



Lymphedema and Exercise

The following content is adapted from *Exercises for Patients with Lymphoedema of the Leg, a Guide to Self-Massage and Hydrotherapy Exercises* by Judith R. Casley-Smith, 5th Edition©, 1999.

Your body has lymph vessels that lie next to your veins. The lymph vessels carry fluid from the tissue to lymph nodes where the fluid is filtered. Germs, waste products and cancer cells are removed from the lymph fluid. The purified fluid is then returned to the blood stream.

- The lymph fluid from your upper trunk and arms goes to lymph nodes in the armpit. These nodes are called **axillary nodes**. From there some lymph goes back to the blood stream. The rest goes to more nodes. The last nodes are the nodes just above your collarbone. These are called **supraclavicular nodes**.
- The lymph fluid from your lower trunk and legs goes to lymph nodes in the crease at the top of your leg. These are called **inguinal nodes**. From there the lymph goes through more nodes and into the largest lymph vessel in the body, the **thoracic duct**. The thoracic duct runs from near your belly button up through your diaphragm all the way up through your chest to the **supraclavicular lymph nodes** just above your collarbone.
- Along the way, the **thoracic duct** picks up lymph fluid from both your legs, your lower trunk, the upper left trunk, your left arm and the left side of your head. It drains into the **left supraclavicular nodes** and then into the **left subclavian vein**.
- Lymph fluid from the right side of your head, upper trunk, and your right arm drain into the **right lymphatic duct** which drains into the **right supraclavicular nodes** and then into the **right subclavian vein**.

When there is a problem with the lymph nodes and/or the lymph vessels from one region of the body, fluid, excess proteins, and waste products can back up and cause swelling, hardening and thickening of the skin, and an increased risk of infection. This condition is called lymphedema. To treat it, it is important to move the built up fluid to areas of the body where there is still a working lymph system.

One part of reducing lymphedema is using a combination of compression bandages and muscle movements. When the muscles are contracted, the short stretch bandages create a counter-pressure against the skin to press the fluid along. The bandage has a gradient pressure. This means that because there are more layers on the lower limb and fewer layers as you go up the limb, there is more pressure on the lower part of the limb and less as you get to the top. This gradient pressure encourages the fluid to move up the limb. The exercises are most effective when done with short stretch compression bandages. If you wear a compression garment, this will help, but the compression garment has more “give” than the bandages and so is a little less effective during exercises.

The exercises that follow have been designed to give maximum benefit if done in the order given while wearing compression. The sequence also includes stimulating the lymphatic system by “clearing the lymph nodes” and “creating a pathway” to help move the built-up fluid from the limbs up the trunk to the working lymph nodes.

Exercises Guidelines

- This sequence should always be done with compression on.
- The exercises and strokes should be done gently, slowly, and rhythmically.
- The entire sequence should be performed at one time.
- To shorten the sequence, do NOT go faster and do NOT skip exercises. Instead, do fewer repetitions of each exercise.
- Ask your therapist to modify any exercises that cause you pain or discomfort.
- If your limb begins to feel heavy or achy while doing the exercises, stop and rest with it supported in elevation on pillows above the level of your heart until it feels all right. Then resume the sequence.
- Try to follow the breathing sequences with the exercises. To breathe deeply, breathe out slowly for a count of 10. Then slowly and deeply inhale. Your stomach should expand as you inhale. Exhale slowly. Your stomach should go in as you exhale.
- Breathe in during the preparation and relaxation phases of the exercise. Breathe out during the actual movement of the exercise.
- When clearing lymph nodes, work on bare skin. Stretch the skin over the area where the lymph nodes are. Stretch the skin in the direction noted, but keep your hand in the same place.
- When creating a pathway, work on bare skin. Make your strokes soft, slow, and gently. Picture stroking a newborn baby. Start the first strokes near the lymph node and gradually start each stroke farther and farther away. The direction of the strokes should always be towards the lymph nodes.

Casley-Smith Exercises for Lymphedema of the Leg

1. Clear Lymph Nodes



Sitting Up

Breathe deeply for 30 seconds

- Stretch the skin over the lymph nodes in the hollows of your neck just above the collarbones
- Stretch should be gentle half circles
- Direction should be **down** and towards the centre to just above to collarbone

2. Head Turns



Repeat 5 Times

- Inhale
- Turn head to right *as you exhale*
- Inhale
- Turn head back to centre *as you exhale*
- Inhale
- Turn head to left *as you exhale*
- Inhale
- Turn head back to centre *as you exhale*

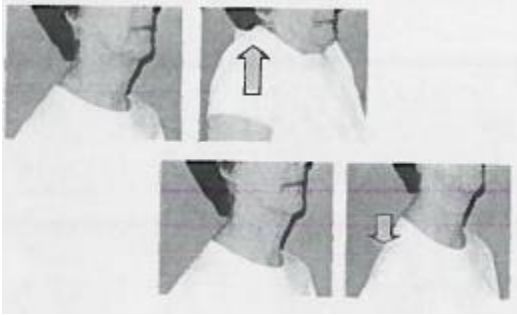
3. Head Rolls



Repeat 5 Times

- Put a rolled up towel behind your neck and grasp the ends of the towel to support your neck
- Inhale
- As you exhale, tilt your head to the left, then roll it slowly around
- Inhale
- As you exhale, tilt your head to the right, then roll it slowly around

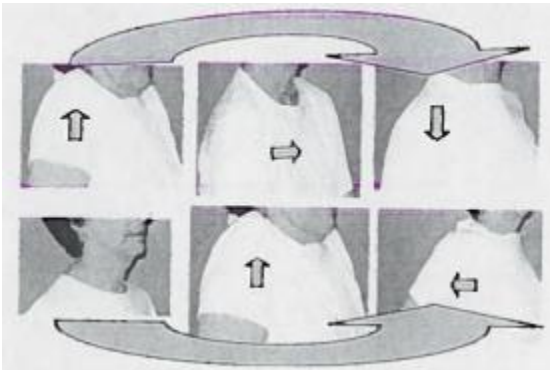
4. Shoulder Shrugs



Repeat 5 Times

- Inhale and bring your shoulders up as high as you can
- Exhale as you bring your shoulders down.
- Give an extra huff as you pull your shoulders even farther

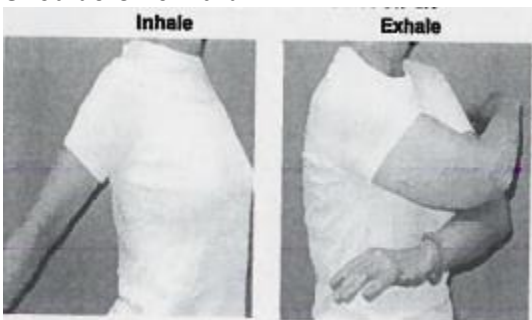
5. Shoulder Rolls



Repeat 5 Times

- Inhale
- As you exhale, lift both shoulders up, **forward**, down, back and up again
 - Repeat 5 times
- Inhale.
- As you exhale, lift both shoulders up, **back**, down, forward and up again
 - Repeat 5 times

6. Shoulders Forward



Repeat 5 Times

- Inhale
- As you exhale, bring the points of your shoulders forward
- Inhale as you bring your shoulders back

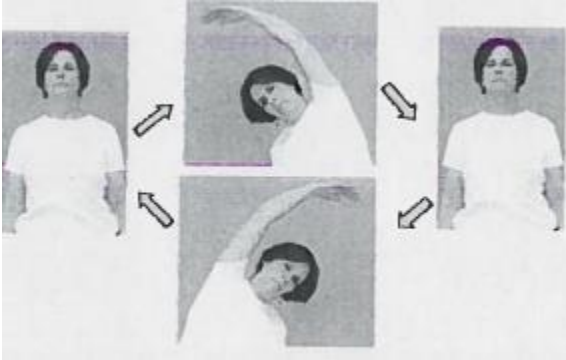
7. Stand Tall and Breathe



Repeat 5 Times

- Inhale
- As you inhale, bring your arms out to your side and up over your head
- As you exhale, slowly droop down with your arms hanging down in front

8. Sidebend and Breathe



Repeat 5 Times

- Stand straight and inhale
- Bend to the right as you exhale
- Inhale as you straighten up
- Bend to the left as you exhale
- Inhale as you straighten up

9. Bend Back and Breathe



Repeat 5 Times

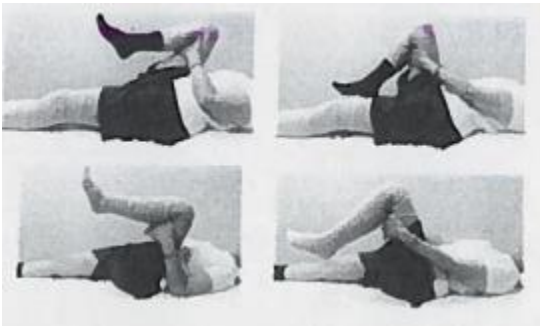
- Put your hands on your low back. Inhale
- Exhale as you bend backwards
- Inhale as you straighten up.

10. Clear Lymph Nodes



- Stretch the skin over the lymph nodes in the hollows of your neck just above the collarbone
- Stretch should be gentle half circles
- Direction should be **down** and towards the centre to just above the collarbone
- Stretch the skin over the lymph nodes in your armpit on the same side as the affected leg
- Stretch should be gentle half circles
- Direction should be **up** and towards your neck but hand should stay in the armpit

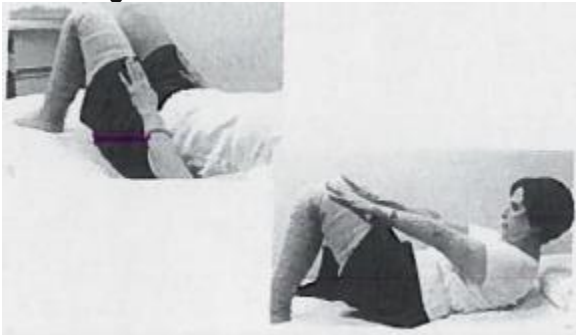
11. Knee Tucks



Repeat 15 Times

- Bend knees
 - Grasp the unaffected thigh from underneath
 - Bring knee toward chest as you exhale
 - Relax the leg partway back and inhale
 - Repeat 15 times
 - Then do the same with the affected leg
- Your low back should remain flat on the floor or mat during the whole exercise. Do not let it roll or arch up**

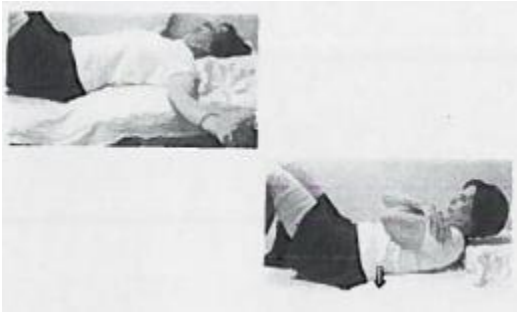
12. Breathing with Forced Exhalation



Repeat 5 Times

- Bend knees
- Place your hands at the top of your thighs
- Inhale
- As you breathe out forcefully, run your hands up towards your knees
- Your shoulders will curl up off the mat as you do this

12a. Alternate Method



Repeat 5 Times

- Inhale deeply
- As you exhale, hunch your shoulders towards each other.
- At the same time, flatten your low back onto the mat or floor

13. Clear Lymph Nodes



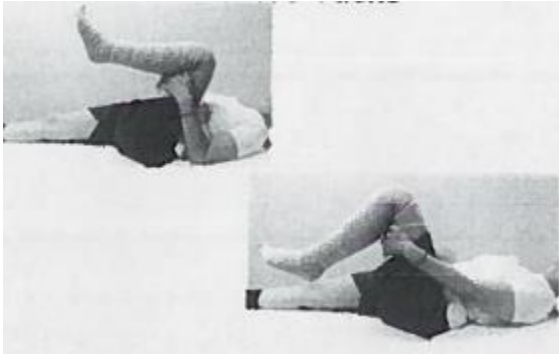
- Stretch the skin over the lymph nodes in the hollows of your neck just above the collarbone
- Stretch should be gentle half circles
- Direction should be **down** and towards the centre to just above the collarbone
- Stretch the skin over the lymph nodes in your armpit on the same side as the affected leg
- Stretch should be gentle half circles
- Direction should be **up** and towards your neck but hand should stay in the armpit

14. Create a Pathway



- Start near your armpit on the affected side.
- Slowly and gently stroke up your side towards the arm pit *on bare skin*
- With each stroke, start lower on your trunk
- The last strokes should start on your lower abdomen and go up to the armpit
- End with half-circle stretch in the armpit

15. Knee Tucks

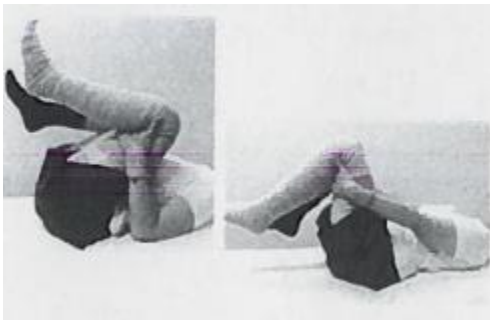


Repeat 15 Times

- Repeat knee tucks with affected leg only

Your low back should remain flat on the floor or mat during the whole exercise. Do not let it roll or arch up

16. Double Knee Tucks

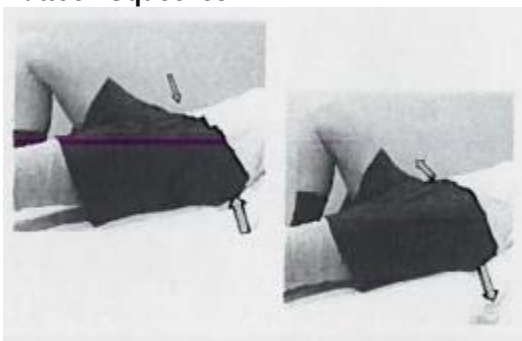


Repeat 15 Times

- Bring both knees toward the chest at the same time as you exhale
- Then lower them enough to straighten your arms as you inhale

Your low back should remain flat on the floor or mat during the whole exercise. Do not let it roll or arch up

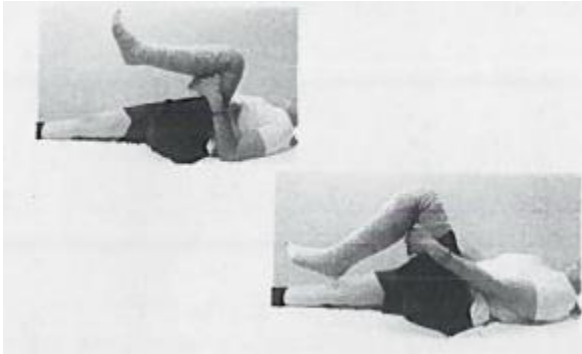
17. Buttock Squeezes



Repeat 5 Times

- Squeeze your buttock muscles together as you exhale
- Hold for a count of 5
- Slowly relax the muscles for a count of 5 as you inhale

18. Knee Tucks

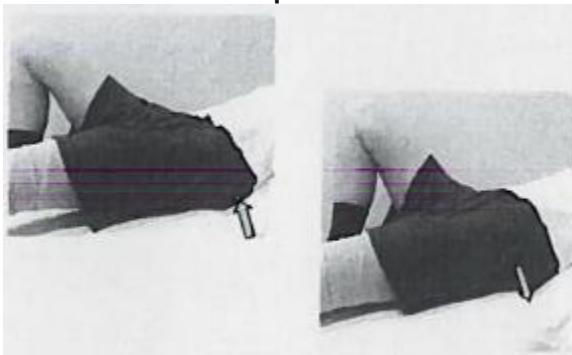


Repeat 15 Times

- Repeat knee tucks with affected leg only

Your low back should remain flat on the floor or mat during the whole exercise. Do not let it roll or arch up

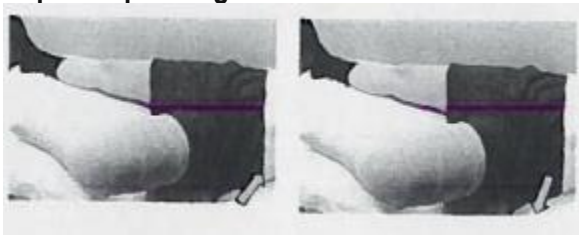
19. One-Sided Buttock Squeezes



Repeat 5 Times

- Tighten the buttock muscles on the *affected side only*
- Hold for a count of 5 as you exhale
- Slowly relax the muscles for a count of 5 as you inhale

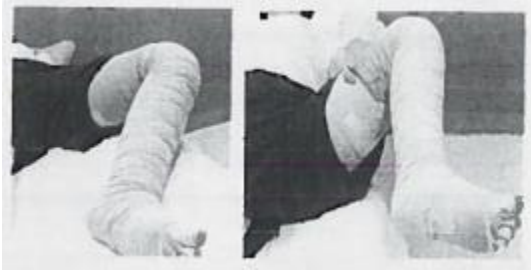
20. Supine Hip-Hiking



Repeat 5 Times

- Bend your affected leg and let it fall gently out to the side
- In this position, tighten your buttock muscles on the affected side
- The effect will be a kind of hip-hiking

21. Sideways Knee Tucks



Repeat 15 Times

- Bend your affected leg and let it fall gently out to the side. Inhale
- Bring your knee up towards your head as you exhale
- Lower your leg enough to straighten your arm as you inhale

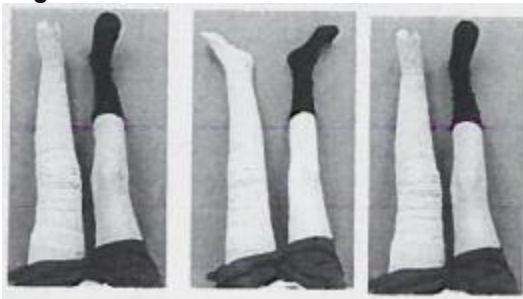
Your low back should remain flat on the floor or mat during the whole exercise. Do not let it arch up

22. Create a Pathway



- Start near your armpit on the affected side. *Do on bare skin*
- Slowly and gently stroke up your side and **back** towards the armpit
- With each stroke, start lower on your trunk, trying to get as much of your **back** as you can
- The last strokes should start on your **low back** and go up to the armpit
- End with half-circle stretch in the armpit

23. Leg Turn-Outs

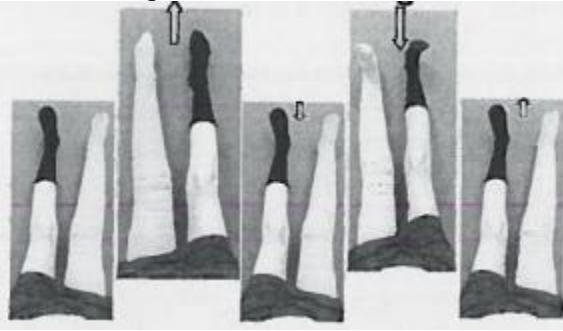


Repeat 5 Times

- Lie with your legs straight out (or propped up on a chair or against the wall). Inhale
- Tighten your buttock muscles until your foot is turned out as you exhale.
- Relax and let your feet turn back

Your low back should remain flat on the floor or mat during the whole exercise. Do not let it arch up

24. Toe-Pointing



Repeat 5 Times

- Lie with your legs straight out (or propped up on a chair or against the wall). Inhale
- Point your toes like a ballerina
- Hold, then relax
- Point your toes towards your nose.
- Hold, then relax.

Your low back should remain flat on the floor or mat during the whole exercise. Do not let it arch up

25. Clear Lymph Nodes

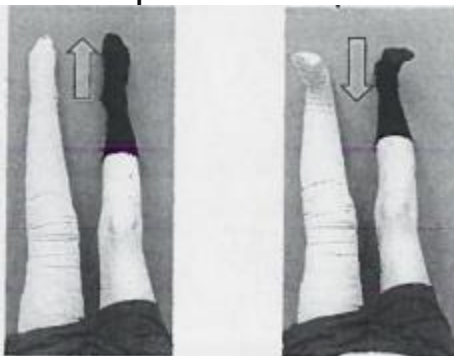


- Stretch the skin over the lymph nodes in your armpit on the same side as your affected leg. *Do on bare skin*
- Stretch should be gentle half circles
- Direction should be **up** and towards your neck but hand should stay in armpit

Only if your therapist advises:

- Stretch the skin over the lymph nodes in the crease at the top of your leg
- Stretch should be gentle scoops
- Direction should be **up** and towards your belly button but hand should stay in the crease. *Do on bare skin*

26. Ankle Pumps



Repeat 15 Times

- Lie with your legs straight out (or propped up on a chair or against the wall).
- Move your ankles so toes are pointing up, then down

Your low back should remain flat on the floor or mat during the whole exercise. Do not let it arch up

27. Ankle Circles

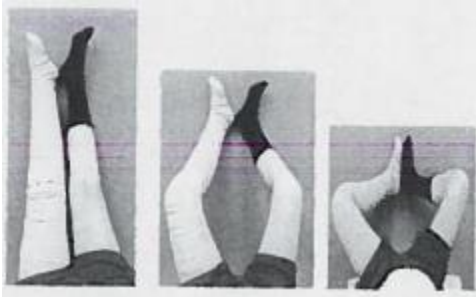


Repeat 5 Times

- Lie with your legs straight out (or propped up on a chair or against the wall).
- Make 5 clockwise circles with your ankles
- Then make 5 counter clockwise circles with your ankles

Your low back should remain flat on the floor or mat during the whole exercise. Do not let it arch up

28. Slow Frog Kicks

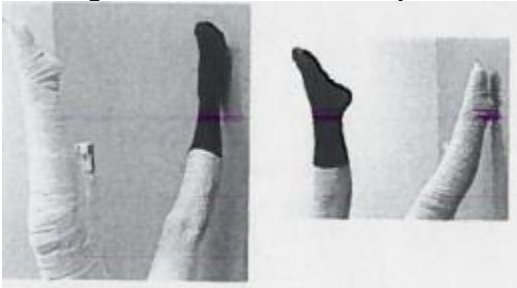


Repeat 5 Times

- Lie with your legs straight out (or propped up on a chair or against the wall).
- Put the heels of your feet together so your toes are pointing out
- Slowly bend and straighten your legs, keeping your heels together

Your low back should remain flat on the floor or mat during the whole exercise. Do not let it arch up

29. Walking in Air – Toes Pointed Up

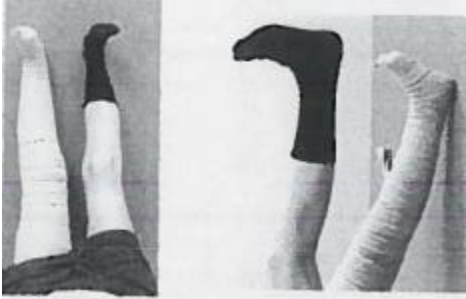


Repeat 5 Times

- Lie with your legs straight out (or propped up on a chair or against the wall).
- Point your toes like a ballerina's
- With your knees straight, move your legs back and forth

Your low back should remain flat on the floor or mat during the whole exercise. Do not let it arch up

30. Walking in Air – Toes Pointed Down

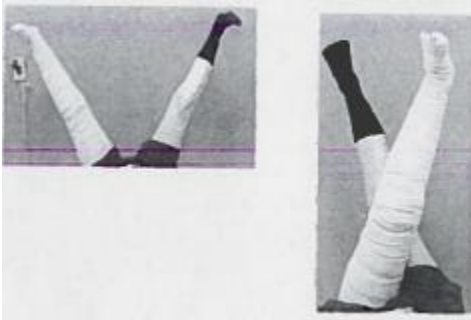


Repeat 5 Times

- Lie with your legs straight out (or propped up on a chair or against the wall).
- Point your toes towards your nose
- With your knees straight, move your legs back and forth

Your low back should remain flat on the floor or mat during the whole exercise. Do not let it arch up

31. Scissoring

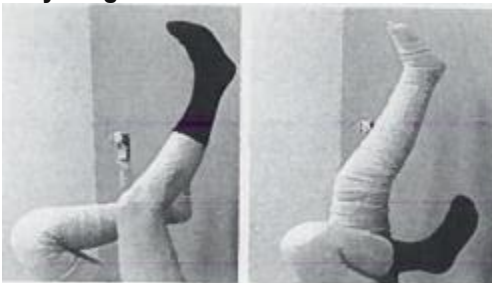


Repeat 5 Times

- Lie with your legs straight out (or propped up on a chair or against the wall). Inhale
- Move your legs out as far as they will go as you exhale
- Then cross your legs

Your low back should remain flat on the floor or mat during the whole exercise. Do not let it arch up

32. Bicycling in Air



Repeat 5-10 Times

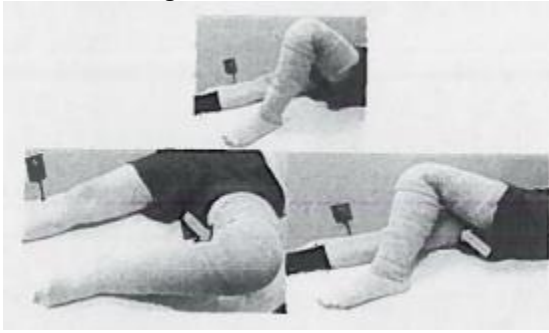
- Make bicycle pedaling movements with your legs up

Alternate Method:

- If you can't lift your legs up, lie with your legs straight out
- Bend one knee at a time and straighten it keeping your foot on the ground

Your low back should remain flat on the floor or mat during the whole exercise. Do not let it arch up

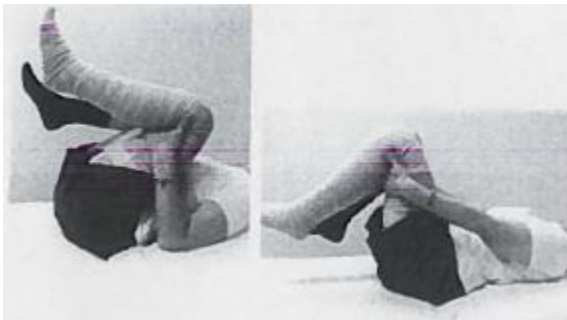
33. Knee Rocking



Repeat 5 Times

- Lie with knees bent
- Rock the knee on the swollen side back and forth

34. Double Knee Tucks

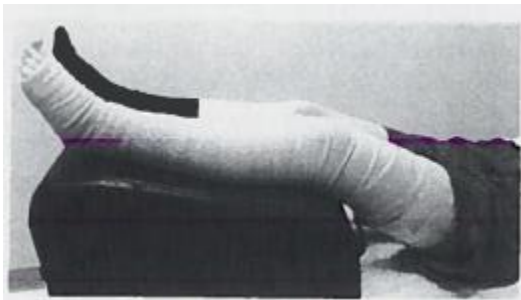


Repeat 15 Times

- Bring both knees toward the chest at the same time as you exhale
- Then lower them enough to straighten your arms as you inhale

Your low back should remain flat on the floor or mat during the whole exercise. Do not let it roll or arch up

35. Relaxation



Rest-Breathe-Clear Noes

- Rest with your legs supported in elevation
- Breathe deeply
- Clear your lymph nodes (*on bare skin*)
 - In your arm pit on affected side
 - At the top of your affected leg (**Only if therapist advises**)
 - Above the collarbone on both sides

List of Exercises

1. Clear Lymph Nodes (*above collarbone*)
2. Head Turns – **repeat 5 x**
3. Head Rolls – **repeat 5 x**
4. Shoulder Shrugs – **repeat 5 x**
5. Shoulder Rolls – **repeat 5 x**
6. Shoulders Forward – **repeat 5 x**
7. Stand Tall and Breathe – **repeat 5 x**
8. Sidebend and Breathe – **repeat 5 x**
9. Bend Back and Breathe – **repeat 5 x**
10. Clear Lymph Nodes (*above collarbone and armpit on affected side*)
11. Knee Tucks – **repeat 15 x on each side**
12. Breathing with Forced Exhalation – **repeat 5 x**
13. Clear Lymph Nodes (*above collarbone and armpit on affected side*)
14. Create a Pathway (*low abdomen to armpit, on affected side*)
15. Knee Tucks – **repeat 15x on affected side**
16. Double Knee Tucks – **repeat 15 x**
17. Buttock Squeezes – **repeat 5 x**
18. Knee Tucks – **repeat 15 x on affected side**
19. One-Sided Buttock Squeezes – **repeat 5 x on affected side**
20. Supine Hip-Hiking – **repeat 5 x on affected side**
21. Sideways Knee Tucks - – **repeat 15 x on affected side**
22. Create a Pathway (*low back to armpit, affected side*)
23. Leg Turn-Outs – **repeat 5 x**
24. Toe-Pointing – **repeat 5 x**
25. Clear Lymph Nodes in Armpit (*and crease at top of leg – if therapist advises it*)
26. Ankle Pumps – **repeat 15 x**
27. Ankle Circles – **5 clockwise, 5 counter clockwise**
28. Slow Frog Kicks – **repeat 5 x**
29. Walking in Air – Toes Pointed Up – **repeat 5 x**
30. Walking in Air – Toes Pointed Down – **repeat 5 x**
31. Scissoring – **repeat 5 x**
32. Bicycling in Air – **repeat 5-10 x**
33. Knee Rocking – **repeat 5 x**
34. Double Knee Tucks – **repeat 15 x**
35. Relaxation – *elevate legs, breathe, clear nodes*