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What is Lymphedema?

Lymphedema is a condition in which fluid and protein accumulate in the extravascular interstitial spaces of a limb. This condition is the most chronic complication after dissection of lymph nodes. Secondary lymphedema can cause pain, discomfort, decreased mobility, cellulitis and lymphangitis. Lymphedema is a chronic condition that is not curable at present. ¹

What is the Role of the Lymphatic System?

The lymphatic system is a group of small organs (nodes) and vessels through which lymph fluid flows. The lymphatic system functions in cooperation with the circulatory system, which carries blood throughout the body. Impurities are removed from the circulatory system by the lymphatics and are broken down by cells important in fighting bacteria and viruses. The lymphatic system also plays a role in maintaining fluid balance throughout the body. ²

Components of the System ²

1. Initial Lymphatics
   - Beginning point of system
   - Outer bits of the vessel walls are attached to all surrounding tissues
   - Pressure changes are required to function

2. Collecting Vessels
   - Receive drainage from the initial lymphatics
   - Contain one-way valves which keep the fluid flowing in one direction

3. Lymph Nodes
   - Filtering station for cleansing of lymphatic fluid
   - Centres for growth and storage of ‘lymphocytes’ (cell housekeepers)
   - Slow down the fluid and protein transport

4. Major Lymphatic Ducts
   - Originating in the cisterna chyli in the tummy region, the thoracic duct is the largest lymph vessel
   - Right lymphatic duct is at the root of the neck

Classification ³,⁴

- Primary: the result of a congenital abnormality of the lymphatic system
- Secondary: results from damage to the lymph vessels or nodes.
What Causes Secondary Lymphedema?

Secondary lymphedema commonly occurs when there is an infection, or trauma that interrupts the normal function of the lymphatic pathways. It often occurs following surgery and radiation treatment for cancer. The surgical removal of lymph nodes in the areas adjacent to a tumour may block the flow of lymph through the system. Radiation therapy may damage otherwise healthy lymph nodes causing scar tissue to form and again interrupting the flow of lymph through the system.

Staging

- Stage 0: Risk Factors
- Stage 1: Spontaneously Reversible (goes down overnight)
- Stage 2: Spontaneously Irreversible
- Stage 3: Elephantiasis

What is not Lymphedema!  

<table>
<thead>
<tr>
<th>Not Lymphedema</th>
<th>Description</th>
<th>Image</th>
</tr>
</thead>
<tbody>
<tr>
<td>Congestive Heart Failure</td>
<td>- Bilateral swelling of ankles</td>
<td><img src="www.sciencephoto.com" alt="Image" /></td>
</tr>
<tr>
<td></td>
<td>- Pitting</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Changing from one day to another</td>
<td></td>
</tr>
<tr>
<td>Chronic Venous Insufficiency</td>
<td>- Chronic bilateral changes of legs and ankles</td>
<td><img src="www.angiologist.com" alt="Image" /></td>
</tr>
<tr>
<td></td>
<td>- The skin may react with varicose eczema, local inflammation, discoloration, thickening, and an increased risk of ulcers and cellulitis</td>
<td></td>
</tr>
<tr>
<td>Lipedema</td>
<td>- Inherited</td>
<td><img src="www.lymphedema-therapy.com" alt="Image" /></td>
</tr>
<tr>
<td></td>
<td>- It occurs almost exclusively in women</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- It involves the excess deposit of fat cells, bilateral and symmetrical from the waist to above the ankles</td>
<td></td>
</tr>
</tbody>
</table>
**Clients at Risk**

The following factors may put a client at risk of developing lymphedema. It may also predict progression, severity and outcome. 3,6,7,8,9,10

<table>
<thead>
<tr>
<th>Upper Extremity Lymphedema</th>
<th>Lower Extremity Lymphedema</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surgery with axillary node dissection</td>
<td>Surgery with inguinal node dissection</td>
</tr>
<tr>
<td>Scar formation</td>
<td>Postoperative pelvic radiation</td>
</tr>
<tr>
<td>Radiation to breast, axillary, internal mammary or subclavicular nodes</td>
<td>Infection</td>
</tr>
<tr>
<td>Drain and/or wound complications infection</td>
<td>Obesity</td>
</tr>
<tr>
<td>Axillary web syndrome</td>
<td>Varicose vein stripping</td>
</tr>
<tr>
<td>Seroma formation</td>
<td>Genetic predisposition</td>
</tr>
<tr>
<td>Advanced cancer</td>
<td>Advanced cancer</td>
</tr>
<tr>
<td>Obesity</td>
<td>Intra pelvic or intra abdominal tumours</td>
</tr>
<tr>
<td>Congenital predisposition</td>
<td>Orthopaedic surgery</td>
</tr>
<tr>
<td>Trauma to the at risk arm</td>
<td>Poor nutrition</td>
</tr>
<tr>
<td>Chronic skin disorders and inflammation</td>
<td>Thrombophlebitis</td>
</tr>
<tr>
<td>Hypertension</td>
<td>Chronic skin disorders and inflammation</td>
</tr>
<tr>
<td>Taxane chemotherapy</td>
<td>Immobilisation, prolonged limb dependency</td>
</tr>
<tr>
<td>Air travel</td>
<td>Air travel</td>
</tr>
</tbody>
</table>


