Welcome to Today’s Expert Webinar for the 2018 MQii Learning Collaborative: 

**Nutrition-Focused Physical Exam Mini-Session**

We will get started promptly at 12:00PM ET  
(11:00AM CT; 10:00AM MT; 9:00AM PT)  

*All phone lines have been muted*
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Before We Get Started…

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## Today’s Agenda

<table>
<thead>
<tr>
<th>Agenda Item</th>
<th>Speaker</th>
</tr>
</thead>
<tbody>
<tr>
<td>Session Introduction</td>
<td>Lori Granich from the Academy of Nutrition and Dietetics</td>
</tr>
<tr>
<td>Nutrition-Focused Physical Exam Mini-Session</td>
<td>Beth Mordarski from the Academy of Nutrition and Dietetics</td>
</tr>
</tbody>
</table>

Questions – 5 mins
Speaker Introductions

Session Introduction:

Lori Granich, MBA, RDN  
*Director, Lifelong Learning and Engagement*  
Academy of Nutrition and Dietetics

Expert Speaker:

Beth Mordarski, RDN, LD  
*NFPE Program Manager*  
Academy of Nutrition and Dietetics
Learning Event:

Nutrition-Focused Physical Exam
Objectives

• Identify physical findings that may indicate malnutrition, including loss of subcutaneous fat, muscle wasting and the presence of nutrition related edema

• Recognize signs of common micronutrient deficiencies using nutrition focused physical exam of the hair, eyes, oral cavity, nails, and skin

• Incorporate best-practices for NFPE into everyday clinical practice
Nutrition-Focused Physical Findings

Findings from a nutrition-focused physical exam, interview, or the medical record including muscle and subcutaneous fat, oral health, suck/swallow/breathe ability, appetite, and affect.
Malnutrition Characteristics

**FROM THE ACADEMY**

*Consensus Statement*

Consensus Statement of the Academy of Nutrition and Dietetics/American Society for Parenteral and Enteral Nutrition: Characteristics Recommended for the Identification and Documentation of Adult Malnutrition (Undernutrition)

Jane V. White, PhD, RD, FADA; Peggi Guenter, PhD, RN; Gordon Jensen, MD, PhD, FASPEN; Ainsley Malone, MS, RD, CND; Marsha Schofield, MS, RD; the Academy Malnutrition Work Group; the A.S.P.E.N. Malnutrition Task Force; and the A.S.P.E.N. Board of Directors

Two criteria are needed to make the diagnosis of malnutrition

- Energy Intake
- Weight Loss
- Fat Loss
- Muscle Loss
- Edema (Nutrition Related)
- Reduced Hand Grip Strength
Types of NFPE

- **Focused**
  - Specific system based on medical record review or interview

- **Comprehensive**
  - Review of Systems: Head to toe
  - Organized sequence
NFPE Techniques

- **Inspection** - visual observation
  - Appearance, movement, color, edema, affect

- **Palpation** - touch using fingertip pads
  - Assess texture, size, tenderness, temperature, edema
  - Light palpation – use fingertips and press 1-2 cm
  - Deep palpation – gently pressing 4 cm

- **Percussion** - tapping fingers against body surface to listen for solids, liquids, gas
  - Define organ borders, shape, position, presence or absence of fluids

- **Auscultation** - listening to sounds that reflect movement of air or fluid through organs with stethoscope

Bickley, L. Bates Guide to Physical Examination, 2009
Getting Started

- **General Survey**
  - Overall first impression of the patient
  - Body habitus
  - Affect
  - Level of Consciousness
  - Ability to communicate

- **Tools**
  - Basic
    - Hands
    - Eyes
    - PPI, as needed
  - Secondary
    - Penlight, Tongue Depressor, BP Cuff, Stethoscope, Reflex Hammer, Thermometer
NFPE and Malnutrition

**Fat Loss**
- Orbital
- Buccal
- Triceps
- Ribs

**Muscle Wasting**
- Temporalis
- Pectoralis
- Deltoid
- Interosseous
- Trapezius, Supraspinatus, Infraspinatus
- Quadriceps
- Gastrocnemius

**Edema**
Fat Loss

- Orbital
- Buccal
- Triceps
- Ribs
Orbital Fat Loss

- Well nourished → Slightly bulged fat pad
- Mild-Moderate → Slightly dark circles, somewhat hollow
- Severe → Hollow depressions, dark circles, loose skin

Examine: Area under eye
*Pat lightly with finger tips

Buccal Fat Loss

• Well Nourished → Full round cheeks, filled out
• Mild-Moderate → Flat cheeks
• Severe → Hollow, narrow face

