



MALNUTRITION QUALITY  
IMPROVEMENT INITIATIVE

**MALNUTRITION RECOGNITION GUIDE**

## Two factors in the table below must be present for a malnutrition diagnosis.

	Acute Illness or Injury		Chronic Illness		Social or Environmental Factor	
	Moderate Protein Calorie Malnutrition	Severe Protein Calorie Malnutrition	Moderate Protein Calorie Malnutrition	Severe Protein Calorie Malnutrition	Moderate Protein Calorie Malnutrition	Severe Protein Calorie Malnutrition
<b>Energy Intake</b>	<75% of EEE >7 days	≤50 % of EEE >5 days	<75% of EEE ≥1 month	< 75% of EEE ≥1 month	<75% of EEE ≥3 months	≤50% of EEE ≥1 month
<b>Weight Loss</b>	<b>1-2%</b> 1 week <b>5%</b> 1 months <b>7.5%</b> 3 months	<b>&gt; 2%</b> 1 week <b>&gt; 5%</b> 1 months <b>&gt; 7.5%</b> 3 months	<b>5%</b> 1 month <b>7.5%</b> 3 months <b>10%</b> 6 months <b>20%</b> 1 year	<b>&gt; 5%</b> 1 month <b>&gt; 7.5%</b> 3 months <b>&gt; 10%</b> 6 months <b>&gt; 20%</b> 1 year	<b>&gt; 5%</b> 1 month <b>&gt; 7.5%</b> 3 months <b>&gt; 10%</b> 6 months <b>&gt; 20%</b> 1 year	<b>&gt; 5%</b> 1 month <b>&gt; 7.5%</b> 3 months <b>&gt; 10%</b> 6 months <b>&gt; 20%</b> 1 year
<b>Body Fat Loss</b>	Mild	Moderate	Mild	Severe	Mild	Severe
<b>Muscle Mass Wasting</b>	Mild	Moderate	Mild	Severe	Mild	Severe
<b>Fluid (Edema)</b>	Mild	Moderate to Severe	Mild	Moderate to Severe	Mild	Moderate to Severe
<b>HandGrip Strength</b>	N/A	Measurably Reduced	N/A	Measurably Reduced	N/A	Measurably Reduced

EEE: Estimated energy expenditure

N/A: Not applicable

Reference: Academy of Nutrition and Dietetics & American Society of Parenteral and Enteral Nutrition Clinical Characteristics of Malnutrition 2011.