**Tips to Reduce the Risk of Lymphedema after Cancer Treatments** 6,7,8,9,10

Early diagnosis results in more effective treatment, possible prevention, and less severe lymphedema.

The following may help reduce a clients’ risk of lymphedema:

- Taking care of nails and skin, i.e., hangnails and cuts cause trauma
- Maintaining optimal body weight (BMI <30 kg/m²)
- Eating a balanced diet
- Avoiding trauma to affected area
- Avoiding tight clothing and jewellery
- Avoiding exposure to extreme cold and heat
- Avoiding blood pressure test in affected arm
- Using sunscreen and bug repellent
- Wearing lymphedema garments
- Exercising (initiate exercise as soon as possible)
- Elevating limb
- Wearing comfortable and supportive shoes
Lymphedema Assessment

There are several types of assessments for lymphedema that be used in conjunction with each other. They are: medical, specialist, psychosocial and physical. This manual focuses on physical assessment, but the following briefly describes the others mentioned.

Medical Assessment

In some situations a medical assessment may benefit in the diagnosis of lymphedema. The following is a list of diagnostic tools:

- Ultrasound: The diagnostic or therapeutic use of ultrasound and especially a non-invasive technique involving the formation of a two-dimensional image used for the examination and measurement of internal body structures and the detection of bodily abnormalities. **

- Positron Emission Topography (PET): Radioactive glucose is injected through IV, and then the scanner rotates around the body and highlights areas where metabolism rates are higher. Tumours show up brighter because they are more active and take up more glucose than normal cells. **

- Doppler Ultrasound: Ultrasound that utilizes the Doppler effect to measure movement or flow in the body and especially blood flow.*

- Lymphoscintigraphy: Medical imaging that provides pictures of the lymphatic system.*

- Magnetic Resonance Imaging (MRI): A non-invasive diagnostic technique that produces computerized images of internal body tissues and is based on nuclear magnetic resonance of atoms within the body induced by the application of radio waves.*

- Bioimpedance: A non-invasive method of determining the composition of body tissues to evaluate the presence of body fluids such as lymph*

  * Taken directly from www.lymphnotes.com
  ** Taken directly from www.merriam-webster.com/medlineplus

Possible Reasons for a Medical Referral

- Swelling of head, neck, trunk
- Medical conditions: arterial disease, diabetes, venous insufficiency, chronic skin conditions
- Sudden increase in pain
- Neuropathy
- Wounds
- Cellulitis
**Physical Assessment**

The following section explains the physical assessment of lymphedema.

**Subjective Measures**

- Client Symptoms: Heaviness, tightness, swelling and pain
- Comments on cord like structure (Axillary Web Syndrome or Lymphatic Cording)

**Objective Measures**

- Stemmer’s Sign: Dorsum skin pinch of second finger at the metacarple-phaligeal joint. If the skin does not go back down it can be a sign of dehydration and/or lymphedema
- Palpation: Pitting, fibrosis, loss of boney contours and skin mobility
- Infection (cellulitis): Redness of the skin, swelling, warmth, pain and tenderness, drainage or leakage, tender lymph nodes, fever
- Temperature – Warm can mean cellulitis or deep vein thrombosis
- Peripheral Refill – Blanching the tip of the finger and watching for the colour to return helps to determine if compression is to tight

**Limb Volume Measurements**

Lymphedema is considered evident if the volume of the swollen limb is 10% greater than the unaffected limb. Keep in mind the dominant arm of a client can be up to 2 cm greater and a volume 8-9% higher than the opposite arm.

