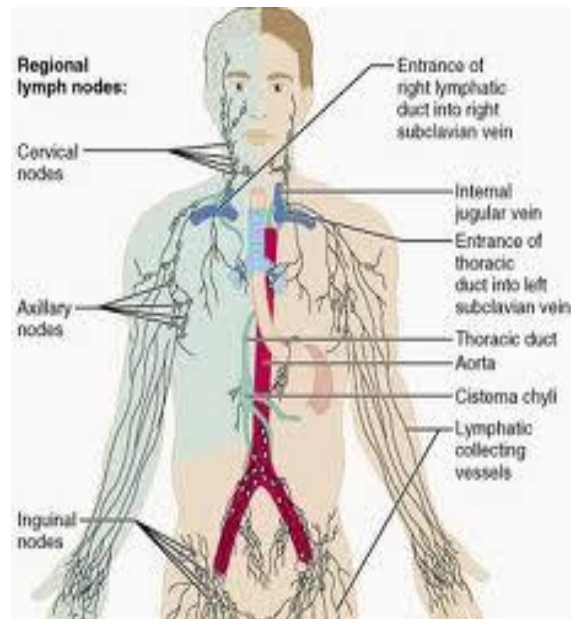


## The Role of Complete Decongestive Therapy in Breast Cancer Related Lymphedema

Lymphedema is considered one of the most distressing and debilitating complications of breast cancer treatment and affects at least three million Americans. The underlying problem of lymphedema is a lymphatic dysfunction, resulting in abnormal accumulation of water and proteins primarily in the subcutaneous tissues, which can cause the onset of visible and palpable swelling.



This condition underlines the crucial importance of a functioning lymphatic system, which returns water, protein and lipids from the interstitial spaces back to the venous bloodstream via the venous angles, located bilaterally on the subclavian-internal jugular vein junctions.

Lymphedema most often affects the extremities and while generally only one arm or leg is involved, sometimes both arms and legs may be swollen. In addition to the extremities lymphedema may also present in the trunk, abdomen, head and neck, external genitalia and inner organs.

Estimated numbers on the incident of lymphedema reported in the literature are inconsistent; 140-250 million cases of lymphedema are estimated to exist worldwide. Most individuals in developed countries develop lymphedema following surgery and/or radiation for various cancers. In the United States the highest incidence is observed following breast cancer surgery (mastectomy, lumpectomy), particularly among those individuals who undergo radiation therapy following the removal of axillary lymph nodes.

Breast cancer is the leading type of cancer among women in the United States. Based on the National Cancer Institute's cancer statistics report (2005-2007), 12% of women (or one out of eight) in the United States will develop breast cancer at some point in their lives. A women's

chance of developing breast cancer increases with age and the majority of breast cancer cases occurs in women over 50 years of age. Younger women tend to have more aggressive forms of breast cancer, which may be the reason why survival rates among younger women are lower.



Removal and/or radiation of axillary lymph nodes in the treatment of breast cancer can result in a disruption of the normal flow of lymph from the upper extremity and upper trunk quadrant, which represent the tributary areas for the axillary lymph nodes. This blockage can cause accumulation of lymph fluid in these areas, resulting in secondary lymphedema.

There is no consistency in reports concerning incidence and prevalence of lymphedema following breast cancer surgery. According to the National Cancer Institute, the overall incidence of upper extremity lymphedema can range from 8% to 56% two years following the surgery.



Post-mastectomy secondary upper extremity lymphedema may occur immediately following surgery, within a few months, a couple of years, or 20 or more years after surgery. Its onset is gradual in some individuals and sudden in others. In general it can be said that studies with longer post-operative follow-up show higher incidence and more severe swelling.

Lymphedema presents one of the most serious complications of breast cancer treatment because of its long-term physical and psycho-social consequences for affected individuals. Its cosmetic deformities are difficult to hide and if left untreated, the swelling continues to progress. Complications, such as [cellulitis](#) can occur frequently especially in untreated or mistreated cases of lymphedema.

Because of the progressive nature of lymphedema, it is of paramount importance to initiate treatment as soon as possible. While there is no cure for lymphedema, the condition of lymphedema can be effectively controlled and maintained with treatment focusing on reducing the swelling and controlling pain.

Complete decongestive therapy (CDT) represents the international gold standard for lymphedema therapy; it is a low-cost, highly effective and non-invasive modality specifically geared towards the reduction and management of lymphedematous and related swellings. CDT is endorsed by all major national and international societies concerned with the management of lymphedema as the standard of care and consists of a combination of various treatment modalities, to include [manual lymphatic drainage](#) (MLD), [compression therapy](#), [decongestive exercises](#) and [skin care](#).