

**KEY POINTS**

1. Peripheral edema can be of two types:
  - a. Pitting edema, associated with excessive sodium intake and fluid overload, causing a shift of fluid into the interstitial tissues
  - b. Non-pitting edema, associated with lymphedema and other disorders
2. Multiple ways of measuring peripheral edema have been suggested in the literature. Currently, the literature does not agree on the best methods, and no method passes the test for a reliable, valid standardized tool that can be used in clinical practice. This procedure identifies two methods that clinicians can use to help quantify edema:
  - a. Digital pressure scale (used for pitting edema)
  - b. Measurements of the extremity (can be used for pitting or non-pitting edema)
3. Digital pressure uses the depth of depression obtained by pressing a finger firmly against a bony prominence for at least 5 seconds. Three anatomical locations are used for this assessment in the lower extremities:
  - a. Over the dorsum of each foot
  - b. Over the lateral malleolus of the ankle
  - c. Over the tibia (shin) bone
4. Measurement involves obtaining circumference measurements of one or more anatomical areas of the foot/lower leg:
  - a. Instep: Arch of foot
  - b. Ankle: Just under the medial and lateral malleolus
  - c. Lower leg: Just under the gastrocnemius (calf) muscle

**EQUIPMENT**

Measuring tape in centimeters or inches  
Permanent marker

**PROCEDURE**

1. Identify patient. Explain procedure. Adhere to standard precautions. Perform hand hygiene. Assemble equipment.
2. Determine if edema is pitting or non-pitting to determine appropriate method.
3. Digital Pressure Method for pitting edema:
  - a. Press finger over top of foot, over lateral malleolus, and over tibia bone for at least 5 seconds.
  - b. If a pit of depression develops, compare to the following chart and record:

**Edema Scale (Graded on a scale of 1+ to 4+)**

| Grade | Physical Characteristics                                                                                                              |
|-------|---------------------------------------------------------------------------------------------------------------------------------------|
| 1+    | Slight pitting, no visible change in the shape of the extremity; depth of indentation 0-1/4" (<6 mm); indentation disappears rapidly. |
| 2+    | No marked change in the shape of the extremity; depth of indentation 1/4-1/2" (6-12 mm); indentation disappears in 10 to 15 seconds.  |
| 3+    | Noticeably deep pitting, swollen extremity; depth of pitting 1/2-1" (1-2.5 cm); indentation lasts 1 to 2 minutes.                     |
| 4+    | Very swollen, distorted extremity; depth of pitting > 1" (>2.5 cm); indentation lasts 2 to 5 minutes.                                 |

4. Measurement Method for pitting or non-pitting edema:
  - a. If initial visit:
    - 1) Determine exactly where on each foot/leg each circumference measurement will be taken:
      - a) Instep
      - b) Ankle
      - c) Lower leg
    - 2) Determine how this location will be communicated to future clinicians:
      - a) Ask permission to put marks on the patients' foot/leg using a permanent marker. If agreed, make marks as small as possible on inside of leg.
      - b) Measure in inches where each of the measurements will be done:
        - Instep in centimeters from big toe
        - Ankle in centimeters from heel
        - Lower leg in centimeters from heel
  - b. If subsequent visit:
    - 1) Identify the appropriate mark or measure the distance for each circumference measurement from landmark:
      - a) Place the tape around the extremity at indicated sites and measure..
      - b) Repeat the process on the other extremity.
    - 2) Abbreviations to use in documentation:
      - a) RI, LI - Right or left instep
      - b) RA, LA - Right or left ankle
      - c) RC, LC - Right or left calf

**AFTER CARE**

1. Communicate with primary care provider about:
  - a. Parameters for edema
  - b. Exacerbation of edema beyond parameters
2. Teach patient/caregiver about measures to prevent edema and maintain skin integrity:
  - a. Avoid constriction of legs (garters, tight socks).
  - b. Elevate lower extremities.
  - c. Skin care with lotion to maintain skin integrity.
  - d. Self-management measures to control fluid retention and heart failure, if appropriate.
3. Document in patient's record:
  - a. Method of measurement
  - b. Measurements at each site on each foot/leg
  - c. Associated symptoms (e.g., weight gain, calf pain, etc.)
  - d. Patient education provided with patient response
  - e. Any communication or orders from primary care provider

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