**Limb Volume Measurement Methods**

<table>
<thead>
<tr>
<th>Anatomical Landmark Lymphedema Measurement Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Volumes calculated from anatomic landmarks are reliable, valid and more accurate than those obtained from circumferential measurements based on distance from fingertips. 15</td>
</tr>
<tr>
<td>A difference in two centimetres from baseline to follow-up warrants the start of a lymphedema program.</td>
</tr>
<tr>
<td>(measured in centimetres)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Arm</th>
<th>MCPs</th>
<th>Wrist</th>
<th>10cm Below Lat. Epicondyle</th>
<th>15cm Above Lat. Epicondyle</th>
</tr>
</thead>
<tbody>
<tr>
<td>Left</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Right</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Leg</td>
<td>MTP</td>
<td>Ankle</td>
<td>10cm Below Lat. Femoral Condyle</td>
<td>15cm Above Lat. Femoral Condyle</td>
</tr>
<tr>
<td>Left</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Right</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Functional Assessment

<table>
<thead>
<tr>
<th>Upper Limb</th>
<th>Lower Limb</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ability to fasten buttons</td>
<td>Ability to get up from sitting or lying</td>
</tr>
<tr>
<td>Ability to put on and off garment</td>
<td>Ability to walk</td>
</tr>
<tr>
<td>or bandages</td>
<td>Ability to lift affected leg</td>
</tr>
<tr>
<td>Effects on activities of daily</td>
<td>Effects on Activities of daily living</td>
</tr>
<tr>
<td>living</td>
<td>Use of aids</td>
</tr>
<tr>
<td>Use of aids</td>
<td>Ability to put on or take off footwear</td>
</tr>
</tbody>
</table>

Assess for Lymphatic Cording
- Palpation (feeling taut cord, like a 'guitar or piano string')
- Place arm in depression, abduction, shoulder external rotation and then extension first at elbow the wrist and then finger, then assess for pain, decreased range and cord like structure

Scar Assessment
The scar left from cancer surgery and radiation needs to be assessed to determine if it is causing limitations in range of motion, pain or complications to lymphedema. The ability to move the skin over the mastectomy scar needs to be assessed.

Assessment of Client Knowledge
Signs and Symptoms of Cellulitis:
- Redness of the skin
- Swelling
- Warmth
- Pain and tenderness
- Drainage or leakage
- Tender lymph nodes
- Fever

Importance of Exercise:
- Decrease weight
- Improve lymph flow
- Improve quality of life
- More healthy

Self Care Strategies:
- Hygiene
- Bandaging
- Exercise regime and progression
- Garment donning
- Self massage
Treatment Decisions

The best practice for lymphedema is a holistic multidisciplinary approach that includes; exercise, compression, skin care, risk reduction, massage, pain and psychosocial management.

Safety Issues

- Clients with peripheral arterial occlusive disease should not wear sustained compression exceeding 25 mmHg.
- During periods of acute infection, compression should be reduced or removed if painful and no massage.
- Clients with congestive heart disease should not participate in a lymphedema program.

Successful Outcomes

- Reduction in size and volume
- Improved skin condition
- Improved subcutaneous tissue consistency
- Improved limb shape
- Improved limb function
- Improved symptom control
- Enhanced management skills

Upper and Lower Limb Management

- Psychosocial support
- Education
- Skin care
- Exercise and movement
- Elevation and deep breathing
- Management of medical conditions, pain and discomfort
- Compression garments
- Bandages
- Massage

Care Path at a Glance

<table>
<thead>
<tr>
<th><strong>Intensive Therapy (2-4 visits)</strong></th>
<th><strong>Transition Management (3-6 visits)</strong></th>
<th><strong>Self Management (7-10 visits)</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Psychosocial support</td>
<td>Support self management</td>
<td>Skin care</td>
</tr>
<tr>
<td>Education</td>
<td>Reduce practitioner support</td>
<td>Exercise and elevation</td>
</tr>
<tr>
<td>Skin care</td>
<td>Education</td>
<td>Management of medical conditions, pain and discomfort</td>
</tr>
<tr>
<td>Exercise and movement</td>
<td>Skin care</td>
<td>Compression garments</td>
</tr>
<tr>
<td>Elevation</td>
<td>Exercise and elevation</td>
<td>Self massage</td>
</tr>
<tr>
<td>Bandages</td>
<td>Self massage</td>
<td>Bandages</td>
</tr>
<tr>
<td>Massage</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Skin Care

Good skin care plays a vital part in the treatment of lymphedema. Germs can enter through the skin, even the tiniest of scraps. The protein-rich fluid in the swollen area acts as an ideal breeding ground for bacteria. Clients will need to see their doctor immediately if they develop an infection (sometimes called cellulitis). Their limb may become red, hot and very painful. They may complain of feeling generally unwell and may lose their appetite. Antibiotics are usually needed to clear it up and they should be started immediately.

General Principles to good skin care

- Wash daily
- Ensure skin folds are clean
- Monitor skin for cuts, bites, abrasions, burns
- Moisturize your skin every day by gently smoothing in non-perfumed cream or oil.
- Avoid extreme temperatures
- No injections or blood pressure in that arm.

What you may see?

