual goals for patients affected by lymphedema. The specific exercise protocols are determined by considering the stage and type of lymphedema, specific restrictions and limitations of joint and muscle activity, as well as additional medical conditions.

Decongestive Exercises



Active, non-resistive and repetitive exercises are an important part in the treatment of lymphedema. Unlike the heart in the blood circulatory system, the lymphatic system does not have an active pump to propel lymphatic fluid back to the bloodstream. Effective lymph flow depends on sufficient muscle and joint activity, especially if the functionality of the lymphatic system is compromised. Decongestive exercises are most effective if performed with the patient wearing compression garments or bandages, which are also essential components in lymphedema management.

Abdominal Breathing Exercises



The downward and upward movement in diaphragmatic breathing is an important component for the sufficient return of lymphatic fluid back to the bloodstream. Patients affected by lymphedema of the leg benefit greatly from an exercise program including diaphragmatic breathing exercises. The movement of the diaphragm, combined with the

outward and inward movements of the abdomen, rib cage, and lower back promotes general well-being, peristalsis and return of venous blood back to the heart.

Resistive Exercises



Exercises combined with resistance improve muscular power increase the strength in ligaments, tendons and bones. An additional benefit is their contribution to weight control. Resistive exercises are typically performed in a repetitive manner against an opposing load. Certain strength exercises are beneficial for lymphedema patients and should always be performed with the compression garment or bandage in place. Resistive exercises using inappropriate weights present a risk for injury or overuse and should be discussed with the treating therapist and physician.

Aerobic Exercises



Aerobic conditioning is generally performed in a repetitive fashion using large muscle groups. Some long-term benefits include decrease in resting heart rate, improved muscular strength, weight control and increased return of venous and lymphatic fluids. It is important to understand that certain aerobic exercises and recreational activities could trigger an increase in swelling and should be avoided by patients affected by lymphedema. Examples of these high-risk activities include soccer, kick-boxing or step-aerobics for lower extremity lymphedema, and tennis or golf for lymphedema affecting

the arms. Beneficial activities include swimming, walking, water-aerobics, easy biking or yoga.

Aquatic Exercises



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 swelling. Exercises in the water geared toward the treatment of lymphedema are resistive, assistive/supportive, compressive, relaxing and comforting.

Additional reading:

Understanding Lymphedema – American Cancer Society
http://www.cancer.org/docroot/MIT/content/MIT_7_2x_Understanding_Lymphedema.asp
Breastcancer.org: How to avoid Lymphedema
<http://www.breastcancer.org/tips/lymphedema/avoid.jsp>
E-Medicine: Treatment of Lymphedema
<http://emedicine.medscape.com/article/191350-overview>
National Cancer Institute: Treatment of Lymphedema
<http://www.cancer.gov/cancertopics/pdq/supportivecare/lymphedema/Patient/page3>
National Lymphedema Network: What is Lymphedema
<http://www.lymphnet.org/lymphedemaFAQs/overview.htm>
National Lymphedema Network: Treatment of Lymphedema
<http://www.lymphnet.org/pdfDocs/nlntreatment.pdf>