



STEP 8:

# Care for Swelling (Edema)

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## Step 8: Care for Swelling (Edema)

### Introduction

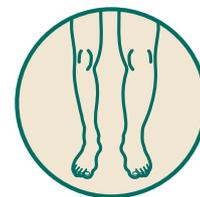
Swelling from any cause requires attention. In all types of swelling, early detection and action to reduce swelling can prevent complications and produce the best outcomes. Complications that may occur include: severely enlarged limbs and body parts, frequent infections and wounds that are hard to heal. Swollen limbs are heavy, painful and difficult to move. This limits the ability to do daily activities and can restrict participation in family, school, work, leisure and community activities. In addition, it is difficult to find footwear and clothes that fit.

If swelling does not go down, or lasts longer than three months, it may become a permanent condition called *lymphedema*. Lymphedema needs to be referred. The high protein content of lymphedema attracts bacteria and increases the risk of infection. These infections are called “acute attacks” and may be life threatening. When lymphedema affects the genital area, referral for surgical treatment may be necessary.

Lymphedema requires lifelong self-care management to control the swelling and infections. Without treatment, the condition worsens and may progress to *elephantiasis*. It is called elephantiasis because the skin becomes hard, thick, knobby and severely enlarged, resembling an elephant’s leg.

Early treatment and self-management produce the best results and can prevent progression. Teaching the affected person and their family/caregiver to practice daily skin and nail care, elevation and frequent movement of the swollen body part is essential. Additional reduction can be experienced when Manual Edema Mobilization (MEM) is added to self-care practices. MEM includes deep “belly breathing,” light lymphatic self-massage, exercise and light compression with foam, bandages or Lycra® undergarments or clothing.

*Note: If the swelling is caused by infection, massage should not be used as it can spread the infection by moving fluid through the nodes (specific filter points which remove germs from the body) faster, before all germs can be destroyed. If it is unclear whether or not there is an infection, massage only one set of nodes that is closest to the swollen area. If there are no increased signs of infection, then massage can include additional nodes.*



## Goal

Swelling is detected early and action is taken to prevent complications and progression to lymphedema.

## Key Messages

1. All swelling requires immediate attention.
2. Early detection and action to reduce swelling can prevent complications and produce the best outcomes.
3. Early care for swelling and good self-care practices can prevent progression of the swelling to lymphedema and/or decrease frequency of “acute attacks” in lymphatic filariasis.
4. It is essential to teach the affected person and their family/caregiver the signs of infection and to practice daily skin and nail care, elevation and frequent movement of the swollen body part.
5. Additional reduction can be experienced when Manual Edema Mobilization (MEM) is added to self-care practices. MEM includes deep “belly breathing,” light lymphatic self-massage, exercise and light compression with foam, bandages or Lycra® undergarments or clothing.
6. Decreasing the swelling usually lessens the pain and improves movement/mobility.
7. If care does not improve the condition, confirm that care practices are being done and being done correctly.
8. If swelling gets worse, seek help from the community health worker and/or referral center.

## References

- Artzberger, S. (2002). Manual edema mobilization: Treatment for edema in the sub-acute hand. In E. Mackin, A. Callahan, T Skirven, L Schneider and L Osterman (Eds.), *Rehabilitation of the hand and upper extremity* (5th ed.) St Louis: Mosby, 899-913
- Artzberger, S., & Priganc, V. (2011). Manual edema mobilization: An edema reduction technique for the orthopedic patient. In *Rehabilitation of the hand and upper extremity* (6th ed.). Elsevier.
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- Lehman, L. (2012). *Buruli ulcer drug trial protocol: Patient home self-care*. WHO.
- *Manual edema mobilization and lymphedema patient self-management cards*. (2007). Visual Health Information, <http://www.vhikits.com>
- *Organizing a lymph management program at the health district level*. (2010). Atlanta: Centers for Disease Control and Prevention.
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- *Wound and Lymphoedema Management*. (2010). Geneva: WHO.

## Step 8: Care for Swelling (Edema)

### A Quick Supervisory Checklist for Step 8

Care of Swelling	Yes	No	Not Obs	Observations & Recommendations
1. Identifies edema and takes appropriate action				
<b>Teaches affected person and caregiver how to:</b>				
2. Elevate affected part, exercise and move frequently combined with “belly breathing” and light compression				
3. Confirm if swelling is better or worse				

### Guidelines for Teaching the Module

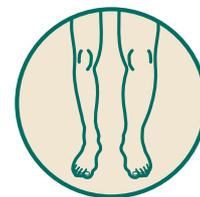
Health Coach/Facilitator should use the local language and ensure that all terms are found in the local language.

**Estimated time to teach the task: 3 hours**

### Learning Objectives

At the end of the module, participants will be able to:

1. Detect swelling by comparing one side of the body with the other side.
2. Identify the most common causes of swelling (infection, limbs in gravity-dependent positions without movement, inflammation and diseases affecting the heart, blood, vessels and kidneys).
3. Describe the basic blood flow (circulatory system) of the body (heart, lungs, arterial, venous, lymphatic).
4. List complications that result from swelling.
5. Demonstrate how to elevate and move to reduce swelling.
6. Identify when additional action(s) are needed to reduce swelling.
7. List additional actions that can be used when elevation and movement aren't enough to reduce and control swelling (deep “belly breathing,” light lymphatic self-massage, light compression with foam and bandages, diet, medicines).
8. Know when infection is present and that massage of nodes can spread the infection by moving the fluid through the nodes faster, not allowing all germs (pathogens) to be destroyed.
9. Demonstrate the correct techniques of deep “belly breathing” and lymphatic self-massage (Manual Edema Mobilization – MEM).
10. List situations when compression with foam and bandages should not be used (poor circulation, a blood clot in a vein; a infected wound with pus, a warm, inflamed and painful limb, severe pain with compression).
11. Demonstrate correct compression with foam and bandages for the upper and lower extremities.