<table>
<thead>
<tr>
<th>Skin Condition</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Folliculitis</td>
<td>Inflammation of the hair follicles</td>
</tr>
<tr>
<td>Fungal infection</td>
<td>Moist, whitish, scaling and itching commonly in skin folds</td>
</tr>
<tr>
<td>Lymphangiectasia</td>
<td>Soft fluid filled projections caused by dilation of the lymphatic vessel</td>
</tr>
<tr>
<td>Papillomatosis</td>
<td>Firm raised projections caused by dilation of the lymphatic vessel and fibrosis</td>
</tr>
<tr>
<td>Lymphorrhea</td>
<td>Occurs when lymph leaks from the skin surface</td>
</tr>
<tr>
<td>Ulceration</td>
<td>Open wound, will need specialist referral</td>
</tr>
<tr>
<td>Venous eczema</td>
<td>Skin becomes pigmented, inflamed, scaly and itchy. Often associated with varicose veins and located most commonly around the ankles</td>
</tr>
<tr>
<td>Contact dermatitis</td>
<td>The result of allergic or irritant reaction. Skin becomes red, itchy, scaly and may weep or crust.</td>
</tr>
</tbody>
</table>

Treatment

- Teach client to examine skin daily
- Watch for marks on skin from bandages and compression garments
- React quickly to trauma to skin
- Teach signs and symptoms of cellulitis
**Lymphatic Massage**

**Manual Lymphatic Massage**

Manual Lymphatic Massage (MLD) is a gentle massage that is one of the key components to Lymphedema management. MLD moves fluid away from the congested area by increasing activity in normal lymphatic tissue.

**Self Massage**

In this type of massage, the soft tissue of the body are lightly rubbed, tapped, and stroked. It is a very light touch, almost like a brushing. Self massage is a self administrated version of MLD that clients and caregivers can learn and apply themselves. Self massage takes approximately 15 minutes and is performed daily.

**Contraindications to Self Massage**

- Acute cellulitis
- Renal failure
- Unstable hypertension
- Severe cardiac insufficiency
- Ascites (swelling of the abdomen)
- Superior vena cava obstruction
Bandages

Bandaging is a key element of the CCAC Palliative Care Lymphedema Directive. Bandages reduce lymphedema, restore shape to limb, reduce skin changes, support skin, eliminate lymphorrhea and soften subcutaneous tissues (example: cords). Bandages help to increase tissue pressure, improve lymphatic return and provide counter pressure against the muscle pump during exercise. Encourage clients to learn bandaging as soon as possible.

Short Stretch Bandages

Principles of Short Stretch Bandages:
- Short stretch bandages have a high working pressure and a low resting pressure
- Avoid using tensor bandages (or ACE wrap), they do not provide enough pressure
- Comprilan* or Rosidal* compression bandages are most effective
- Start bandaging distally to proximally
- Prevent creasing when wrapping
- Apply addition padding to boney areas or near creases
- Apply bandages at 50% extension and 50% overlap
- Use several bandages to form overlap
- Wear bandages at night and during exercise (minimum of one hour/day), longer periods of use may be recommended for some clients
- Assess security, comfort, sensation, mobility and circulation after bandaging

Contraindications
- Arterial insufficiency
- Uncontrolled heart failure
- Severe peripheral neuropathy

3M Coban 2 Compression System

Principles
- Volume reduction without the bulk of traditional bandages
- Applied twice weekly for 3 weeks
- Worn 24 hours per day
- Allow patient maximum mobility
- Helps client maintain independence

Application
- The white comfort foam layer is applied first
- The tan compression layer is applied second
- Green box has 25% reduced resting pressure, used for arms, shoulders, fingers and toes (approximately $250.00)
- Purple packaging used for legs, feet, hips and torso (approximately $350.00)
- 3M will provide names of vendors for member access

Two studies provided:

Compression Garments

Clients should be sent to a professional to be fitted for compressive garments.

Compressive garments are used in the long term management of lymphedema. They may be used for prophylaxis, in the initial treatment or for maintenance.

Criteria for client suitability

- Intact skin
- Minimal shape changes of the limb
- Minimal pitting
- Swelling that can be contained by compression
- Ability to tolerate garments
- Ability to monitor skin condition
- Self management (client is able to put on and take off)

Contraindications

- Arterial insufficiency
- Acute cardiac issues
- Deep skin folds
- Lymphorrhrea
- Ulceration
- Peripheral neuropathy

Types of Garments

<table>
<thead>
<tr>
<th>Circular Knit Garments</th>
<th>Flat Knit Garments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ready to wear garments</td>
<td>Custom made</td>
</tr>
<tr>
<td>Thinner</td>
<td>Firmer and thicker</td>
</tr>
<tr>
<td>More cosmetically acceptable</td>
<td>Difficult to put on and take off</td>
</tr>
<tr>
<td>Worn during day</td>
<td>Worn during day</td>
</tr>
</tbody>
</table>

