

Objective Information

Observations

- 👉 Edema due to trauma is local and sometimes distal to the injury site. The area looks taut and firm. The edema usually increases with the severity of the injury. The amount of edema present in the acute stage diminishes as healing progresses through the early and late subacute stages. It is usually absent in the chronic stage but, with repeated injuries, edema may remain local to the lesion site.
- 👉 Edema due to local lymphatic obstruction involves the whole limb distal to the lesion site. The limb can be taut and firm or puffy and congested depending on the cause of the obstruction.
- 👉 Edema due to general systemic conditions affects the entire body. It is usually noted in all the extremities and may also appear on the face and around the eyes. Swollen areas appear puffy and congested. This edema may be mild, as with pregnancy or premenstrual sodium retention, or severe, as with chronic congestive heart failure or advanced kidney pathologies.
- 👉 Reddening of the skin in the edematous area may indicate infection, either bacterial (streptococcus) or fungal (mycosis) (Kurz, 1990).

Palpation

- 👉 Edema due to trauma is tender, hot, firm and local to the injury in the acute stage. These signs diminish as the healing progresses through the subacute and chronic stages. See the appropriate musculoskeletal chapter for more details.
- 👉 In the case of local or general chronic edema that is not trauma related, the tissue may be cool due to ischemia or warm due to congestion. It may be boggy or taut in texture. Tenderness may or may not be present.

Testing

- 👉 **AF** and **PR ROM** of the edematous limb are reduced. The amount of limitation increases with the severity of the edema.

Special Tests

- 👉 The extent of the edema is assessed with the **swelling or edema girth measurement**. A bilateral comparison is made with the unaffected limb.
 - With an acute injury, if a swelling occurs rapidly, a hematoma is indicated and the client should be referred for emergency medical attention.
- 👉 A **pitted edema** test is positive if chronic pitted edema resulting from a pathology is present.

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General Tests

Swelling or Edema Girth Measurement

To assess for the extent of any swelling or edema present:

- Use a tape measure to record the **swelling or edema girth**, or the circumference of the limb where the swelling or edema is located.
- To ensure that the girth is measured at the same location each time, record the distance from a bony landmark to the point of girth measurement. This same distance is used in each subsequent girth assessment. For example, with a thigh injury, the head of the fibula or the anterior superior iliac spine may be used as a landmark.

Swelling and edema should be differentiated from each other:

- ◆ A painful **swelling** that occurs between a few minutes and an hour after an acute injury often indicates a **hematoma** (Hertling, Kessler, 1990; Brukner, Khan, 1993).
- ◆ **Swelling** that takes eight to 24 hours to develop following an acute injury to a joint may indicate **synovial effusion** (Magee, 1992). Both these conditions indicate referral for **immediate medical attention**.
- ◆ **Edema** is an accumulation of fluid in the interstitial spaces of the tissue and may present with acute or chronic conditions.

Pitted Edema Test

To assess for the presence of chronic pitted edema:

- Apply firm finger pressure to the edematous area for 10 to 20 seconds, then release