## List of Teaching Activities and Learning Materials

### Activity 1

Swelling: Detection, Care and Causes

### Activity 2

Reduce Swelling with Elevation, Light  
Compressive Bandaging and Movement

### Activity 3

MEM Components of “Belly Breathing,” Exercise  
and Self-Massage

### Activity 4

Light Compression with Foam and Bandages

### Handouts

- 8.1 Instructions for Screening Swelling (Edema)
- 8.2 Individual Impairment Record Form (IIRF) – Swelling (Edema) Section
- 8.3 Swelling and Lymphedema
- 8.4 Preventive and Referral Actions for Swelling (Edema)
- 8.5 Home Self-Care for Edema of Upper Limb
- 8.6 Home Self-Care for Edema of Lower Limb
- 8.7 Home Recording Form for Self-Care Practices
- 8.8 Foundation for Edema Care – Upper Limb: Manual Edema Mobilization (MEM) – Breathing, Exercise and Self-Massage by Artzberger 2007, VHI Kits
- 8.9 Foundation for Edema Care – Lower Limb: Manual Edema Mobilization (MEM) – Breathing, Exercise and Self-Massage by Artzberger 2007, VHI Kits
- 6.7 Artzberger Hand and Finger Bandaging
- 6.8 Artzberger Foot and Toe Bandaging

## Step 8: Care for Swelling (Edema)

### Activity 1: Swelling: Detection, Care and Causes

#### Handouts

- 8.1 Instructions for Screening Swelling (Edema)
- 8.2 Individual Impairment Record Form (IIRF) – Swelling (Edema) Section
- 8.3 Swelling and Lymphedema
- 8.4 Preventive and Referral Actions for Swelling (Edema)

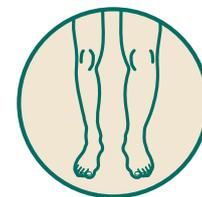
#### Equipment & Materials

- Flip chart stand and paper
- 4 – 6 colored markers

#### Instructions for Teaching the Activity

Room Arrangement: Participants sit in a semicircle with two chairs facing the group (one for a volunteer or patient and the other for the Health Coach).

- 1. Health Coach distributes and reviews handouts, 8.1 Instructions for Screening Swelling (Edema), 8.2 IIRF – Swelling (Edema) Section.**
- 2. Health Coach asks for a volunteer to sit in the front of the group and exposes arms and legs for the group to check for swelling.**
  - Participants observe the Health Coach looking for swelling by comparing one side of the body with the other side as written in *8.1 Edema Screening Instructions*.
  - Participants observe recording on the *8.2 IIRF – Swelling (Edema) Section*.
- 3. If there is a patient with edema, the Health Coach will ask them to sit in the front of the group and exposes arms and legs for the group to inspect the areas with edema.**
  - Participants observe the location of the swelling and record the location on the *8.2 IIRF – Swelling (Edema) Section*.
  - Participants are asked what could be done to decrease the swelling.
- 4. Health Coach asks participants the following questions, and responses are recorded on a flip chart.**
  - When and where have you noticed swelling in yourself and others?
  - What do you think caused the swelling?
  - What kind of difficulties or complications can result from the swelling?
  - What can be done to reduce the swelling?
- 5. The Health Coach reinforces the following about infection and pre-existing hard swelling:**
  - **Signs and symptoms of infection:** generalized redness or red streaks, increased warmth, swelling and pain, body chills or fever, pus-like drainage or foul smell from the wound.
  - **Treatment:** Systemic antibiotics are used as soon as possible to treat infection. Antibiotic ointments are not effective.
  - **Care:** No massage of areas with infection.
  - **Pre-existing hard swelling:** The difficulty moving fluid out can facilitate infection growth and reduce the ability to fight off infections.
- 6. Health Coach distributes the handouts 8.3 Swelling and Lymphedema and 8.4 Preventive and Referral Actions for Swelling (Edema).**
- 7. Participants review the handouts and complete information missing on the flip chart.**



## Activity 2: Reduce Swelling with Elevation, Light Compressive Bandaging and Movement

### Handouts

- 8.4 Preventive and Referral Actions for Swelling (Edema)
- 8.5 Home Self-Care for Edema of Upper Limb
- 8.6 Home Self-Care for Edema of Lower Limb
- 8.7 Home Recording Form for Self-Care Practices

### Equipment & Materials

- Flip chart stand and paper
- 4 – 6 colored markers
- 2 chairs
- 2 sheets of thin furniture foam (approximately 3cm x 9cm x 1m)
- 1 sheet of thick furniture foam (approximately 20cm x 50cm x 50cm)
- 8 “short stretch” bandages
- 1 pair scissors
- 1 utility knife or serrated knife
- Cord or material to tie foam roll

### Instructions for Teaching the Activity

Room Arrangement: Participants sit in a semicircle with two chairs facing the group.

**1. Health Coach distributes handouts, 8.4 Preventive and Referral Actions for Swelling (Edema), 8.5 Home Self-Care for Edema of Upper Limb, 8.6 Home Self-Care for Edema of Lower Limb, 8.7 Home Recording Form for Self-Care Practices.**

**2. Health Coach reviews the handouts with the participants.**

**3. Health Coach asks for two volunteers to sit in the front chairs. One volunteer is labeled as having a swollen arm/hand and the other is labeled as having a swollen leg/foot. If possible, use a patient(s) with swollen arm/hand and/or leg/foot instead of a volunteer.**

**4. Health Coach asks for two different volunteers to use the information on the handouts and materials to demonstrate the following care for “soft” swelling (edema):**

- **Care for Arm and Hand Swelling**
  - Demonstrate positioning and bandaging used during the day and used at night.
  - Demonstrate movement/exercise that reduces swelling.

