Lymphedema: What you need to know
Disclaimer
This is general information developed by The Ottawa Hospital. It is not intended to replace the advice of a qualified health-care provider. Please consult your own personal physician who will be able to determine if this information is appropriate for your specific situation.

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This guide has been created to help you understand what lymphedema is, how it is caused and how to manage it. Lymphedema affects people with cancer differently. For some it is not a problem, for some it comes and goes and for others it can be a significant concern. It is important to remember that lymphedema can be managed and this booklet is designed to educate you on how to do this.

The information and exercises in this booklet are general; you should discuss any special concerns with your physiotherapist and/or doctor.
The lymphatic system

Though it is not essential to know everything about the lymphatic system, an overview will help to understand the condition. The lymphatic system is a complex system of lymph vessels, lymph nodes and lymph tissue that is found all over the body. The lymph nodes are found in groups in the head, neck, armpits, groin and deep in the belly.

The role of the lymphatic system is to remove toxins from the tissues in the body and to help fight infection. It is a very important part of the immune system.

The vessels contain a clear fluid known as ‘lymph fluid’. Lymph fluid is made up of white blood cells and waste products. The lymph fluid is collected in tiny vessels and then passes into the lymph nodes where it is filtered and cleaned of germs and bacteria. The lymph fluid then passes into larger collector vessels. Finally the fluid is returned into the main circulatory system via the heart.

What is lymphedema?

Lymphedema is swelling caused when there is an excess amount of lymph fluid that collects in areas of the body. This condition can develop when lymph vessels are damaged and there is more lymph fluid than the damaged lymph nodes can handle. This excess fluid can result in the swelling of the body part closest to the area affected by the cancer and its treatments.

When lymph nodes are damaged or not working well, this can cause an increase in pressure on the lymph vessels. The vessels then enlarge and lose their ability to stretch. Over time the lymph vessels lose their ability to transport lymph fluid and then lymph collects in the surrounding tissue.
What causes lymphedema?

Primary lymphedema
This describes the type of lymphedema that is caused by an abnormal lymph system from the time of birth. There can be swelling in any part of the body.

Secondary lymphedema
For people with cancer, the most common type of lymphedema is known as secondary lymphedema. Disease, biopsy, surgery, radiation, infection and/or trauma increase the risk for developing secondary lymphedema. Lymphedema can develop after treatment or even years later.

- **Surgery:** Many cancer related surgeries require removal of some or all lymph nodes affected by disease. This can increase the risk for developing lymphedema.
- **Radiation Therapy:** Radiation is a standard therapy for many types of cancer. Radiation can cause scar tissue to form and the scarring can affect the normal flow of lymph fluid through the lymph nodes and vessels.
- **Infection/Trauma:** Lymphedema can also develop as a result of a local infection. Lymph fluid is rich in protein. Bacteria can easily grow in this type of fluid. This means that areas of lymphedema may be more prone to infection. To decrease your chances of infection protect yourself from skin trauma, bug bites, burns, punctures and scratches.

What are the signs and symptoms?
Signs and symptoms to watch out for are:

✔ tightness of the skin
✔ trouble fitting into clothes or jewellery
✔ visible swelling, that can come and go
✓ tingling, aching or mild discomfort
✓ a feeling of heaviness in the limb.

⚠ Symptoms needing immediate attention
✓ Pain along with red, warm skin may be a sign of infection and should be assessed by a physician urgently.
✓ Sudden increases in swelling should be checked by a physician.
✓ Patients with a history of venous or arterial disease should have an ultrasound to rule out a deep vein thrombosis (blood clot).
✓ Patients with congestive heart failure or renal failure should be closely monitored to avoid moving too much fluid too quickly.

Lymphedema risk reduction practices

Skin care/infection/injury
• Decreasing your risk of infection is a very important factor in reducing the risk of lymphedema. If you notice an area of redness, warmth, tenderness and you are feeling unwell or have a fever this may be a condition known as cellulitis. It is important that this be assessed by a health care professional as antibiotic therapy may be necessary.
• Practice good skin care. Wear protection (such as gloves) when gardening or cleaning. Use care when trimming nails or shaving.
• If a skin injury occurs on the affected limb—clean your skin and use an antibiotic ointment to decrease the risk of infection.
**Activity/daily life**

- When starting a new activity, build up the time and amount of exercise gradually. Exercise has been shown to be of benefit in the treatment of lymphedema. When starting a new exercise regime it is important to start slowly and steadily.
- Take rests during activity to allow the limb to return to its optimum size.
- Maintain a healthy body weight because there is a close link with lymphedema and being overweight.
- Decrease your exposure to extremes of temperature including saunas and water temperature above 102 (degrees F).

**Lower limb lymphedema avoidance practices**

- Avoid sitting or standing for long periods of time.
- Avoid crossing the legs.
- Wear well fitting footwear and socks.

**Treatment for lymphedema**

Treatment planning for lymphedema varies depending on the cause. The preferred treatment is called “Complex Decongestive Therapy” (CDT), which is a form of treatment made up of a mixture of approaches.

The basic principles are:
1. Skin care (as discussed earlier)
2. Manual lymphatic drainage (MLD/massage)
3. Compression garments (and/or bandaging)
4. Exercise/Maintaining a healthy weight
5. Self-management

**Manual lymphatic drainage (MLD)**

MLD is a form of massage that promotes the movement of lymph fluid. This requires special training as the technique must be performed correctly.
Some of the basic techniques can be taught to patients and or family members as part of their ongoing management.