# Bilateral Muscle Wasting

## Upper Body

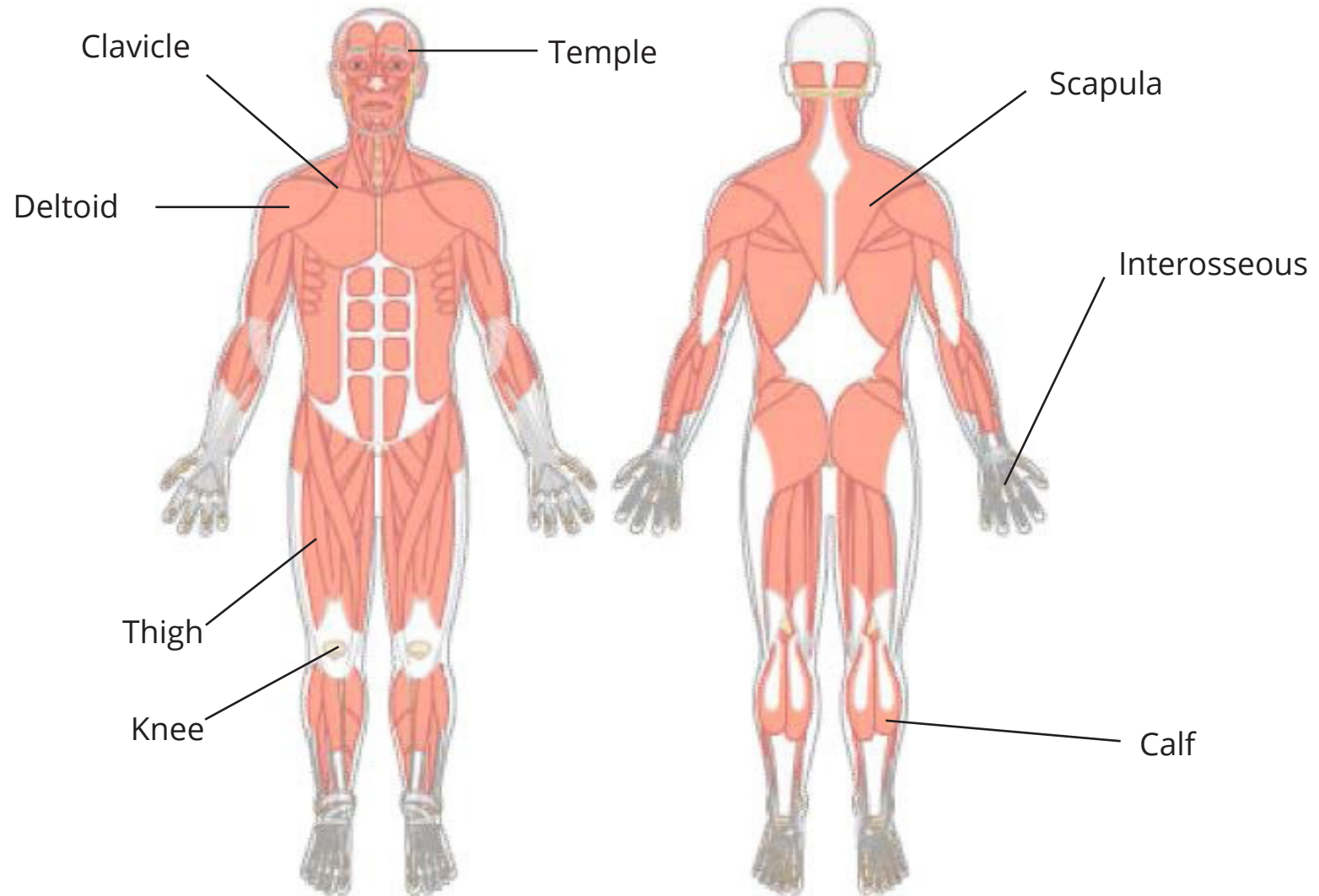
- Temples
- Deltoids (shoulders)
- Clavicles
- Scapula
- Interosseous

## Lower Body

- Thigh
- Knee
- Calf

- More significant than subcutaneous fat loss
- Upper body more susceptible, independent of functional status
- Muscle wasting from inactivity or bedrest most prominent in pelvis and upper legs
- Neurological deficits may produce false-positive findings

# Bilateral Muscle Wasting



# Bilateral Muscle Wasting: Temples



- Look at patient straight on and have them turn their head from side to side
- Inspect for “scooping” or hollowing of the temporal region
- Such signs indicate wasting of the temporalis muscle

Photo used with permission. University of California, San Diego. Available at: [http://meded.ucsd.edu/clinicalimg/head\\_temporal\\_wasting2.htm](http://meded.ucsd.edu/clinicalimg/head_temporal_wasting2.htm). Accessed March 1, 2016.

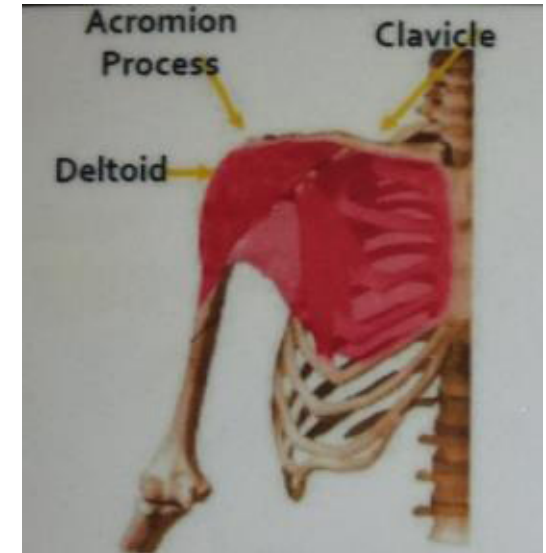
# Bilateral Muscle Wasting: Deltoids

Normal



**Vs.**

Severe



**Inspect straight on with patient's arms at side and look for:**

- "Squaring" of the shoulders
- Loss of roundness at junction of shoulder and neck
- Loss of deltoid muscle at junction of shoulder and arm
- Acromion process may protrude

