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Helping Out People with Edema

HOPE Lymphedema Treatment Center, PLLC

www.HopeLymphedema.com

## Activities for Daily Living

*Lessons to help you with the outcome of your treatment and make living with Lymphedema easier for you.*

### **1** Physiology of the Healthy Lymphatic System

Our blood carries oxygen and nutrients to all the cells of the body. Our cells use oxygen and nutrients the same way we use food and oxygen - to create energy in order to perform our daily functions. And like our own digestive system, each cell produces cellular waste material, 90% of which is removed by the venous system. The remaining 10% of cellular waste materials are removed by the lymphatic system. This 10% contains protein particles that are too large to fit through the capillary walls of the venous system. Every inch of skin contains many lymphatic vessels. These vessels absorb the proteins and fluids that surround them. Lymphatic vessels drain into larger lymphatic vessels, which drain into even larger lymphatic vessels. The larger lymphatic vessels work by means of a system of one-way valves, similar to venous system. Eventually, all lymphatic fluid passes through lymph nodes. Lymph nodes are pea-sized chambers lined with white blood cells. These white blood cells clean the lymphatic fluid of invaders like bacteria and viruses by phagocitizing or "eating" them. This is why, when we have an infection, the lymph nodes that drain the infected area usually feel swollen and sore. They are working overtime! The lymph nodes also break down proteins for easier elimination by the kidneys. Lymph nodes are generally located in joint areas because movement of the joints helps to pump fluid through the lymphatic system. All lymphatic fluid eventually travels to the area at the base of the neck, just above the collar bone. At this point, the fluid enters the venous system, gets carried to the kidneys and washed away with the urine.

### Pathophysiology of the Compromised Lymphatic System

The lymphatic system can be compromised by a variety of things, including surgery and trauma and circulatory problems. The removal or radiation of lymph nodes or chemotherapy as a part of treatment for cancer can also damage lymph vessels or nodes. Sometimes people are born with fewer or malfunctioning lymph vessels or nodes. The lymphatic system can be compromised by anything that normally causes swelling, such as an injury, surgery, infection or insect bites. When swelling occurs the compromised lymphatic system cannot drain away all the fluid. When fluid stays in the affected limb for an extended length of time the one-way valves in the larger lymphatic vessels can fail or become "incompetent." When these one-way valves fail, gravity tends to pull the fluid down to the lowest part of the limb. An accumulation of fluid in the tissues is called edema. When edema is present for long periods of time, the edematous limb or body part is vulnerable to infection or ulcers. Sometimes lymphatic fluid leaks or weeps from the skin. Pooling of fluid in the tissue for an extended length of time creates hardened areas known as fibrosis, that increase the risk of infection.



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Fibrotic Tissue Lymphatic fluid is full of large protein particles. When fluid accumulates and stays in the tissues for any length of time, these protein particles cause the affected area to become hard or fibrotic. Manual lymph drainage (MLD) can help to break up fibrotic tissue, which allows it to be carried away by the lymphatics. This process is most successful on fibrosis that is relatively new. If it has been present for years, the success will be limited. Your therapist may use pads made of small pieces of firm foam in your bandaging to help break up fibrosis.

Healthy lymphatic pathways are the routes that the lymphatic system uses to move fluid towards its intersection with the venous system. A typical pathway may start with the tiny lymphatic vessels close to the surface of the skin (*perhaps in the hand or foot*) moving towards larger lymphatic vessels (*up the arm or leg*) to the lymph nodes near the joint (*the armpit or groin*) and from the lymph nodes to the junction with the venous system. Your therapist will explain to you, which of your pathways are nonfunctional, and the routes to be created by performing manual lymphatic drainage (MLD).

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## Manual Lymphatic Drainage (MLD)

MLD is a method of stimulating movement of lymphatic fluid through the lymph vessels that are directly under the skin. A technique of light, gentle massage - MLD opens up collateral or additional pathways through which fluid can travel to meet a healthy lymph vessel and continue along its way to the kidneys. The initial lymph vessels are the smallest lymphatic vessels in the surface of the skin. They normally drain into larger vessels deep in the extremity. The therapist massages these lymph vessels to move fluid up the affected limb through the vessels in the surface of the skin. Fluid is gently pushed away from blocked areas and into the new collateral pathways that are created by the series of massages.