Compression Garments for Upper Limb

*No recommendations available for leg lymphedema*

<table>
<thead>
<tr>
<th>Indications</th>
<th>Compression</th>
<th>Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prophylaxis</td>
<td>15-20 mmHg</td>
<td>Ready to wear</td>
</tr>
<tr>
<td>Mild lymphedema</td>
<td>20-30 mmHg</td>
<td>Circular Knit</td>
</tr>
<tr>
<td>Maintenance</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Palliation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Moderate lymphedema</td>
<td>30-40 mmHg</td>
<td>Circular or flat knit</td>
</tr>
<tr>
<td>Severe lymphedema</td>
<td>&gt;40 mmHg</td>
<td>Custom made</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Flat Knit</td>
</tr>
</tbody>
</table>
Exercise

Exercise was originally thought to exacerbate lymphedema. Recent studies have shown no significant change in arm volume with resistance or aerobic exercise. 17,18,19,20,21,22,23

Clients with lymphedema commonly experience declines in physical functioning and quality of life. These may be reversed with exercise. Exercise is the key component to this program.

Types of Exercise 24

<table>
<thead>
<tr>
<th>Type</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Remedial Exercise</td>
<td>▶ Specific exercises on affected limb</td>
</tr>
<tr>
<td></td>
<td>▶ Always performed with some type of compression on</td>
</tr>
<tr>
<td></td>
<td>▶ Encourages congested lymph to flow along a compression gradient</td>
</tr>
<tr>
<td>Aerobic</td>
<td>▶ Stimulates lymph sequestration and transport</td>
</tr>
<tr>
<td></td>
<td>▶ Compression should be worn</td>
</tr>
<tr>
<td>Resistive Training</td>
<td>▶ Should be very gradual</td>
</tr>
<tr>
<td></td>
<td>▶ Enhance muscles functional capacity (decreased fatigue)</td>
</tr>
<tr>
<td></td>
<td>▶ Compression is recommended</td>
</tr>
<tr>
<td>Flexibility</td>
<td>▶ Release fibrosis, enhance posture and facilitate lymph flow</td>
</tr>
</tbody>
</table>

Goals

▶ Encourage normal activities of daily living
▶ Develop individualized exercise programs
▶ Compression bandages must be worn during exercise
▶ Exercise should be moderate intensity (see chart below)

Benefits of Exercise

▶ Improves quality of life
▶ Helps attain or maintain healthy body mass index
▶ Reduces risk of lymphedema
▶ Helps manage lymphedema
▶ Improves functional capacity
Manual Therapy

Scar Massage

Apply moderate pressure using the second and third finger as you move up and down along the length of the scar. Applying lotion to finger tips will reduce friction at the scar and help minimize discomfort. Scar massage should be done daily by client for 3 minutes. Scar massage should be reviewed by the therapist on a weekly basis.

Lymphatic Cording

Axillary Web Syndrome (lymphatic cording) is a painful and functionally limiting complication of breast cancer treatment. Lymphatic cording is likely due to lymphatic thrombosis, after lymph node dissection. Lymphatic Cording is a more accurate term for this syndrome because it can also occur in the leg after lymph node dissection, at the groin or behind the knee. 35,36,37,38,39

Lymphatic cording can cause:
- Pain
- Avoidance of movement
- Adaptive postures (shoulder position is slightly protracted with mild thoracic kyphosis in an effort to have less pull on the cord)
- Limited range of motion
- Limitations in activity and function
- Area around cord may look edematous
- Increases risk of lymphedema

Research Support for Resolution of Lymphatic Cording

Physical therapy may promote resolution of lymphatic cording in breast cancer survivors 39
- Left untreated the cords take a minimum of 3 months to resolve, if they resolve at all
- With early physiotherapy intervention the cords resolves on average in 7 weeks
- Thrombosed lymphatics go through an inflammatory phase with thickening of the vessels and temporary shortening and tightening which later remits
- The cords are made taut and painful by shoulder abduction
- You may hear snap or pop where the cord actually breaks in the antecubital fossa or in the axilla
- The client usually feels immediate relief and increase in mobility
- Full range of motion and full function may be gained in one therapy session

Treatment of Lymphatic Cording
- Active and passive stretching
- DARE stretch (therapist and self) or gliding techniques
- Skin traction techniques (include area around drain scar)
- Soft tissue and cord stretching (myofascial release)
- Hooking manipulation
- Scar release techniques (skin rolling and vertical lifts of the scar)
- Manual lymph drainage or self massage (see massage section of module)
- Light compression or bandaging (see garment and bandaging section of module)
- Client education (see calendar)
- Exercises
References