# Bilateral Muscle Wasting: Clavicles

Normal



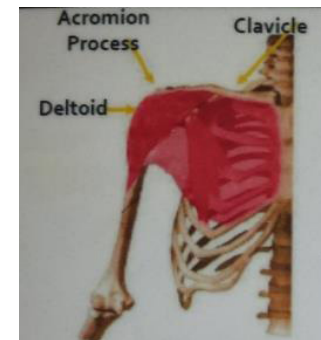
Moderate



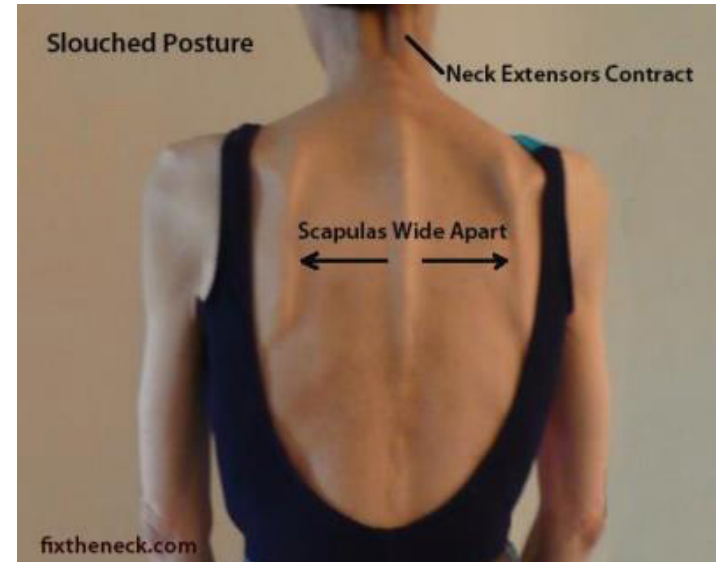
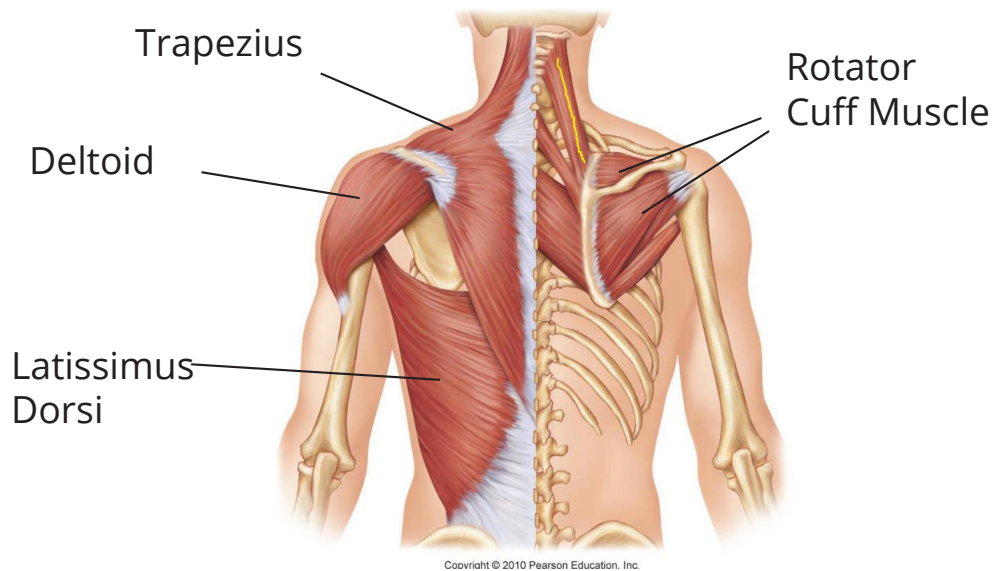
Severe



- Inspect for prominence of bone
- Clavicle less prominent for women
- Indicates wasting of pectoral and deltoid muscles



