

## Complications of Lymphedema

Lymphedema is caused by a blockage or dysfunction of the lymphatic system, causing a disruption of the normal flow of lymph fluid, which may result in swelling affecting various parts of the body.

Lymphedema most commonly presents in soft tissues of arms and legs; however, it may also affect the trunk, abdomen, head and neck, exterior genitalia and inner organs.



Individuals affected by lymphedema may encounter a number of problems, which can be either attributed to other pathologies (comorbidities) that may be present in addition to existing lymphedema and further exacerbate its symptoms, or secondary complications which may develop as a result of stagnated lymphatic fluid. Secondary complications are common to lymphedema, especially if the swelling is left untreated, and often contribute to the progression of this common and serious disorder.

### **Comorbidities that may aggravate existing lymphedema**

The presence of certain comorbidities may worsen or aggravate the symptoms associated with lymphedema, or may present an added obstacle in the treatment for lymphedema. Additional fluid retention associated with cardiac or venous insufficiencies frequently cause an increase in swelling, especially in lymphedema affecting the lower extremities. Certain orthopedic comorbidities limiting the mobility of joints, or affecting musculoskeletal activity may negatively impact the decongestive exercise regimen, which is an imperative part in the treatment and management of lymphedema. To successfully treat lymphedema, it is necessary to address the symptoms associated with comorbidities and to incorporate appropriate modifications to the treatment protocol.

### **Complications resulting from bacterial or fungal infections**

The lymphatic system plays an important role in the body's immune defense; any disruption in lymph flow may result in reduced immune surveillance. Lymphedema is defined as a high-protein swelling; the accumulation of water and protein molecules creates an ideal breeding environment for pathogens in the affected tissues. This often results in a high susceptibility to infections in lymphedematous tissues.

[Cellulitis](#), an acute infection of the skin and subcutis, is a common complication associated with lymphedema. Cellulitis is characterized by fever, diffuse redness, tenderness, pain and edema, and is treated with [antibiotics](#). Lymphedema patients suffering from recurring episodes of cellulitis may be placed on prophylactic antibacterial therapy and be required to use antibiotics as a preventative.



Fungal infections are also common in lymphedema and most often affect the skin and nails in lower extremities. In order to avoid spreading, treatment of any fungal infection precedes lymphedema therapy.

### **Complications on the skin**

When lymphedema remains untreated, protein continues to accumulate and contributes to a progressive hardening of the soft tissues, known as [lymphostatic fibrosis](#). This hardening is caused by a proliferation of connective tissue cells and can be compared to scar tissue. This hardening of the soft tissue can be successfully reversed with appropriate lymphedema [treatment](#).

Other skin complications include lymphatic cysts, blister-like formations on the surface of the skin, which develop due to lymphatic blockage. Lymphatic cysts contain lymph fluid and can easily break open, thus presenting an entryway for pathogens. It is recommended to cover lymphatic cysts with sterile gauze to avoid damage and possible secondary infections.

### **Lymphedema and the risk of malignancies**

Angiosarcoma is a rare form of a malignant tumor that may develop as a result of long-standing lymphedema. It may involve the upper or lower extremities and has a tendency to metastasize quickly. Angiosarcoma initially appears as a bruise-like discoloration on the surface of the skin, progressing into ulcerations and tissue necrosis involving the skin and surrounding soft tissues.

### **Psycho-social implications**

Lymphedema is disfiguring and often painful and disabling. It can negatively impact the emotional, vocational, recreational and financial aspects of the patient's life. Most individuals affected by lymphedema are able to continue a normal life; however, some patients experience depression, anxiety, and impairments related to their intimate, work, and social relationships.

While lymphedema may be caused by developmental abnormalities of the lymphatic system ([primary lymphedema](#)), the highest incidence of lymphedema in the United States is observed following cancer surgery including the removal and/or radiation of lymph nodes ([secondary lymphedema](#)). The fact of being diagnosed with cancer and the often sterile and impersonal nature of cancer care can be devastating and exact an additional toll on the patient's emotional well-being.

Group and individual counseling by the lymphedema therapist or physician can be helpful to patients coping with lymphedema. Counseling should include specific information about preventive measures, the role of diet and exercise, advice for selecting comfortable and concealing clothing, and emotional support.

## **Risk reduction**

Lymphedema caused by surgery and/or radiation may occur directly after or months, even years following the procedure. Certain activities and situations may trigger the onset of lymphedema, exacerbate the symptoms of existing lymphedema, or cause infections in the affected tissues.

Caregivers, to include physicians, lymphedema therapists and nurses play a crucial role in the prevention of complications associated with lymphedema by educating the patient about signs and symptoms of acute inflammatory episodes and [risk reduction](#) guidelines.

Additional Resources:

[Mayo Clinic – Complications of Lymphedema](#)

[U.S. National Library of Medicine: Incidence and Complications of Lymphedema](#)

[The Psycho-Social Impact of Lymphedema: S. Ridner, Ph.D.](#)

[Breastcancer.org: How to avoid Lymphedema](#)

[E-Medicine: Treatment of Lymphedema](#)

[National Cancer Institute: Treatment of Lymphedema](#)

[National Lymphedema Network: What is Lymphedema](#)

[National Lymphedema Network: Treatment of Lymphedema](#)