LYMPHEDEMA

Self-Massage: Arm

General Tips

- Always direct massage towards working lymph nodes (i.e. neck)
- Begin your sweeps closest to the body (proximal) and move outwards along the extremity (distal)
- Apply gentle pressure
- Try to elevate the limb while massaging

Arm Self Massage

- Deep breathing (Belly breaths) X 15  Inhale through your nose, exhale through your mouth
- Locate the hollow above the collarbone with your fingertips. Gently stretch the skin in a circle toward the neck and release. Repeat 15 times
- On your unaffected side (if you have not had lymph nodes removed) place your finger tips at the outside edge of your breast (close to your arm pit). Gently stretch the skin in circles and release. Repeat 15 times.
- On both sides, place your fingertips along your groin crease. Gently stretch the skin in a circular motion and release. Repeat 15 times.
- Place your full hand in the armpit against the ribcage of your affected side. Using gentle motions, slowly sweep downwards towards your belly. Repeat 15 times.
- Place your full hand 1/3 of the way down your upper arm. Using gentle motions, sweep up the arm, around the front part of your shoulder, and towards the neck. Repeat 15 times.
- Place your hand 2/3 of the way down your upper arm and sweep up the arm, around the front part of your shoulder, and towards the neck. Repeat 15 times.
- Move your hand to the elbow and continue to sweep up the arm, around the front part of your shoulder, and towards the neck. Repeat 15 times.
- From your wrist, sweep up the arm, around the front part of your shoulder, and towards the neck 15 times. Do this on the front and backside of the forearm.
LYMPHEDEMA

Self-Massage: Leg

**General Tips**
- Always direct massage towards working lymph nodes
- Begin your sweeps closest to the body (proximal) and move outwards along the extremity (distal)
- Apply gentle pressure
- Try to elevate the limb while massaging

**Leg Self Massage**
- Take deep belly breaths by inhaling through your nose and exhaling through your mouth. Repeat 15 times.
- Locate the hollow above the collarbone with your fingertips, gently stretch the skin in a circle toward the neck and release. Repeat 15 times.
- Place your finger tips at the outside edge of your breasts (close to your arm pit) and gently stretch the skin in circles and release. Repeat 15 times.
- On your unaffected side place your fingertips along your groin crease. Gently stretch the skin in a circular motion and release. Repeat 15 times.
- Place your full hand at groin against your affected side. Using gentle motions, slowly sweep upwards towards your belly. Repeat 15 times.
- Place your full hand 1/3 of the way down your thigh. Using gentle motions, sweep up the leg, towards the belly. Repeat 15 times.
- Place your hand 2/3 of the way down your thigh and sweep up the leg, towards the belly. It may be very difficult to reach down your leg, so use a paint roller with an extended handle (ask a professional for help). Repeat 15 times.
- Move your hand to knee and continue to sweep up the leg, around any scars, and towards the belly. Repeat 15 times.
- From your ankle, sweep up the leg, around any scars, and towards the belly. Repeat 15 times. Do this on the front and backside of the leg. You may need an assistive device to reach the lower leg and foot.
LYMPHEDEMA Bandaging

General Principles

- Short stretch have a high working pressure and a low resting pressure
- Start bandaging fingers towards arm pit
- Prevent creases
- Apply addition padding to bony areas or near creases
- Apply bandages at 50% extension and 50% overlap
- Use several layers
- Assess security, comfort, sensation, mobility and circulation after bandaging
**LYMPHEDEMA**  
**Bandaging**

**General Principles**

- Short stretch have a high working pressure and a low resting pressure.
- Prevent creases.
- Apply additional padding to bony areas or near creases.
- Apply bandages at 50% extension and 50% overlap.
- Use several layers.
- Assess security, comfort, sensation, mobility and circulation after bandaging.
Exercises: Arm

Exercise will:
- Improve quality of life
- Attain or maintain healthy Body Mass Index
- Reduce risk of Lymphedema
- Manage Lymphedema
- Improve functional capacity

Exercise Log

<table>
<thead>
<tr>
<th>Week</th>
<th>Strength</th>
<th>Aerobic</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td>✔️</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>✔️</td>
<td>✔️</td>
<td></td>
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<td>3</td>
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</tr>
<tr>
<td>5</td>
<td>✔️</td>
<td>✔️</td>
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</tr>
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</table>
Exercises: Leg