# Bilateral Muscle Wasting: Scapula



**Have patient lift arms and push against hard object:**

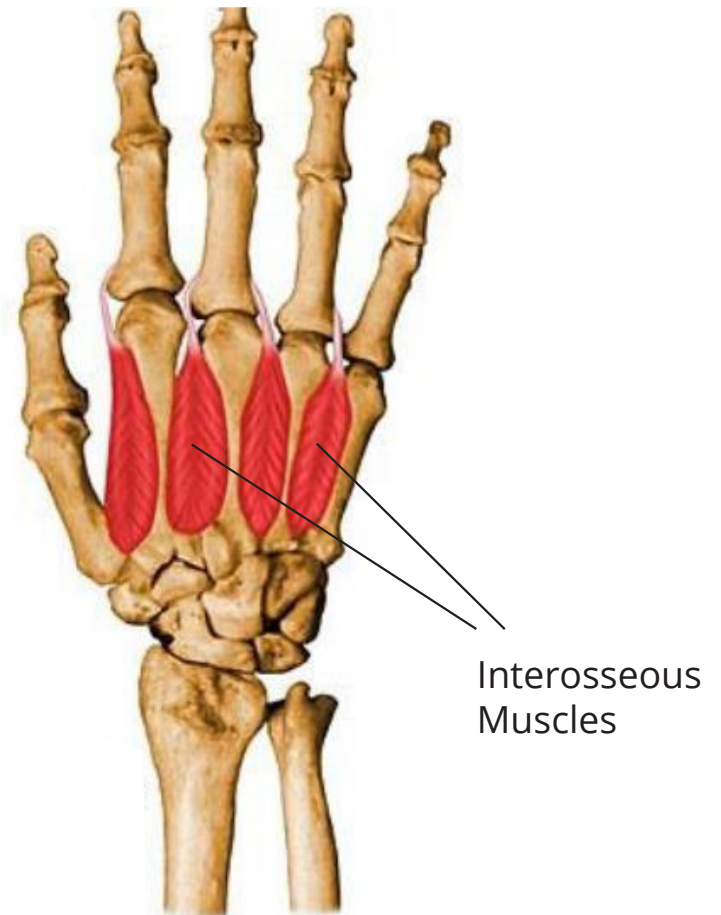
- Inspect for prominent bones or depression between bones
- Such signs indicate loss of trapezius and deltoid muscles



# Bilateral Muscle Wasting: Interosseous

**Have patient place their hand on a flat surface with palm facing down:**

- Inspect the interosseous muscle between patient's thumb and forefinger by having patient move thumb and forefinger together and apart (like an "ok" sign)
- Palpate (pinch skin) the muscle using your thumb and index finger
- Look for bulged or slightly bulged muscles in well-nourished males and slightly bulged or flat for females



# Subcutaneous Fat Loss

**Inspect and palpate areas where adipose tissue is normally present.**

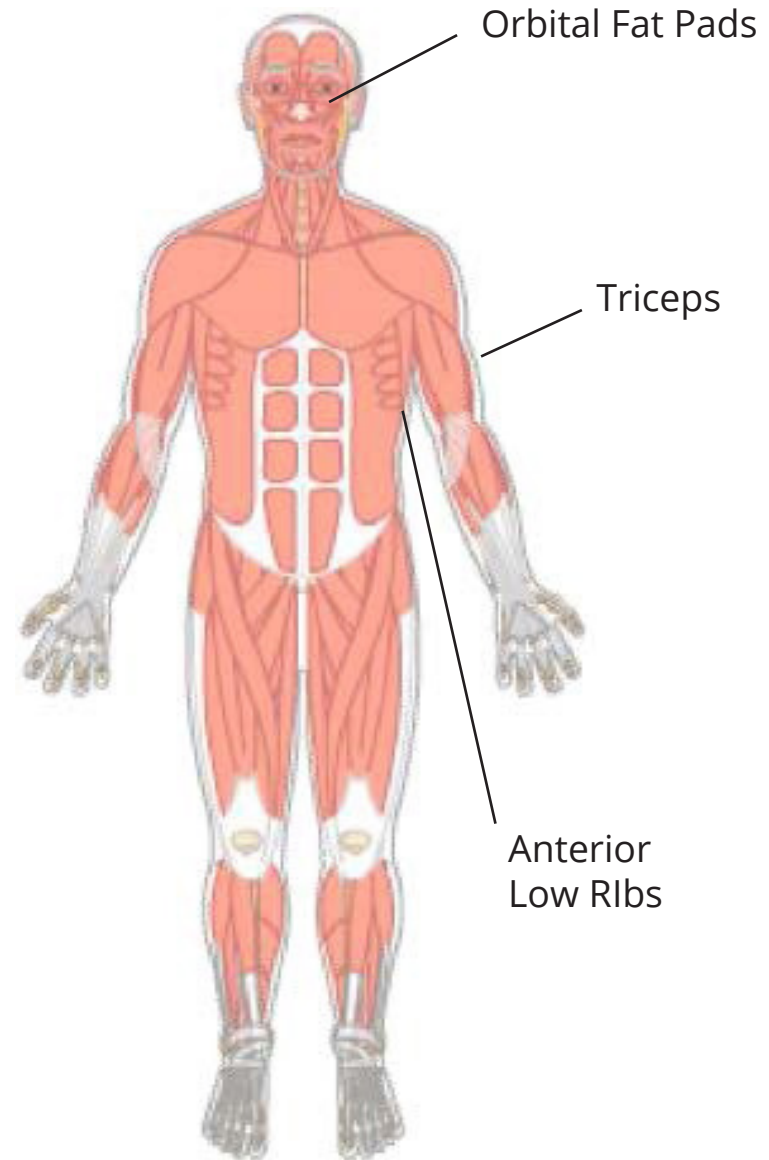
**Look for:**

- *Subjective* impressions of loss of fat stores
- Loss of fullness, loose or hanging skin, or hollow appearance

Note: Age-related loss of subcutaneous tissue may confound findings

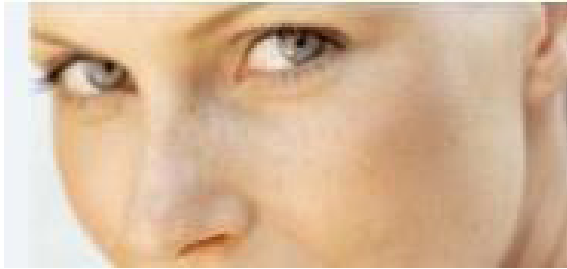
# Subcutaneous Fat Loss (continued)

- **Orbital Fat Pads**
  - Loss of bulge under eyes (fat pads), characterized by hollow eye
- **Triceps**
  - Palpate (pinch skin) between thumb and forefinger to determine the amount of fat present
- **Anterior Low Ribs**
  - Ribs visible in patients with fat loss



# Subcutaneous Fat Loss: Orbital Fat Pads

**Normal**



Slightly bulged fat pads

**Mild-Moderate**



Slightly dark circles, somewhat tired look

**Severe**



Hollow and sunken look, dark circles, loose skin

# Subcutaneous Fat Loss: Triceps

**Normal**



Ample fat tissue between folds of skin

**Mild-Moderate**



Slightly loose skin; fingers almost touch when pinching skin between fingers

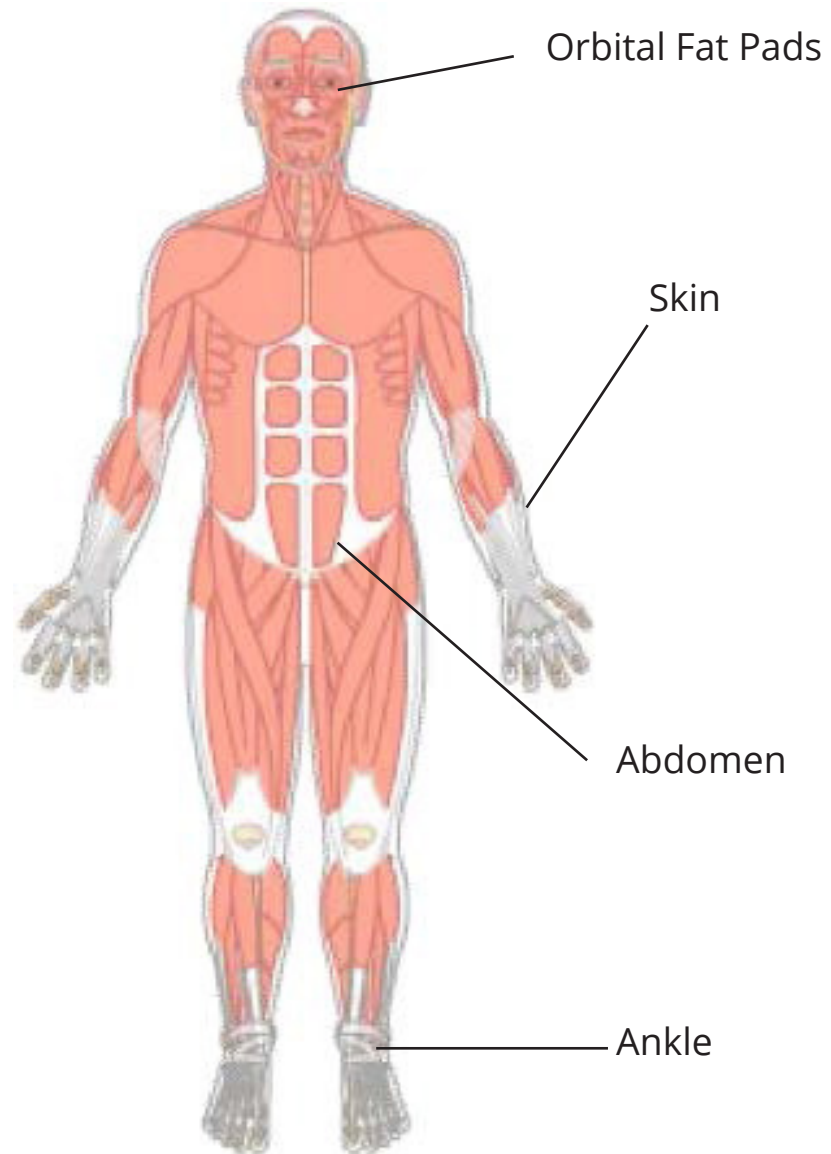
**Severe**



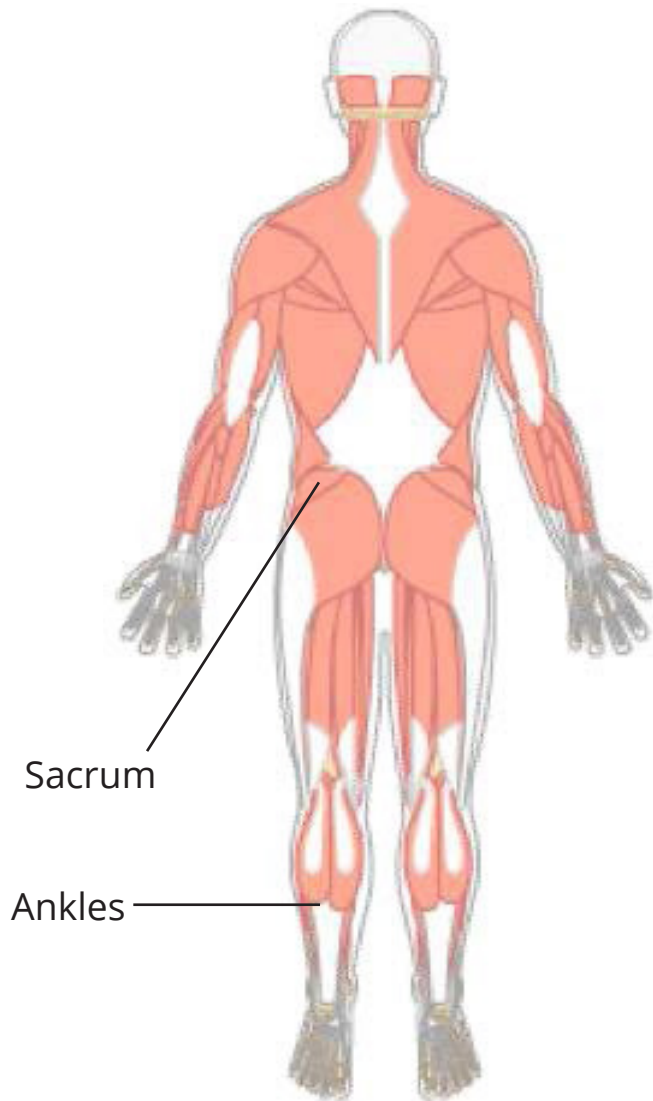
Loose skin, very little space between skin folds

