

# Generalized edema

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## Rationale

Generalized edema is systemic soft tissue swelling produced by expansion of the interstitial fluid volume. This condition may be caused by serious underlying disease.

## Causal Conditions

(list not exhaustive)

- Increased capillary hydrostatic pressure
  - a. Increased plasma volume due to renal sodium retention
    - Heart failure
    - Reduced systemic vascular resistance (e.g., cirrhosis)
    - Primary renal sodium retention (e.g., renal disease, drugs)
    - Pregnancy
    - Premenstrual edema
  - b. Decreased arteriolar resistance (e.g., calcium channel blockers, idiopathic)
- Decreased oncotic pressure (hypoalbuminemia)
  - a. Protein loss (e.g., nephrotic syndrome)
  - b. Reduced albumin synthesis (e.g., liver disease, malnutrition)
- Increased capillary permeability (e.g., burns, inflammation)
- Increased interstitial oncotic pressure (e.g., myxedema)

## Key Objectives

Given a patient with generalized edema, the candidate will diagnose the cause, severity, and complications, and will initiate an appropriate management plan. In particular, it is important to differentiate systemic edema from local edema, and categorize the general mechanism of edema, since management may be affected.

## **Enabling Objectives**

Given a patient with generalized edema, the candidate will

- list and interpret critical clinical findings, including
  - a. an appropriate history and physical examination;
- list and interpret critical investigations (e.g., creatinine, urinalysis, chest X-ray)
- construct an effective initial management plan, including
  - a. non-pharmacological measures (e.g., dietary salt restriction);
  - b. pharmacological measures;
  - c. determination as to whether the patient requires specialized care and/or consultation (e.g., patient with advanced renal, cardiac, or hepatic disease).