LYMPHEDEMA
### Quick Reference Guide for Authorizing Lymphedema Care

<table>
<thead>
<tr>
<th>Lymphedema Type</th>
<th>Service Frequency</th>
<th>Interventions</th>
<th>Recommended Products</th>
</tr>
</thead>
</table>
| **Secondary Lymphedema: Arm** | | | **Compilan Short Stretch Bandages**  
8cm X 5m - quantity 1  
8cm X 5m - quantity 1  
10cm X 5m - quantity 1  
Medipore tape (10 cm) - quantity 1  
Rosidal Soft - Roll 0.4cm x 10cm x 2.5cm - quantity 1  
**OR**  
**3M Coban 2 Compression System**  
Applied twice weekly for 3 weeks  
Worn 24 hours per day  
The white comfort foam layer is applied first  
The tan compression layer is applied second  
Green box has 25% reduced resting pressure, used for arms, shoulders, fingers and toes (approximately $250.00) |
| Week 1 (1 visit) | Initial Assessment | Prevention Interventions |  |
| **Week 2 (2-3 visits)** | Education on skin care  
Bandaging | Assessment: see lymphedema assessment and performance indicators |  |
| **Week 3 (2 visits)** | Self-massage  
Exercise  
Bandaging continued | Introduce patient education calendar |  |
| **Week 4 (1 visit)** | Same as week 3  
evaluate progress | Evidence based lymphedema care:  
Skin care  
Bandaging and self-massage to reduce volume of limb  
exercise |  |
| **Week 5 (1 visit)** | Same as week 3  
Monitoring  
Plan for discharge | Refer to community services |  |

| **Secondary Lymphedema: Palliative Arm** | | | **Compilan Short Stretch Bandages**  
8cm X 5m - quantity 1  
8cm X 5m - quantity 1  
10cm X 5m - quantity 1  
Medipore tape (10 cm) - quantity 1  
Rosidal Soft - Roll 0.4cm x 10cm x 2.5cm - quantity 1  
**OR**  
**3M Coban 2 Compression System**  
Applied twice weekly for 3 weeks  
Worn 24 hours per day  
The white comfort foam layer is applied first  
The tan compression layer is applied second  
Green box has 25% reduced resting pressure, used for arms, shoulders, fingers and toes (approximately $250.00) |
| Week 1 (1 visit) | Initial Assessment | Prevention Interventions |  |
| **Week 2 (2-3 visits)** | Education on skin care  
Bandaging if tolerable | Assessment: see lymphedema assessment and performance indicators |  |
| **Week 3 (2 visits)** | Self-massage (taught to caregiver)  
Bandaging continued | Introduce patient education calendar |  |
| **Week 4 (1 visit)** | Same as week 3  
Evaluate progress | Evidence based lymphedema care:  
Skin care  
Bandaging and self-massage to reduce volume of limb  
exercise |  |
| **Week 5 (1 visit)** | Same as week 3  
Monitoring | Refer to community services |  |
<table>
<thead>
<tr>
<th>Lymphedema Type</th>
<th>Service Frequency</th>
<th>Interventions</th>
<th>Recommended Products</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Secondary Lymphedema: Leg</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Week 1 (1 visit)</td>
<td>Initial Assessment</td>
<td>- Prevention Interventions</td>
<td>Comprilan Short Stretch Bandages</td>
</tr>
<tr>
<td>Week 2 (2-3 visits)</td>
<td>Education on skin care</td>
<td>- Assessment: see lymphedema assessment and performance indicators</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bandaging</td>
<td></td>
<td>6cm X 5m - quantity 1</td>
</tr>
<tr>
<td>Week 3 (2 visits)</td>
<td>Self-massage</td>
<td>- Introduce patient education calendar</td>
<td>8cm X 5m - quantity 2</td>
</tr>
<tr>
<td></td>
<td>Exercise</td>
<td>- Evidence based lymphedema care:</td>
<td>10cm X 5m - quantity 1</td>
</tr>
<tr>
<td></td>
<td>Bandaging continued</td>
<td>▪ Skin care</td>
<td>Medipore tape (10 cm) - quantity 2</td>
</tr>
<tr>
<td>Week 4 (1 visit)</td>
<td>Same as week 3</td>
<td>▪ Bandaging and self-massage to reduce volume of limb</td>
<td>Rosidal Soft - Roll 0.4cm x 10cm x 2.5cm - quantity 1</td>
</tr>
<tr>
<td></td>
<td>Evaluate progress</td>
<td>▪ exercise</td>
<td>OR</td>
</tr>
<tr>
<td>Week 5 (1 visit)</td>
<td>Same as week 3</td>
<td>- Refer to community services</td>
<td>3M Coban 2 Compression System</td>
</tr>
<tr>
<td></td>
<td>Monitoring</td>
<td>- ADP authorization for garment</td>
<td>Applied twice weekly for 3 weeks</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Worn 24 hours per day</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>The white comfort foam layer is applied first</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>The tan compression layer is applied second</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Purple packaging used for legs, feet, hips and torso (approximately $35.00)</td>
</tr>
</tbody>
</table>