- **Care for Leg and Foot Swelling:**

- Demonstrate positioning and bandaging during the day and at night.
- Demonstrate movement/exercise that reduces swelling.

**5. Health Coach and participants observe demonstrations and make additional comments or corrections.**

**6. The Health Coach reinforces the following care differences between soft swelling and hard swelling:**

- “Soft swelling” will decrease when the arm/hand and leg/foot are raised up/elevated along with frequent movement.
- “Hard swelling” will not reduce without using light compressive bandages 23 of 24 hours every day. The bandages will provide warmth and light compression which helps soften the hard edema. It becomes fluid-like, allowing the edema to flow out. Activities 3 and 4 will address additional care activities.
- When bandages are removed in “hard swelling,” the swelling will return within one hour until the “hard edema” is out and skin contracts.

**7. Health Coach emphasizes the importance of frequent strong muscle contraction with at least 70 degrees of movement to reduce swelling. The Health Coach asks all participants to do the following movements 10 times:**

- **Upper Limb – Arm and Hand**
  - Raise the arms up and down.
  - Tightly close the hand and open the fingers and thumb **as much as possible.**
- **Lower Limb – Leg and Foot**
  - Sitting, move the ankle in circles and then move the foot up and down.
  - Standing, raise heels to stand on tiptoes then back on heels raising toes up.
  - Standing with back supported by a wall, squat, sliding the back down the wall. Hold for 10 seconds and then return to standing.

*Note: Health Coach reinforces the importance of the pumping action of the muscles in reducing swelling.*

## Step 8: Care for Swelling (Edema)

### Activity 3: MEM Components of “Belly Breathing,” Exercise and Self-Massage

#### Handouts

- 8.8 Foundation for Edema Care – Upper Limb: Manual Edema Mobilization (MEM) – Breathing, Exercise and Self-Massage by Artzberger 2007, VHI Kits
- 8.9 Foundation for Edema Care – Lower Limb: Manual Edema Mobilization (MEM) – Breathing, Exercise and Self-Massage by Artzberger 2007, VHI Kits

#### Equipment & Materials

- Flip chart stand and paper
- 4 – 6 colored markers
- Cane stick/Round stick/Dowel rod (wood or PVC) – cut into 60cm lengths for each participant and Health Coach
- 1 cloth (cotton or plastic) to lay on the floor

#### Instructions for Teaching the Activity

Room Arrangement: Participants sit in a semicircle.

- 1. Health Coach explains to all participants that they will be learning how to do deep “belly breathing” and light lymphatic massage to move fluid from the limbs into the body’s circulation where it will be removed from the body by the kidneys.**

*Note: This causes an increased need to urinate. Therefore, urination before performing this activity is recommended.*

- 2. Health Coach distributes the following handouts:**  
**8.8 Foundation for Edema Care – Upper Limb: Manual Edema Mobilization (MEM) – Breathing, Exercise and Self-Massage by Artzberger 2007, VHI Kits and 8.9 Foundation for Edema Care – Lower Limb: Manual Edema Mobilization (MEM) – Breathing, Exercise and Self-Massage by Artzberger 2007, VHI Kits**

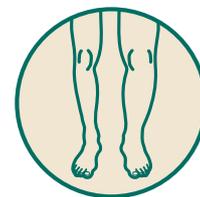
- 3. Health Coach follows the sequence on handouts 8.8 and 8.9. The Health Coach demonstrates each technique. Participants practice deep “belly breathing,” exercise and light self-massage over critical sites (MEM).**

- 4. Deep “Belly Breathing” – The Health Coach and participants practice deep “belly breathing” (diaphragmatic breathing) using the following sequence:**

- While sitting, place hands over stomach.
- Inhale through the nose, making the navel move out toward hands. If unable to do, tell the person to push their stomach out as if to show someone they are pregnant and to inhale at the same time filling the stomach.
- Slowly, exhale through puckered lips, hands follow navel in. Try to squeeze the buttocks at the same time.
- Health Coach checks each participant to see that the breathing is being done correctly. (Place hand on chest to see that it does not move.)

- 5. Health Coach explains and demonstrates how deep belly breathing can be used during daily activities (e.g. pounding fufu, hoeing) and at rest.**
- 6. If possible participants practice “belly breathing” lying down on the floor, with a partner checking to see that the breathing is done correctly. Repeat breathing at least three to four times and up to 10 times.**

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## Activity 3: MEM Components of “Belly Breathing,” Exercise and Self-Massage (continued)

- 7. Exercise – “Figure 8” – Health Coach explains that exercise should be done immediately following “belly breathing.” The Health Coach distributes sticks/rods/canes and teaches participants to do a “figure 8” exercise for the trunk and arm. Health Coach leads participants in the following exercise:**
- Standing, cane/stick is held at waist height with arms straight.
  - Cane/Stick is raised above the head.
  - Twisting and bending at the trunk, the Cane/Stick is dipped down and up to draw a large figure eight pattern.
  - Return stick/cane stretched above the head. Repeat five to 10 times.
- 8. Light Self-Massage at Axilla (MEM) – Health Coach teaches participants light self-massage at axilla (armpit) for arm/hand and leg/foot swelling.**
- Start at uninvolved side first.
  - Using full weight of the flat hand with flat fingers in the hollow of the arm (hairy part), make 10 to 20 circles in the same place, pausing briefly after each circle.  
*Note: If caregiver is doing this, they should have a cloth over their hand.*
  - Repeat in-place circles at involved armpit side.
- 9. Health Coach teaches additional exercises to participants and participants practice:**
- **Exercise – “Chicken Wings”**
    - With thumbs in armpits, or on chest, and elbows at sides, lift elbow toward ears then lower to sides. Repeat five to 10 times.
  - **Exercise – “Buttocks squeeze”**
    - While sitting, squeeze buttocks together; hold for 10 seconds. If difficult to understand how to do, have them think of squeezing tight to hold a \$100 bill. Repeat five to 10 times.
- 10. For arm swelling, the Health Coach asks participants to LIGHTLY stroke from back of hand to shoulder 15 times, then stroke from palm of hand to armpit 15 times.**
- 11. Health Coach asks participants to repeat deep “belly breathing”**
- While sitting, place hands over stomach.
  - Inhale through the nose, making the navel move out toward hands. Have patient place hand on chest. If it rises, they have to start over and think about pushing stomach out as if to show someone they are pregnant and to inhale at the same time filling the stomach.
  - Slowly, exhale through puckered lips, hands follow navel in with squeezing the buttocks.
  - Health Coach checks each participant to see that the breathing is being done correctly. (Place hand on chest to see that it does not move.)
- 12. Light Self-Massage at Hip Crease (MEM) – Health Coach teaches participants light self-massage at hip crease for leg and foot swelling.**
- With small finger side of hand against hip crease on involved side, gently press heel of hand down and then roll it upward toward outside of hip. Repeat 10 times.
- 13. Health Coach reminds participants of the importance of doing exercise immediately following deep “belly breathing.”**

