

## Treatment of Post-Mastectomy Lymphedema

The diagnosis of lymphedema in an arm that has had lymph nodes removed or has undergone radiation therapy is entertained when a girth difference of the arm greater than 2 cm or a volume difference of greater than 200 mL occurs. Once lymphedema is diagnosed, treatment is mandatory since, left untreated, it will slowly progress, causing pain and tissue damage. Currently, there are no curative treatments for lymphedema. The goal of treatment is to control limb swelling by decreasing the excess volume and maintaining the limb at its smallest size. While simple elevation of a lymphedematous limb may reduce swelling, particularly in the early stage of lymphedema, elevation alone is rarely effective long-term. Gym exercises with weights and/or resistance devices are not recommended during the early recovery phase of axillary surgery or radiation therapy because the increased blood flow could worsen edema. However, following recovery, exercises to restore a full range of motion should be encouraged. Non-fatiguing exercises induce sufficient muscle contraction to reduce swelling. Some clinicians recommend avoidance of rowing, tennis, golf, skiing, or other vigorous repetitive movement activities; however, no scientific evidence supports these recommendations.

Complex decongestive physiotherapy (CDPT) is the multimodality program recommended by most lymphedema experts. It involves several weeks of skin and nail care, manual lymphedema therapy, therapeutic exercises, compression wrapping, and the wearing of compression garments, followed by a long-term maintenance program. Patients should expect about a 60% reduction in lymphedema volume at the point at

which treatment reaches its maximum benefits. The response in most studies was maintained for three years. The absolute contraindications to prescribing CDPT include skin infections, active breast cancer, congestive heart failure, or a blood clot in the deep veins of the arm. An overview of the components of a CDPT program is presented below.

Graded-compression garments designed to generate greater pressure in the hand and wrist than in the upper arm, promoting fluid mobilization and redistribution, are the mainstay of lymphedema therapy. Their use results in a substantial reduction in arm edema in 34% of patients at the end of two months. It is important that the garment fit well (no constricting bands) and not increase swelling in any area of the arm. Garments should be replaced every four to six months or when they begin to lose their elasticity. The second component involves a specific type of massage, manual lymphedema therapy (MLT) offered by specially trained physical therapists. Light pressure is applied to mobilize edema fluid from distal to proximal areas. The third component involves external compression therapy, which employs bandage wraps with inelastic material or intermittent pneumatic compression (also called sequential pneumatic compression). A pneumatic compression device designed with a plastic sleeve or stocking is intermittently inflated over the affected limb. Resistant limbs frequently respond to this treatment. After external compression therapy is completed, a formfitting low-elastic sleeve is applied. This mode of therapy should be limited to cases that do not respond readily to manual massage and the application of graded pressure garments since there is limited research to establish its benefits or to determine the optimum pressure to be applied. It

should also be noted that some researchers suggest that long-term use of external compression therapy may actually injure the dilated lymphatic vessels. During the program, the patient is educated on the proper skin care, and weight reduction programs are instituted.

Little progress has been made in lymphedema treatment in recent years, but some active areas of current lymphedema research include low-energy laser therapy to the axilla.

Early reports indicate that approximately one-third of patients will have > 200 mL (a little over 6 ounces) of reduction in arm volume. Presently, this approach remains investigational and is not routinely used except in research centers. Other centers are performing lymphatic microsurgery or microsurgical lymph node transplantation, which involves surgical maneuvers to drain lymph fluid back into blood vessels. Because these approaches deal with a low-pressure, low-flow system, favorable long-term results remain elusive. An area of research which is exciting, but in its infancy, is the use of biotechnology and genetic engineering to stimulate lymphatic angiogenesis (growth of new lymph vessels). So far, encouraging results have been seen in laboratory mice. And finally, a recently started clinical trial is in progress to assess whether or not a combination of education, the use of light arm weights with exercise, the wearing of a light compression sleeve combined with vigorous activity, and regular breathing exercises reduces the risk of lymphedema.

In conclusion, the treatment of lymphedema requires long-term control of swelling and must be constantly monitored. Progress with treatment is best monitored by frequently

recording circumferential measurements at standard distances and arm volume measurements using the water displacement method. Please contact me by telephone at (714) 997-4300 or through my website at [www.orangeplasticsurgeons.com](http://www.orangeplasticsurgeons.com) and I will be happy to provide you with instructions for making an affordable, dependable device of plastic PVC pipes for use at home. Water displacement techniques detect subtle changes in arm volume of as little as 1%.

Websites you may find beneficial:

1. National Cancer Institute ([www.nci.nih.gov](http://www.nci.nih.gov))
2. People Living With Cancer: The Official Patient Information Website of the American Society of Clinical Oncology ([www.cancer.net/portal/site/patient](http://www.cancer.net/portal/site/patient))
3. National Comprehensive Network ([www.nccn.com](http://www.nccn.com))
4. American Cancer Society ([www.cancer.org](http://www.cancer.org))
5. National Lymphedema Network ([www.lymphnet.org](http://www.lymphnet.org))

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