# Fluid Status

- **Edema**
  - Dependent areas
  - Ankles, sacrum
- **Ascites**
  - Abdomen
- **Dehydration**
  - Orbital area
  - Skin



# Fluid Status: Edema



- Inspect for swelling in contour of leg, ankle, or foot
- Palpate by gently squeezing top of foot, ankle, or front of lower leg, or by gently pressing skin in sacral area
- Note if an impression is left

# Fluid Status: Ascites

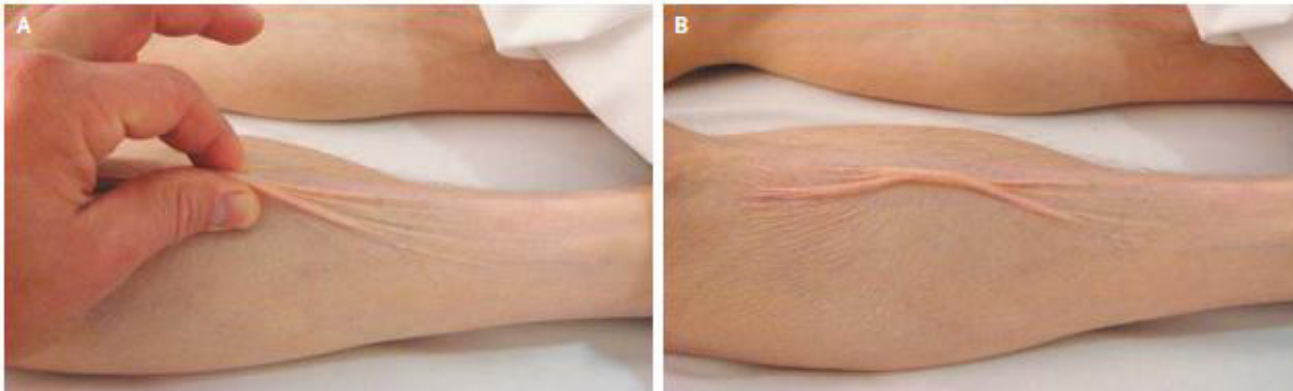
- Stand at foot of bed, look up toward patient's head, and observe contours of abdomen
- Global abdominal enlargement is usually caused by air, fluid, or fat





# Fluid Status: Dehydration

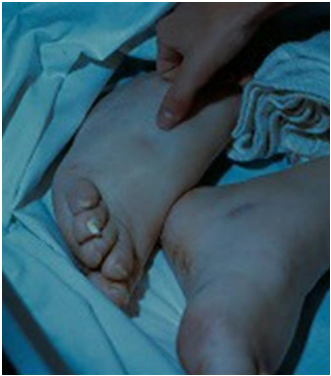
- Dry or sticky mouth and/or oral mucosa
- Low output of concentrated urine or no urine output
- Dry sclera (decreased tear production)
- Sunken eyes
- Confusion or lethargy
- Poor skin turgor (consider age-related skin changes)



Source: De Vries Feyen, et al. Images in clinical Mmedicine: decreased skin turgor. N Engl J Med. 2011;364:e6. Available at: <http://www.nejm.org/doi/pdf/10.1056/NEJMicm1005144>. Accessed March 1, 2016.