**Compression**
Compression is applied to provide pressure to the tissue. This will:

- ✓ Reduce lymph fluid returning to the affected limb
- ✓ Reduce production of new lymph fluid
- ✓ Increase re-absorption of lymph fluid
- ✓ Improve the efficiency of the muscle/joint pumps

**Compression bandaging**
The bandages used are called “short-stretch”. They are usually applied over a layer of foam to even out the pressure and prevent ridges forming in the tissue. Bandages may be used in the early phase of treatment to promote a reduction in swelling.

**Compression garments**
Once a limb is thought to be at its best size then compression garments may be ordered. These may be worn during the day and removed at night.

- • If you already have lymphedema it would be advisable to wear your compression garment when flying.
- • Compression garments should be well fitting.
- • Compression garments should be worn during exercise or heavy activity.

There are night-time compression garments available and may be recommended by your therapist.
**Exercise**

Exercise is an accepted and important part in managing lymphedema. Exercise can have a positive effect on the lymphatic system. Muscle contractions and deep breathing help to increase lymphatic flow. Exercise also assists you to maintain a healthy body weight, which has a positive effect on existing swelling.

**Lymph drainage exercise for the arm**

**1. Breathing exercises**

**Abdominal breathing**

Lie on your back or sit in a comfortable chair with your hands resting on your stomach. As you breathe IN feel your stomach rise. Breathe OUT slowly through your mouth.

**2. Neck exercises**

**Neck rotation**

Turn your head slowly to the right as you inhale and count to five. Return to the center as you exhale. Repeat to the left.

**Head tilt**

Gently move your right ear toward your right shoulder, hold for five seconds, then, slowly bring your head back to the centre. Repeat on the other side.
Shoulder shrug
Lift both shoulders towards your ears as you inhale, exhale and return to relaxed position. Next, push your shoulders down as far as possible while inhaling, exhale and return to relaxed position.

3. Shoulder exercises
Shoulder rolls
Roll your shoulders backward in a smooth continuous circle.

Shoulder blade squeeze
Bend elbows to 90 degrees, keeping them close to your body, pulling them back toward the centre of your body, trying to squeeze the shoulder blades together.

4. Arm exercises
Climbing a ladder
Reach one hand up and pull one hand to the chest so that one arm is fully extended and one arm is close to the body, hold for a moment then reverse.
**Hug yourself**
Stretch your arms out to the side, then, hug them to the opposite shoulder. Hold for five seconds.

**Arm circles**
Stretch your arms straight out to each side and make small circles in the air, rotating your shoulders.

**Rowing**
Reach forward with both arms, then, pull your arms back as though you’re pinching something between your shoulder blades. Hold for five seconds.

**Prayer**
Press your hands against each other in front of your chest with elbows bent (in prayer like position). Hold for five seconds while exhaling.

**Elbow bend**
Lying on your back, bring your hand towards your shoulder and return arm back to the side, repeat.
**Lymph drainage exercise for the leg**

1. **Leg exercises**

   **Hip flexion**
   Lie with both legs straight. Slide one leg up by bending the knee and slide it back down. Repeat with the other leg. Use good breathing throughout.

   ![Hip flexion image]

   **Leg falls**
   Bend both knees and keep your feet flat on the floor. Keep one leg in place and slowly lower your other leg out to the side. Bring your leg back to the centre. Repeat with the other leg.

   ![Leg falls image]

4. **Ankle exercises**

   **Ankle pumps**
   Move your foot up and hold for three seconds, then, move your foot down and hold for three seconds. Do this ten times. Repeat with the other foot.

   ![Ankle pumps image]

Do each exercise three to four times, _____ times per day. Wear your bandages or your compression sleeve during the exercises.
You may end your session with more abdominal breathing. It may also be a good idea to elevate your arm or leg while relaxing for a few minutes.

**Self-management**

**Self-bandaging**

Lymphedema bandaging is a multi-layered system of short stretch, non-elastic pure cotton bandages, which are applied over padding/foam to create compression around the involved area.

Your lymphedema therapist may teach you how to apply bandaging for compression.

**Self-massage**

- Self-massage is a series of strokes that can be done at home to assist with ongoing self-care.
- Massage should be done at least one to two times daily.
- *Please ask your lymphedema therapist to teach you how to self-massage.*

**Self-monitoring**

- Monitoring bony landmarks like hands, wrists, elbows, knees or ankles for change.
- Your therapist can teach you some consistent points to measure if it would assist you to be aware of change.
Weight management

• Eating a healthy diet.
• Getting enough exercise.

**Do not forget...**

Lymphedema is a treatable condition that can be managed with the right combination of education and treatment. Every person can be affected differently; therefore every person’s treatment is individual.

Finding a therapist

Therapists are specially trained to treat lymphedema. They can be RNs, massage therapists or physiotherapists. However they must be designated as a Certified Lymphedema Therapist. These professionals are available here in the hospital or in the community.

If you have any concerns please consult with your health-care provider.

**Links to community resources**

• National Lymphedema Network
  www.lymphnet.org
• Lymphovenous Association of Ontario
  www.lymphontario.org
• Lymphedema Association of Quebec