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## Step 8: Care for Swelling (Edema)

### Activity 3: MEM Components of “Belly Breathing,” Exercise and Self-Massage (continued)

#### 14. Health Coach asks all participants to do the following exercises:

- **Exercise – “Buttocks Squeeze”**
  - While sitting, squeeze buttocks together, Hold for 10 seconds. If difficult to understand how to do, have them think of squeezing tight to hold a \$100 bill. Repeat five to 10 times.
- **Exercise – “Leg Swing Forward and Backward”**
  - Stand and support self while swinging uninvolved leg and hip forward and backward. Repeat five to 10 times. Repeat with other leg and hip.
- **Exercise – “Trunk Backward Arch and Forward Bend”**
  - Inhale through nose while extending arms above head, arching back and fisting hands.
  - Exhale through pursed lips while bending at the waist, keeping arms and hands stretched to the floor. Repeat five to 10 times.

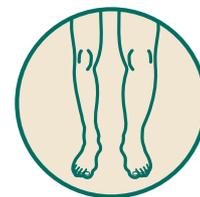
#### 15. For leg swelling, the Health Coach asks participants to LIGHTLY stroke from top of foot to hip joint 15 times and from back of ankle to buttocks 15 times.

#### 16. Health Coach asks participants to repeat deep “belly breathing.”

#### 17. Health Coach summarizes the importance of doing the following:

- Combine breathing with exercise/activity as often as possible throughout the day.
- Do breathing and exercises slowly.
- For arm swelling, LIGHTLY stroke from back of hand to shoulder and then stroke from palm of hand to armpit.
- For leg swelling, LIGHTLY stroke from top of foot to hip joint and from back of ankle to buttocks.
- Drink fluids before, during and after breathing and exercise activities.

*Note: Observe for complaints of shortness of breath, fatigue, chest pain, etc. following breathing, exercise and MEM. If observed, refer to doctor for evaluation and possible need for diuretics.*



## Activity 4: Light Compression with Foam and Bandages

### Handouts

- 6.7 Artzberger Hand and Finger Bandaging
- 6.8 Artzberger Foot and Toe Bandaging

### Equipment & Materials

- Flip chart stand and paper
- 4 – 6 colored markers
- 2 chairs
- Furniture foam strips (approximately 0.5mm–1cm x 10cm x 1m), 4 strips per pair
- Cotton cloth strips (8-10cm x 1.2m) and roll, 4 strips per pair
- Cotton cloth strips or bandage (1cm x 1.2m) and roll, 4 strips per pair
- 8cm crepe bandage, 4 bandages per pair
- 10cm crepe bandage, 4 bandages per pair
- 2cm crepe bandage, 4 bandages per pair
- Scissors, 1 per pair
- Rolls of masking tape or sticky tape, 1 roll per pair

### Instructions for Teaching the Activity

Room Arrangement: Participants sit in a semicircle.

#### 1. Health Coach asks participants the following questions and records the responses on a flip chart.

##### • Questions:

- What is the difference between bandaging for wound dressings and bandaging used to reduce swelling?
- What are some of the problems you have seen with bandaging?
- In what situations would compression with foam and bandages be useful?
- Are there any situations where compression with foam and bandages should not be used?

#### 2. Health Coach distributes and reviews the following handouts: *6.7 Artzberger Hand and Finger Bandaging* and *6.8 Artzberger Foot and Toe Bandaging*.

#### 3. Health Coach calls attention to conditions when compression with foam (0.5–1cm thickness) and bandages are not used:

- Poor circulation.
- A blood clot in a vein.
- A wound with pus, warm, red and painful.
- Inflamed and painful limb, severe pain with compression.

#### 4. Health Coach reviews the process for applying foam and light compression bandages:

- Prepare the limb before bandaging.
- Clean (see personal cleanliness step 3).
- Moisturize (see personal cleanliness step 3).
- Protect skin with a light cloth and cover with a layer of foam (0.5 – 1cm thickness).
- If an entry lesion/crack or wound is present, cover with a dressing to control the wound drainage to prevent contamination of the compression bandage.
- Start bandaging at the end of the limb and work upwards.
- Use consistent tension when applying the bandage. The light compression bandage pressure must not limit blood. Two to three fingers should be able to go under the bandage at both ends. Pressure is “cone” shaped where the distal part is slightly tighter than the top.
- Avoid wrinkles.
- Always check that the bandage does not restrict movement.
- Bandages should be removed daily to bathe and perform skin care.
- Clean bandages should then be reapplied.

#### 5. Health Coach demonstrates cutting of foam into strips, application of foam and bandaging method for hand/arm and foot/leg on a volunteer.

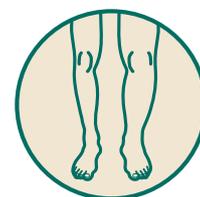
#### 6. Participants divide into pairs and practice compression method with foam and bandages, one doing hand/arm and the other doing foot/leg.

#### 7. Health Coach checks that the bandaging is done correctly.

## Step 8: Care for Swelling (Edema)

### Conclusion

In conclusion, the Health Coach summarizes key messages and clarifies any misconceptions.



## Handout 8.1: Instructions for Screening Swelling (Edema)

### Preparation for screening swelling:

Gather together equipment and supplies: sensory test device(s), IIRF record form, pen or pencil.

Wash hands with soap and water before and after each screen.

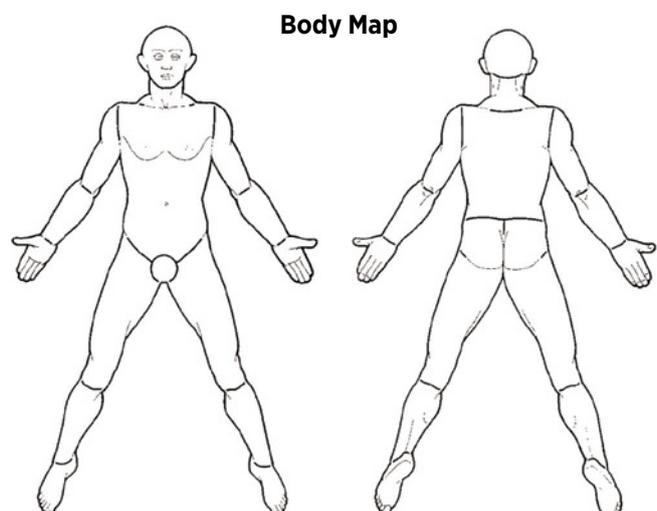
Complaints	Ask
Patient or family complaints or observations	<p>Do you currently have any of the following complaints: limb feels heavy, skin feels tight, leathery, hard, itches, burns, tingles, feels numb, feels like ants crawling, feels like pins and needles, painful, feels cold or hot, skin has enlarged wart-type areas? If yes, what symptom(s)?</p> <p><b>Record on IIRF form:</b> Circle symptom(s), Yes, R and/or L.</p>
Swelling in arm(s), leg(s) or other	<p>Do you have any swelling in arms, legs, other? If yes, circle arms, legs or fill in other: _____</p> <p><b>Record on IIRF form:</b> Circle symptom(s), Yes, R and/or L.</p>
History	Ask
Previous problems with swelling	<p>Have you ever had swelling before? If yes, when and where?</p> <p><b>Record on IIRF form:</b> Circle Yes, R and/or L. Record when and where.</p>
Areas with swelling	Compare both sides and determine if there is swelling
Upper Limb (UL)	<p>Compare both sides and determine if there is swelling in the knuckles, wrist, forearm, elbow and/or upper arm:</p> <ul style="list-style-type: none"> <li>• Raise arms up to shoulder height with elbows extended. Make a tight fist with both hands and observe the knuckles and rest of the upper limb.</li> <li>• Bend elbows and touch clavicles with each hand. Observe swelling at the bony prominence of the elbow.</li> </ul> <p><b>Record on IIRF form:</b> Circle Yes, R and/or L. Record total number of Yes responses for UL. Mark area with swelling on body chart.</p>
Lower Limb (LL)	<p>Compare both sides and determine if there is swelling in the toes/feet, ankles, lower leg, knee and/or thigh:</p> <ul style="list-style-type: none"> <li>• Sit with knees slightly flexed with feet on the floor. Observe swelling in toes, ankles, knees and thighs.</li> </ul> <p><b>Record on IIRF form:</b> Circle Yes, R and/or L. Record total number of Yes responses for LL. Mark area with swelling on body chart.</p>
Other Areas: face, eyes, breast, trunk, genitalia, other	<p>Observe if there is swelling in other locations: Face/Eyes, Breast, Trunk, Genitalia, Other: _____</p> <p><b>Record on IIRF form:</b> Circle Yes, R and/or L. Record total number of Yes responses for Other. Mark area with swelling on body chart.</p>

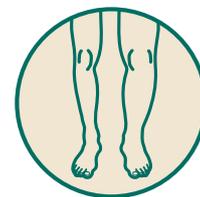
## Handout 8.2: Individual Impairment Record Form (IIRF) – Swelling (Edema) Section

(See handout 8.1 for instructions on how to do screen)

Complaints			
Limb feels “heavy,” skin feels tight, leathery, hard, itches, burns, tingles, feels numb, feels like ants crawling, feels like pins and needles, painful, feels cold or hot, skin has enlarged wart-type areas.	Yes	R	L
Swelling in arm(s), leg(s), other: _____	Yes	R	L
History			
Previous problems with swelling? When? _____ Where? _____	Yes	R	L
Examination of areas with swelling (edema). Compare both sides.			
<b>Upper Limb (UL) – arm and hand:</b> Raise arms up to shoulder height with elbows extended. Make a tight fist with both hands and observe the knuckles and rest of the upper limb.			
• Knuckles have swelling	Yes	R	L
• Wrist has swelling	Yes	R	L
• Forearm swelling	Yes	R	L
Bend elbows and touch clavicles with each hand. Observe swelling at the bony prominence of the elbow			
• Elbow has swelling	Yes	R	L
• Upper arm has swelling	Yes	R	L
Total number of Yes responses for UL			
<b>Lower Limb (LL) – legs and feet:</b> Sit with knees slightly flexed with feet on the floor. Observe and compare both lower limbs.			
• Toes/feet have swelling	Yes	R	L
• Ankle has swelling	Yes	R	L
• Lower leg has swelling	Yes	R	L
• Knee has swelling	Yes	R	L
• Thigh has swelling	Yes	R	L
Total number of Yes responses for LL			
<b>Other Areas:</b> Compare both sides			
• Face/eyes have swelling	Yes	R	L
• Breast has swelling	Yes	R	L
• Trunk has swelling	Yes	R	L
• Genitalia has swelling	Yes	R	L
• Other areas with swelling: _____	Yes	R	L
Total number of Yes responses for Other Areas			

Key for Recording	
Skin Lesion	○
Crack	≡
Wound	∩
Scar Location	×
Joint with Movement Limitations	↓
Swelling	┌
Location of Amputation	—





## Handout 8.3: Swelling and Lymphedema

**Note:** If swelling does not go down or lasts longer than three months it may become a permanent condition called lymphedema. Most swelling is caused by damage to the lymph system from trauma, surgery, disease, cancer, paralysis, and chronic venous insufficiency.

Identify swelling early and take action to decrease the swelling as quickly as possible. This will keep the soft swelling from getting hard.

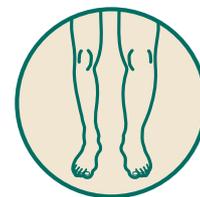
<p><b>Patient History</b></p>	<p>What started the swelling?</p> <ul style="list-style-type: none"> <li>• Dependent position of limbs for a long period of time standing or sitting</li> <li>• Health condition or disease</li> <li>• Surgery (mastectomy, reconstructive surgery, other)</li> <li>• Surgical removal of lymph nodes and/or radiation</li> <li>• Trauma to tissue destroying multiple lymphatics</li> <li>• After childbirth leg(s) swelled and only reduced a little</li> <li>• After repetitive impact in sports, work or other</li> <li>• Obesity</li> <li>• Repeated deep venous thrombosis</li> <li>• Live in or have visited endemic areas for lymphatic filariasis</li> </ul>
<p><b>Observation and physical exam</b></p>	<p>Do you see any of these things? (be sure to look at the trunk, head, and neck)</p> <ul style="list-style-type: none"> <li>• Multiple new or old scars</li> <li>• Increase in fluid retention in tissue near incisions or scars</li> <li>• Decrease in movement (range of motion – ROM)</li> <li>• Decrease in muscle strength</li> <li>• Decrease in sensation</li> <li>• Decrease in function</li> <li>• Fatigue</li> <li>• Way of walking is different</li> </ul>
<p><b>Skin exam</b></p>	<p>Does the skin feel or look different?</p> <ul style="list-style-type: none"> <li>• “Hard” (indurated) limbs or areas with pitting that last 30+ seconds or hardly indent (fibrosis)</li> <li>• “Hard” areas do not indent (fibrosis)</li> <li>• “Orange peel” indents (frequent cellulitis or reoccurring skin ulceration)</li> <li>• Lumps, bumps, nodules</li> <li>• Thickening of tissue at base of big toe or middle joint of toe/finger is square in appearance and skin cannot be lifted (Stemmer’s sign)</li> </ul>
<p><b>Other exams for lymphedema diagnosis</b></p>	<p>Referral-level exams:</p> <ul style="list-style-type: none"> <li>• Ultrasound to see live worms in scrotal lymphatic filariasis</li> <li>• Computed tomography to see number of nodes. If fewer nodes, may be a congenital cause; “lymphatic lakes” seen</li> <li>• MRI</li> <li>• Lymphoscintigraphy – best to see present or non-present lymphatic structures in the extremities. Radioactive material injected into subcutaneous tissues and gamma camera traces radioactive material. (six-hour test)</li> </ul>

## Step 8: Care for Swelling (Edema)

### Handout 8.4: Preventive and Referral Actions for Swelling (Edema)

Preventive Actions	Details
1. Good personal hygiene	<ul style="list-style-type: none"> <li>• Gently use clean cloth to wash swollen limbs and in between skin folds, fingers and toes with soap and water.</li> <li>• Gently dry the limb and in between skin folds, fingers and toes.</li> <li>• If entry lesions seen between toes/fingers or skin folds, apply topical anti-fungal cream to the affected areas.</li> <li>• Never put tissue paper between folds. If needed, use cloth and change several times a day.</li> </ul>
2. Footwear	<ul style="list-style-type: none"> <li>• Select footwear that protects feet from dirt and injury.</li> <li>• It should fit correctly and adjust to the volume changes of the feet.</li> </ul>
3. Elevation (effective only for soft fluid edema)	<ul style="list-style-type: none"> <li>• Raise the elbow to shoulder height, the hand higher than the heart and the feet higher than the hips as much as possible day and night unless elevation causes pain.</li> </ul>
4. Combine strong muscle contraction (“pumping exercise”) with elevation of affected limb during the day and at night	<p>See handouts <i>8.5 and 8.6 Home Self-Care for Edema</i>.</p> <p><b>Upper Limb:</b></p> <ul style="list-style-type: none"> <li>• When sitting or standing try to keep the affected arm and hand higher than the heart. Support arm on back of chair and combine with frequent tight squeezing of affected hand to pump the edema out.</li> <li>• At night, position the affected arm and hand with pillow or foam roll so they are higher than the heart.</li> </ul> <p><b>Lower Limb:</b></p> <ul style="list-style-type: none"> <li>• When sitting, try to keep the affected leg up combined with moving the foot in circles, up and down, squeezing and stretching toes to pump out swelling.</li> <li>• When standing, frequently go up and down on tiptoes to pump out swelling.</li> <li>• At night, position the affected leg and foot with pillow or foam roll so they are higher than the heart.</li> </ul>
5. Move as frequently as possible	<ul style="list-style-type: none"> <li>• Do daily activities and exercise.</li> <li>• Exercise: Bend at waist to touch floor, reach up with arms stretching the trunk and arms, do “chicken wings” moving arms up and down, tighten buttocks, swing legs forward and backward.</li> </ul>
6. Combined breathing, exercise and Manual Edema Mobilization – MEM	<p>See handout <i>8.8 Foundation for Edema Care</i></p> <ul style="list-style-type: none"> <li>• Combine “belly breathing,” exercise and light node stimulation (Manual Edema Mobilization – MEM) at navel, at armpits and hip crease (inguinal) every two hours or as often as possible.</li> </ul>
7. Use light compression	<ul style="list-style-type: none"> <li>• Use constant light pressure on swollen areas using lightweight Lycra®-type sleeves, pants or thin foam with light bandaging from tip of fingers/toes up to arm/leg.</li> </ul>

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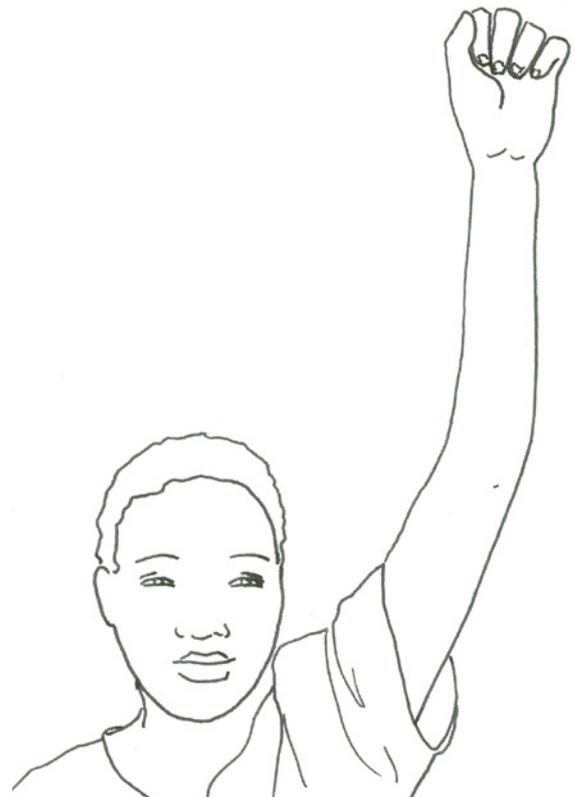
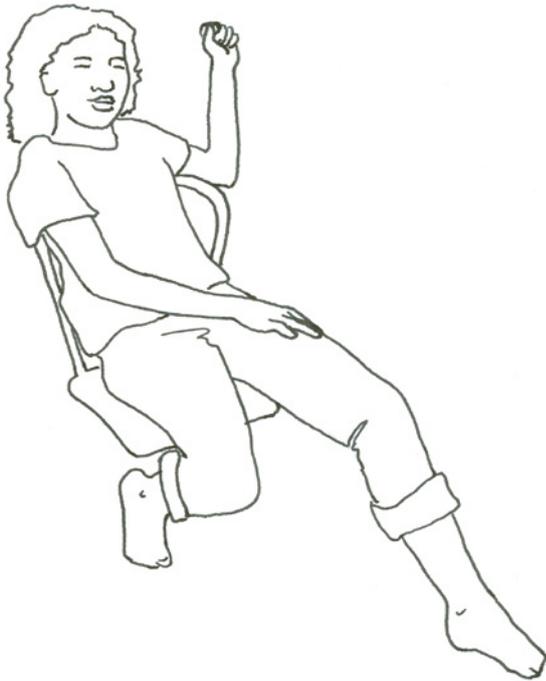
## Handout 8.4: Preventive and Referral Actions for Swelling (Edema) (continued)

Preventive Actions	Details
<p>8. "Acute Attack"</p> <p>Signs: Redness of the skin, skin feels warm, pain or tenderness, swelling, headache, fever, vomiting</p> <p>Good hygiene and use of footwear can prevent frequency of "acute attacks"</p>	<p><b>Do:</b></p> <ul style="list-style-type: none"> <li>• Cool limb in clean, cool (ice) water.</li> <li>• Take 500 mg paracetamol three times a day if there is a fever.</li> <li>• Wash as usual.</li> <li>• Rest and elevate as much as possible.</li> <li>• If infected, refer immediately for antibiotics.</li> </ul> <p><b>Do Not:</b></p> <ul style="list-style-type: none"> <li>• Put limb in hot water.</li> <li>• Scratch skin or burst blisters.</li> <li>• Exercise.</li> <li>• Bandage limb.</li> </ul>
<p>9. If edema does not respond to elevation and movement</p>	<ul style="list-style-type: none"> <li>• Refer immediately.</li> </ul>
<p>10. If pain or swelling increases</p>	<ul style="list-style-type: none"> <li>• Refer immediately.</li> </ul>

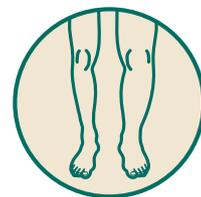
## Step 8: Care for Swelling (Edema)

### Handout 8.5: Home Self-Care Activities to Reduce Swelling in the Arm and Hand (Home Self-Care for Edema of Upper Limb)

#### Elevation & Exercise

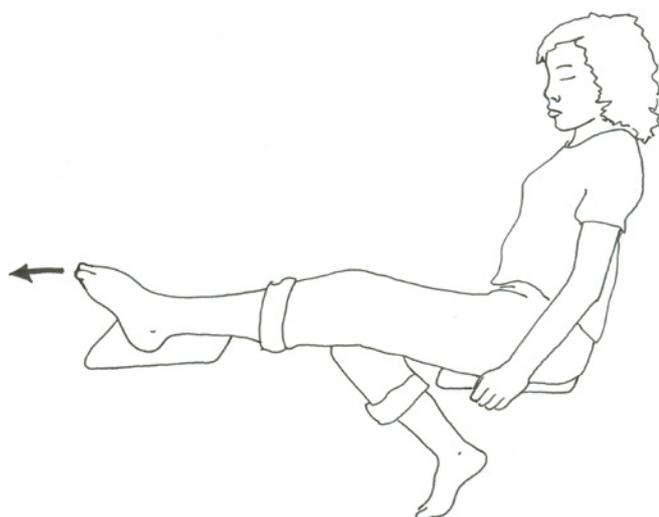
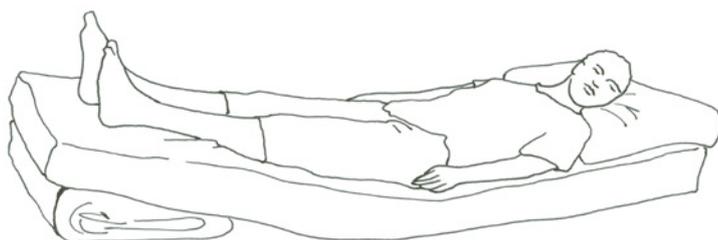
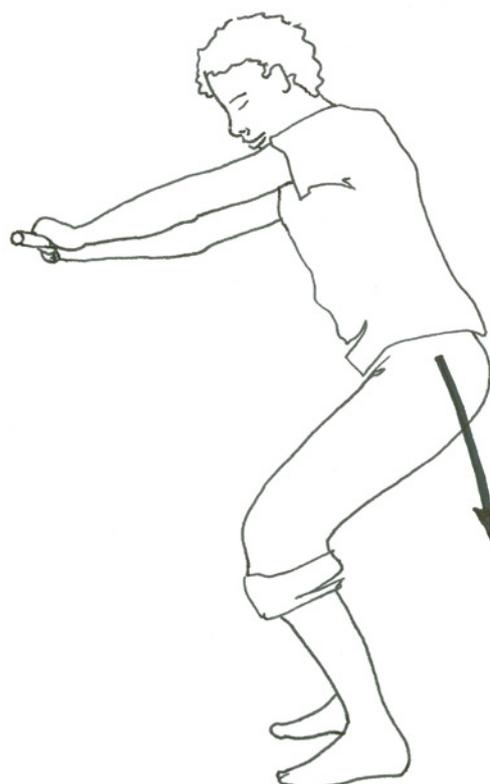


Illustrations: Valerie Simonet and WHO/NTD



## Handout 8.6: Home Self-Care Activities to Reduce Swelling in the Leg and Foot (Home Self-Care of Edema of Lower Limb)

### Elevation & Exercise

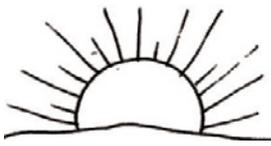


Illustrations: Valerie Simonet and WHO/NTD

# Step 8: Care for Swelling (Edema)

## Handout 8.7: Home Recording Form for Self-Care Practices

	✓ the activities to be done at home
1. <b>Elevate and Exercise</b> – 10 minutes (3–4 songs)	
2. <b>Move and Stretch</b> – Stretch 10 seconds x 10 times	
3. <b>Rest and Stretch</b> – 10 minutes (3–4 songs)	
4. <b>Scar Care</b> – Hydrate, Lubricate, Mobilize Scar, Move, Stretch & Protect	

Start Date: (dd/mm/yy) ____/____/____			
	<b>Morning</b>	<b>Afternoon</b>	<b>Night</b>
Day 1			
Day 2			
Day 3			
Day 4			
Day 5			
Day 6			
Day 7			
Day 8			
Day 9			
Day 10			
Day 11			
Day 12			
Day 13			
Day 14			

At the end of the 14 days, how is your scar?  
(Circle if Better or Worse)

Better



Worse



Date patient demonstrates to health worker (dd/mm/yy): \_\_\_\_/\_\_\_\_/\_\_\_\_

Patient is able to demonstrate self-care correctly? \_\_\_\_ Yes or \_\_\_\_ No

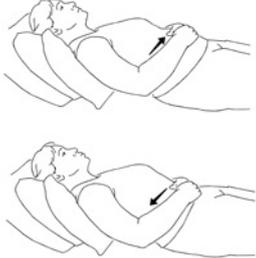
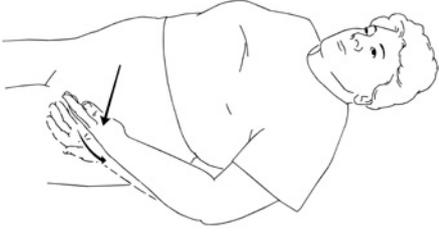
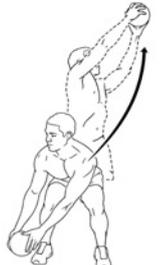
Reference: Lehman, L. (2012). *Buruli ulcer drug trial protocol: Patient home self-care*. WHO.



## Handout 8.8: Foundation for Edema Care – Upper Limb: Manual Edema Mobilization (MEM) – Breathing, Exercise and Self-Massage by Artzberger

<p><b>1. Diaphragmatic Breathing – “Belly Breathing”</b></p>		
<p><b>2. Exercise: Raising Arms Overhead With and Without Cane/Stick</b></p>		
<p><b>3. Exercise: Big Diagonal Movements (PNF patterns)</b></p>		
<p><b>4. Self-Massage Axilla</b></p>		
<p><b>5. Exercise: Chicken Wing Movements</b></p>		
<p><b>6. Buttock Squeeze</b></p>		

Handout 8.9: Foundation for Edema Care – Lower Limb: Manual Edema Mobilization (MEM) – Breathing, Exercise and Self-Massage by Artzberger

<p><b>1. Diaphragmatic Breathing – “Belly Breathing”</b></p>		
<p><b>2. Self-Massage</b></p>		
<p><b>3. Exercise</b></p>		
<p><b>4. Exercise: Buttocks Squeeze</b></p>		
<p><b>5. Exercise</b></p>		
<p><b>6. Exercise</b></p>		

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