## Compression Bandaging

Compression bandages augment and in some cases, replace the elasticity of skin. The bandages increase tissue pressure in the affected limb and prevent the return of lymph fluid to the area. The increased tissue pressure from the bandaging works with the skeletal muscles to pump additional fluid through collateral pathways created by the MLD. For example, if you hold your lower arm and open and close your fingers, you will feel an additional pressure from the muscles contracting beneath your grip. This can give you a sense of how the bandages help to squeeze out additional fluid.



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## **Complete Decongestive Therapy (CDT)**

CDT is a combination of MLD, compression bandaging and therapeutic exercises. When lymph pathways are compromised, MLD "opens up" and stimulates the lymphatic system to clear the limb of fluid. Applying compression bandages after and MLD treatment will help keep fluid from re-entering the affected area. Performing therapeutic exercises with the bandaged limb helps to move additional fluid out of the affected limb. CDT, the combination of these therapies, produces results that could not be accomplished with just one therapy alone.



## **Diet**

For most people with lymphedema, it is best to reduce salt in your diet. Salt causes fluid to accumulate in the tissues. Some patients find that if they eat a meal high in salt, such as Chinese food or other restaurant foods, their swelling is up the next day. Be aware of hidden salt in foods. Some commercially prepared products, such as canned soups or instant meals, contain large amounts of salt. Reading labels is your best defense. Watch out for excessive fat in foods, as well. Fat can act like a sponge and hold fluid in the affected extremity. Choose foods lower in fat and remove fat from food before you eat it (skim fat from the top of cold soups or stews). When eating out or cooking at home choose grilled, poached, or broiled foods instead of fried foods. Season with lemon juice instead of butter or margarine.

## **Water Intake**

Sufficient water intake is especially important in CDT. Six to eight glasses of water a day helps to flush your lymphatic system of proteins and other waste products that you are trying to eliminate. If we broke up fibrosis protein deposits and there was not enough moveable fluid to wash them away they would remain in the tissues. This can occur if you are not well hydrated. Also, drinking water helps to keep your skin hydrated from within. Drink fewer sodas and caffeinated drinks, which can dehydrate you. Sodas contain sodium (salt) which causes water retention in the tissues. The caffeine acts as a diuretic - pulling water out of your body and contributing to a dehydrated state. (Remember, when you are dehydrated you cannot flush your lymphatic system with MLD). Caffeine also reduces bone density and contributes to osteoporosis



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#### Self-Bandaging

During your treatment, the therapists have been teaching you how to apply compression bandages. Long-term management of lymphedema requires the use of support stockings (*or sleeves*) during the day and bandaging at night (*unless an alternative system, such as the Jovi sleeve is used*). A cotton under-stocking is covered with a layer of foam padding. Short-stretch compression bandages are applied over the foam padding. The technique of wrapping over the foam padding helps to even out the compression, avoiding a tourniquet effect. Those who are physically not able to apply bandages should have a family member, friend, or assistant help them. Your therapist will be happy to teach your friends, loved ones, and assistants how to care for you. We strongly encourage those who are able to learn the art of self-bandaging because there are times when your care-givers may not be available. You may also find it helpful to chat with other clients about their tips for self-bandaging. Self-bandaging will awkward at first, however, with practice most patients become proficient.

#### Demonstrate Self-Bandaging

Each time you come in with your self-bandaged limb (*or after a weekend of self-bandaging*) we will assess how you are doing with bandaging and give pointers to help improve your skills, if necessary. If a family member, friend, or assistant bandages you, we offer the opportunity to observe them bandaging and provide tips for better bandaging technique. We can schedule additional time for watching you apply bandages at your request, or if the therapist deems it necessary.

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#### Personal Hygiene

Personal hygiene includes cleansing your skin as well as your bandages and support stockings. Always keep your skin clean, dry, and well lubricated. When taking a shower or bath, use tepid-warm rather than hot-warm temperatures. Heat can make edema worse. Avoid hot tubs and saunas. Use a gentle soap and rinse well. Make sure to dry well. If you cannot reach to dry between your toes, you might consider using a blow dryer on the low or cool setting. Always apply a generous amount of lotion to your skin, especially to the areas affected by lymphedema. It is important not to let your skin get dried-out and chapped (*this could lead to cracking and infection*). It is best to apply lotion immediately after bathing and drying, to hold moisture in the skin. Allow a few minutes for the lotion to sink in before putting on support stockings or sleeves. Always use a non-greasy lotion under your support stockings or sleeves (*e.g. Aveeno, Lubriderm, or Eucerin*).