**Secondary Lymphedema: Palliative Leg**

| Week 1 (1 visit)       | Initial Assessment            | - Prevention Interventions                        | Comprilan Short Stretch Bandages                          |
| Week 2 (2-3 visits)    | Education on skin care        | - Assessment: see lymphedema assessment and performance indicators |
|                        | Bandaging (if tolerable)      |                                                   | 6cm X 5m - quantity 1                                     |
| Week 3 (2 visits)      | Self-massage                  | - Introduce patient education calendar            | 8cm X 5m - quantity 2                                     |
|                        | Bandaging continued           | - Evidence based lymphedema care:                 | 10cm X 5m - quantity 1                                    |
| Week 4 (1 visit)       | Same as week 3                |   ▪ Skin care                                     | Medipore tape (10 cm) - quantity 2                        |
|                        | Evaluate progress             |   ▪ Bandaging and self-massage to reduce volume of limb | Rosidal Soft - Roll 0.4cm x 10cm x 2.5cm - quantity 1   |
| Week 5 (1 visit)       | Same as week 3                |   ▪ exercise                                     | OR                                                        |
|                        | Monitoring                    | - Refer to community services                     | 3M Coban 2 Compression System                             |
|                        |                               |                                                   | Applied twice weekly for 3 weeks                          |
|                        |                               |                                                   | Worn 24 hours per day                                     |
|                        |                               |                                                   | The white comfort foam layer is applied first            |
|                        |                               |                                                   | The tan compression layer is applied second              |
|                        |                               |                                                   | Purple packaging used for legs, feet, hips and torso (approximately $35.00) |

**Recommended Products**

- Comprilan Short Stretch Bandages
  - 6cm X 5m - quantity 1
  - 8cm X 5m - quantity 2
  - 10cm X 5m - quantity 1
  - Medipore tape (10 cm) - quantity 2
  - Rosidal Soft - Roll 0.4cm x 10cm x 2.5cm - quantity 1
  - OR
  - 3M Coban 2 Compression System
    - Applied twice weekly for 3 weeks
    - Worn 24 hours per day
    - The white comfort foam layer is applied first
    - The tan compression layer is applied second
    - Purple packaging used for legs, feet, hips and torso (approximately $35.00)
What is Lymphedema?

Checklist

- Surgery with lymph node dissection
- Radiation to lymph nodes
- Drain and/or wound complications infection
- Webbing syndrome
- Advanced cancer
- Congenital predisposition
- Client Symptoms: Heaviness, tightness, swelling and pain
- Stemmer’s Sign
- Palpation: Pitting, fibrosis, loss of boney contours and skin mobility

What is not Lymphedema?

<table>
<thead>
<tr>
<th>Not Lymphedema</th>
<th>Description</th>
<th>Image</th>
</tr>
</thead>
</table>
| Congestive Heart Failure  | Bilateral swelling of ankles  
|                           | Pitting  
|                           | Changing from one day to another                                                                                                                                                                           | www.sciencephoto.com                        |
| Chronic Venous Insufficiency | Chronic bilateral changes of legs and ankles  
|                           | The skin may react with varicose eczema, local inflammation, discoloration, thickening, and an increased risk of ulcers and cellulitis                                                                 | www.angiologist.com                        |
| Lipedem                   | Inherited  
|                           | It occurs almost exclusively in women  
|                           | It involves the excess deposit of fat cells, bilateral and symmetrical from the waist to above the ankles                                                                                              | www.lymphedema-therapy.com                 |
# Lymphedema Assessment

## History of Current Condition
- Primary □ Secondary
- Age of onset:
- Investigations:
- Current symptoms:
- Current/previous cellulitis:
- Current treatment for lymphedema:
- Past treatment for lymphedema:

## Past Medical History

## Functional Assessment
- □ Ability to get up from sitting or lying
- □ Ability to walk
- □ Ability to lift affected leg
- □ Effects on Activities of daily living
- □ Use of aids
- □ Ability to put on or take off footwear
- □ Ability to fasten buttons
- □ Ability to put on and off garment or bandages

## Lymphedema Measurement (centimeters)

<table>
<thead>
<tr>
<th></th>
<th>Arm</th>
<th>MCPs</th>
<th>Wrist</th>
<th>10cm Below</th>
<th>15cm Above</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Lat. Epicondyle</td>
<td>Lat. Epicondyle</td>
</tr>
<tr>
<td></td>
<td>Left</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Right</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Leg</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td></td>
<td>Left</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Right</td>
<td></td>
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</tr>
</tbody>
</table>

## Pain

## Lymphatic Cord and/or Scar

## Treatment Plan
- □ Care path:
- □ Supply kit:
- □ Client package:

## Signature: