



### What Is Lymphedema?

The lymph system is a one-way transportation system, draining proteins, excess waste, bacteria and toxins from tissues. As lymph fluid travels through a network from smaller-to-larger lymph vessels it passes through the lymph nodes where it is purified of foreign matter, including harmful bacteria and viruses. Thus protein and excess fluids are removed from tissues, cleaned and returned to the vascular system. In adults, one to two liters of lymph is pumped back into circulation through the thoracic duct or right lymphatic duct daily. The lymphatic system then has two critical functions: maintaining immunologic functions and working with the blood vessels to maintain tissue-fluid balance.

### What Causes Lymphedema?

Lymphedema appears congenitally or by damage to the lymph system from infection, tumor, surgery, radiation, venous insufficiency, burns, or accidental trauma. Resultant blockage of venous or lymphatic vessels causes an accumulation of fluid (edema) to occur. If the fluid build-up exceeds the lymphatic transport capacity, this protein-rich fluid continues to accumulate causing tissues in the extremity to swell.

Left untreated, this overload of fluid deprives the tissue of oxygen and depresses macrophage function, causing wounds to heal more slowly. It can also lead to chronic inflammation and fibrosis. The accumulation of stagnant protein-rich fluid is a fertile environment for the growth of bacteria. Resultant infections can become so severe that hospitalization is required. In extreme cases, elephantiasis and life-threatening malignant degeneration may develop.

In the United States, lymphedema frequently follows surgical removal of the lymph nodes and radiation treatment for cancer. It causes chronic swelling in the extremities and can be disfiguring and painful. Some lymphedema patients lose almost all use of their affected limb, either functionally or secondary to pain, and are unable to carry out normal activities. Many see themselves as unsightly becoming depressed and withdrawn from society.

The disorder is relatively common. Cancer patients are particularly susceptible to lymphedema. While there is no true data on rate of incidence available, a recent report on the disease in *ONCOLOGY* (September '94) contained the following prediction. Boris,





Weindorf, Lasinski et.al. (1994) estimated that of the 1 in 9 US women who will eventually develop breast cancer, 3,300,000 will develop lymphedema.

In the United States lymphedema has often been viewed as a tradeoff, something the patient must learn to live with after treatment of cancer or after having survived some other trauma to the body.

Due to a widespread lack of knowledge, the disease has often been left untreated.

The good news is that lymphedema can be treated effectively with Lymphedema Sequential Compression Pumps, Reid Sleeves, Jovi Pack, CircAid, or compression garments.

### Indications of Lymphedema

- Lymphedema post cancer treatment
- Congenital lymphedema
- Venous insufficiency
- Venous disease
- Non-healing wounds
- Edema post trauma: sprains, strains, etc.
- Edema post surgery
- Burns

### Contraindications

- Acute deep venous thrombosis
- Cellulitis
- Acute congestive heart failure

### Treatments for Lymphedema

#### Compression Pumps:

The compression pump which is worn with a sleeve around the affected limb, creates a gradient pressure that presses the lymph-fluid in a proximal direction.

There are several sequential and gradient sequential compression pumps available, which we can provide.

At K Medical, we will help you, the physician, choose the right pump for your patient, to treat lymphedema as well as venous disease, edema and swelling.





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