

## Infections Associated with Lymphedema

There are numerous reasons why patients with lymphedema are at an increased risk for infections. Normally the body is protected by a fine acid layer on the surface of the skin, which prevents bacteria and other pathogens from entering. However, the skin in lymphedema tends to be dry and scaly, causing a disruption of the protective acid layer, or if deepened skin folds are present, moisture collecting in these folds may create a breeding ground for bacteria. The fact that the swelling present in lymphedema causes a disruption of the local immune defense in the affected tissues further complicates this situation. Once bacteria are able to enter lymphedematous tissue, protein and accumulated waste products present in lymphedema provide an ideal breeding ground for infection. Due to the swelling, even in minimal lymphedema, the body's natural defense cells may not be able to fight these invaders sufficiently.

The initial onset of lymphedema, as well as the worsening of present lymphedema is frequently associated with the occurrence of infections. It is thought that these infections result in increased fibrosis of lymph vessels and lymph nodes, thus further complicating lymphedema.

Common infections include:

### Cellulitis

This is an acute infection of the skin and deeper tissues characterized by painful swelling, redness of the skin, and heat. Cellulitis is frequently caused by streptococcus (sometimes staphylococcus) bacteria, which enter the tissues through the skin via cuts, abrasions or breaks. These bacteria are present in the normal skin flora and do not cause an infection while on the skin's outer surface.



Cellulitis may become life threatening when it spreads via the lymphatic or blood system to vital organs and other body parts (Lymphangitis).

## **Erysipelas**

This acute dermal infection is also caused by streptococcus bacteria and affects the skin and tissues located just underneath the skin, to include lymphatic vessels and nodes.



Erysipelas is one of the most common infections in lymphedema and tends to recur. Typical for this infection is its rapid onset accompanied by fiery red edema with raised and distinct margins in the affected area, and its rapid spreading through superficial lymph vessels, which contributes to the formation of fibrosis in the affected tissues.

Typical symptoms include swelling, redness, fever, headache, sometimes vomiting and chills.

## **Lymphangitis**

Lymphangitis is an infection of the lymphatic vessels and most often results from an acute streptococcal infection of the skin, which is often associated with cellulitis. Less frequently it results from a staphylococcal infection. The infection may spread to the blood stream causing a potentially life threatening emergency. Symptoms include red streaks from the infected area to the armpit or groin, fever, pain, headache and enlarged lymph nodes.



## **What to Do in Case of an Infection**

Do not wait, and do not ignore any sign of an infection!

Seek immediate medical treatment to prevent further complications!

Individuals who are at a high risk for lymphedema must remain alert to the signs of infection as these symptoms are often the first signs of the onset of lymphedema. In such cases, quick

intervention may help to delay the onset of lymphedema as well as prevent the infection. The problem may aggravate and become potentially life threatening if timely care is not taken.

Treatment: Antibiotics should be administered as soon as possible; penicillin-based medications are used either orally, if no systemic infection is present, or by intra-venous application. Oral penicillin is administered for a minimum of 14 days, or until the inflammation has been resolved. In some patients it may take one or two months of therapy for symptoms to completely resolve. Other antibiotics may be used in cases of penicillin allergy (clindamycin or claritromycin). In severe cases hospitalization may be necessary.

Lymphedema patients with a history of recurrent infections should have a two-week supply of antibiotics on hand, particularly while traveling.

Manual Lymph Drainage should be suspended during episodes of acute infection and fever. In order to prevent excessive swelling, light compression should be applied during these episodes if tolerated.

**Added November 2, 2010:** [Consensus Document of the British Lymphology Society on the Management of Cellulitis in Lymphedema](#)