Wash your bandages or support stockings or sleeves frequently (*at least every three days*). During treatment period we recommend washing bandages once a week in order to keep you in



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bandages for the longest possible time. Bandages can be machine washed in hot water if they are placed in a pillow case or lingerie bag to prevent them from getting tangled up in the washer. The tubular cotton under -stocking should always be hand washed. Foam padding should be hand washed. It is best to air dry all bandages away from direct sunlight. Washing bandages helps them retain their elasticity. With good care they should last for at least six months.

### **Skin care**

Along with keeping the skin clean and well hydrated, it is important to avoid causing sores (see *Safety*). Good skin care is your first defense against infection. Avoid trimming hangnails or cuticles. Use a nail file to smooth rough or hangnails and use a cuticle cream to keep cuticles soft. Wear rubber gloves when cleaning and leather gloves when doing yard work. Use an electric razor (*not a blade*) when shaving your legs or under your arms. Avoid scratches and bites from pets or insects. Protect yourself from sunburn. Use knives or sharp tools with caution, and use a thimble when sewing. If you do get a small wound, clean it with soap and water. Cover the wound with a thin layer of antibacterial ointment and a Band-Aid. Change the Band-Aid whenever it gets wet or dirty, or at least every day. Be alert for any signs of infection: swelling, redness, marked tenderness, or increased heat. Contact your doctor immediately. You may need an oral antibiotic.

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### **Dressing**

Clothing should be loose and comfortable with no tight constrictions on the affected side. Clothing that pinches into the skin obstructs lymphatic drainage (and increases swelling) on the affected side. Heavy breast prostheses can cause the bra strap to cut into the skin. Use padding for the bra straps, bra extenders for tight-fitting bras, and lightweight prostheses. Wear socks without elastic for edematous legs, as well as comfortable, non-constricting shoes. Tight jewelry may also have a "tourniquet effect" and interfere with circulation. If you wear a ring, wristwatch, or other constricting object on your affected side it may cause fluid to accumulate in your finger or hand.

### **Hobbies, Sports, and Employment**

Managing lymphedema requires that you rethink the way you do things. You will be able to do most of the things you have always done with some adjustments to accommodate your condition. For example, if you have lymphedema in your legs and a hobby or sport that requires standing (*or sitting*) for long periods of time, such as bird watching or sewing, find ways to continue with your activity and elevate your legs periodically (*bring a portable chair and elevate on a tree, stump, or stool*). Use extra bandaging over your support garment if your affected limb will be in a dependent (*down*) position for any length of time.



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## Psychosocial Issues

Sometimes uncomfortable feelings come up in relation to lymphedema, such as anger about not being taught prevention prior to the onset of the condition, loneliness and isolation related to being the "only" person with swollen legs or arms, or diminished sexual desire.



## Self Massage

Your therapists have been teaching you how to manage your condition with self-massage. Most people who have use of their hands and adequate flexibility can practice a simple form of MLD. The therapists have shown you the most important places to massage and the direction of movement. You also practice a little massage when you apply your lotion. You have been asked to demonstrate your self-massage skills to make sure you understand how to massage and which direction to push the fluid.

## Deep Breathing

During sessions, the therapists asked you to take deep breaths. These deep breaths allow the diaphragm (*your breathing muscle*) to massage the thoracic lymph duct, the largest duct delivering fluid from the lower parts of your body. This increases the movement of lymphatic fluid and stimulates the immune system. When you take a slow deep breath with your hand on your belly, you should see your belly rise when you inhale and fall when you exhale. Deep, slow breathing should be a part of your home lymphedema management program by now. Practice deep breathing several times a day and whenever you feel stressed. Slow, deep breathing stimulates a relaxation response.



## Safety

Inspect your affected limb daily and monitor the skin for changes such as fibrotic tissue, scrapes, calluses, and blisters. Clean small wounds with soap and water. Cover the wound with a thin layer of antibacterial ointment and a Band-Aid. Change the Band-Aid whenever it gets wet or dirty, or at least daily. Be alert for signs of infection, including swelling, marked tenderness, or increased heat. Contact your doctor immediately if you notice any of these signs. You may need an antibiotic. Avoid trauma to the skin by protecting yourself from insect or animal bites and scratches, and sunburn. Wear rubber gloves when cleaning and leather gloves while working in the yard. To avoid burns, use caution around heat sources, such as the oven or boiling water. If you are burned, immediately apply ice or cold water. Cover the blister with a bandage so it does not break, and you may need to call your physician. Use knives or sharp tools with caution. Use a thimble when sewing. Use an electric razor, rather than a blade, when shaving your legs or underarms.