# Protein Energy Malnutrition (PEM)

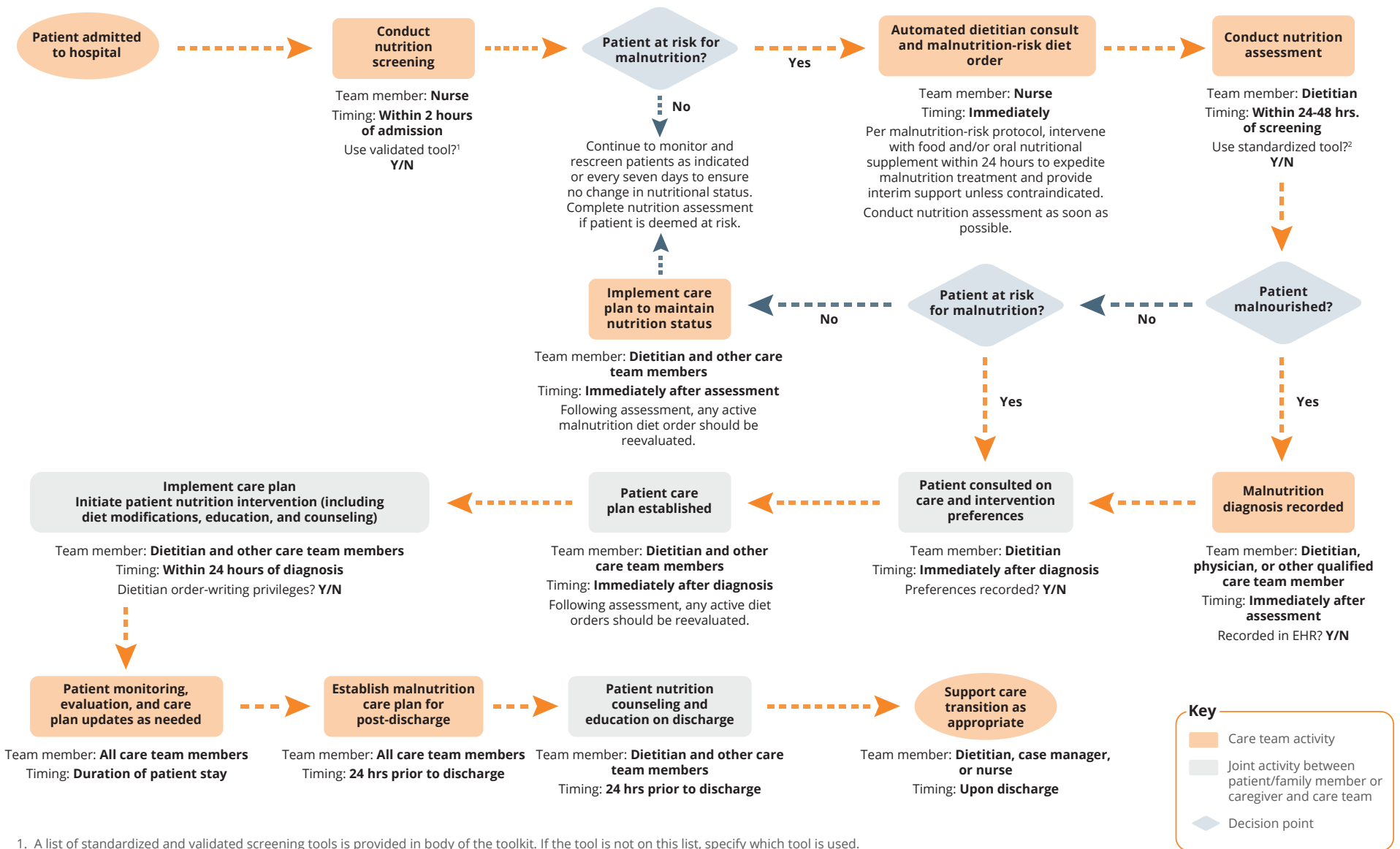


## Look for signs of physical PEM, which include:

- Pitting edema
- Dry, flaky, scaly, cracked, bruised, or bleeding skin
- Dull, brittle, and loose hair
- Ridged, cracked, spoon-shaped, or pale nails



# MQii Sample Flowchart for Recommended Malnutrition Care



1. A list of standardized and validated screening tools is provided in body of the toolkit. If the tool is not on this list, specify which tool is used.  
2. A list of standardized and validated assessment tools is provided in body of the toolkit. If the tool is not on this list, specify which tool is used.