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Avoid trimming hangnails or cuticles and use a cuticle cream to keep cuticles soft. Avoid receiving injections, having blood drawn, or blood pressures taken in the affected arm. Do not lift more than 12 pounds with an affected arm. Carry bags or heavier loads on the unaffected side. Always use extra bandaging when traveling by air; the decrease in atmospheric pressure in the airliner can cause swelling. Keep your living area at home safe. If you have difficulty walking, do not use throw rugs in your home. Throw rugs can slip or you may trip over them and fall. If you need assistance with walking, always use your cane or walker.

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#### Self Assessment

Carefully inspect your skin every day for changes, such as swelling, scrapes, blisters, fibrotic tissue, and "pitting". Your therapist has been discussing how to identify "pitting edema". When your finger pressure is applied to the affected limb for 10 seconds and released, normal skin will bounce back into place. When a dimple is seen upon release it is called "pitting edema". If the dimple remains for longer than 30 seconds, the edema is relatively serious. Check for pitting at the same places your therapist has been checking you, as these are the places where we expect to see pitting if it is there. Measure your affected limb weekly and keep a record of your results so you can tell if you are swelling. Measure at a few sites, similar to the sites used by the physical therapist, but always measure at the exact same sites each week. *(For example, always measure across the knuckles, 5 inches from the bottom of the wrist bone, 5 inches above that area, and 5 inches above the previous area)*. Use your daily assessments and weekly measurements to determine if you need additional bandaging over your support garment or if you need to be seen at the clinic for increased swelling.

#### Elevation

Keep the affected limb elevated as much as possible. Elevating above the level of the heart is most therapeutic. An arm can be rested on the back of a couch or chair, or supported by pillows. Elevate feet and legs by using a recliner or by improvising with footstools, chairs, and pillows. In bed elevate an arm or legs with pillows. On long car trips avoid holding affected limbs in a dependent (*downward*) position as gravity will pull fluid into the limb. Arms can be elevated with pillows or over the back of the seat. Legs can be elevated by sitting in the back seat with legs propped up on the seat with pillows. Extra bandaging should be used on long car trips to help prevent increased swelling. Make frequent rest stops to move around and do therapeutic exercises in the car.



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## Home Exercise Program

You were given a list of therapeutic exercise to do at the clinic and at home. For optimal results, do these exercises at least twice a day, every day. Always do your exercise with bandages (*or support stockings*) on. Remember that the increased tissue pressure from the bandaging works with the skeletal muscles to pump additional fluid through collateral pathways created by MLD, and eventually out of your body. You may get fatigued while doing your exercise program but you should stop before reaching a point of pain or extreme fatigue.

## **10** Bandaging over a Support Garment

At times additional pressure may be necessary. If you are taking a long car or an airline trip, apply bandages over your support stocking or sleeve in order to combat the lengthy period of limited movement or dependent (*downward*) positioning, as well as the decreased pressure in the plane. If you notice increased swelling at any time, you may need to apply bandages over your support stocking and increase the frequency of home exercises and self massage for a few days, until the limb returns to normal size.

## Appropriateness of Support Garment versus Bandaging

At times swelling may occur due to a decrease in pressure (*an airline flight*), a salty meal, hormonal cycles, or just the heat of summer. Based on your daily assessments and weekly measurements, you can judge whether or not you need additional bandaging. At times of increased swelling when additional bandaging is needed, you may choose to bandage over your support garment or apply the bandages for 1 to 3 days to decrease the swelling quickly. If your garment is too tight due to swelling, you can apply bandages as you have during your treatment period until the swelling goes down and you can comfortably fit into you support garment.

## Putting On and Taking Off Compression Garments

This is also called donning and doffing compression garments. Your compression garments are an attractive tool for maintaining lymphedema. They will wear longer if you take care in putting them on and taking them off. Rubber gloves with grippers, such as the Playtex gloves, will help you to put on your stocking or sleeves without tearing holes in them. Turn the garment inside out, except for the foot or wrist part. Slip your foot or hand through and into the correct position (*over the heel if it is a stocking*), smooth the stocking up your leg (*or arm*) using the palm of your gloved hand. Do not pull at the upper edge of the stocking, as it may tear the elastic. To take off your stocking or sleeve, simply peel the garment down and slip off. Again, rubber gloves will protect your garment from fingernails and rings, and make donning and doffing your garment easier. We also provide individual instruction in putting on you compression garment.