Examine: Area under cheekbone

Landmark: Cheekbone

Upper Body Fat Loss, Triceps

Examine: Triceps area
*Bend arm to 90 degrees,
Separate muscle from fat,
Pinch fat between fingers

- Well Nourished → Ample fat between folds of skin
- Mild-Moderate → Fingers almost touch
- Severe → Very little space between folds, fingers touch
Upper Body Fat Loss, Ribs

Examine: Ribs, lower back, Mid-axillary line

- Well Nourished $\rightarrow$ Chest and ribs not visible, full
- Mild-Moderate $\rightarrow$ Loose skin, apparent ribs
- Severe $\rightarrow$ Depression between ribs apparent

NFPE and Malnutrition

Muscle Wasting

- Temporalis
- Pectoralis
- Deltoid
- Interosseous
- Trapezius, Supraspinatus, Infraspinatus
- Quadriceps
- Gastrocnemius
Muscle Wasting: Temporalis

- Well Nourished → Well-defined muscle
- Mild-Moderate → Slight depression of temporalis
- Severe → Hollowing or “scoop-like” depression

Examine: Temporal Region
*Palpate with two fingers, horizontally, diagonally, and vertically

Muscle Wasting: Pectoralis

Examine: Pectoral area

Landmark: Clavicle

- Well Nourished → Visible, not prominent
- Mild-Moderate → Some protrusion
- Severe → Protruding prominent bone

Muscle Wasting: Deltoid

Examine: Deltoid

Landmark: Shoulder and Acromion Process

- Well Nourished → Rounded curved junction at neck and shoulder
- Mild-Moderate → Shoulder not square, slight protrusion of acromion process
- Severe → Squared shoulders, prominent bones, significant protrusion of acromion process

Muscle Wasting: Trapezius, Supraspinatus, Infraspinatus

Examine: Trapezius, Supraspinatus, Infraspinatus muscles

Landmark: Scapula region

- Well Nourished → Scapula not prominent
- Mild-Moderate → Scapula showing slightly in some but not all areas
- Severe → Prominent bone, depression above scapula
Muscle Wasting: Interosseous

Examine: Ask patient to make OK sign, examine muscle between thumb and forefinger

- Well Nourished → No depression
- Mild-Moderate → Slight depression
- Severe → Deep depression
**Muscle Wasting: Quadriceps**

**Quadriceps**
- Well Nourished $\rightarrow$ Well rounded, no depressions
- Mild-Moderate $\rightarrow$ Slight depression along inner thigh
- Severe $\rightarrow$ Quadriceps can be reduced, depression of thigh

**Knee**
- Well Nourished $\rightarrow$ Bone not prominent
- Mild-Moderate $\rightarrow$ Knee noticeable, little muscle
- Severe $\rightarrow$ Knee is square and prominent

- *rectus femoris* - blue
- *vastus lateralis* - yellow
- *vastus intermedius* - green
- *vastus medialis* - red
Muscle Wasting: Gastrocnemius

- Well Nourished → Bulb shaped, firm and well developed
- Mild-Moderate → Some shape and firmness
- Severe → Definite tissue reduction. Thin, flat, no definition

Examine: Posterior Calf Region
NFPE and Malnutrition

Edema
Edema Assessment

<table>
<thead>
<tr>
<th>Category</th>
<th>Description Depth of Pitting (mm)</th>
<th>Description Duration of Pitting (Seconds)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1+</td>
<td>Mild pitting, slight indentation (2 mm or less)</td>
<td>0-15 seconds</td>
</tr>
<tr>
<td>2+</td>
<td>Moderate pitting (2-4 mm)</td>
<td>16-30 seconds</td>
</tr>
<tr>
<td>3+</td>
<td>Deep pitting, extremity may look swollen (4-6 mm)</td>
<td>31-60 seconds</td>
</tr>
<tr>
<td>4+</td>
<td>Very deep pitting, grossly swollen extremity (6-8mm)</td>
<td>&gt; 60 seconds</td>
</tr>
</tbody>
</table>

• Normal → No edema
• Mild → Mild pitting edema
• Moderate → Moderately deep pit that persists
• Severe → Deep depression that persists
NFPE and Malnutrition

Micronutrients

• Hair
• Eyes
• Oral Cavity
• Nails
• Skin
Micronutrient: Vitamin B6

Examine: Scalp, eyebrows and nasal-labial folds, observe for waxy plaques

- Seborrheic Dermatitis
- Vitamin B6
  - PCM, dialysis, sickle cell, malabsorption, diuretics, anticonvulsants, oral contraceptives, isoniazid
Micronutrient: Vitamin A

- Bitot’s Spots
- Vitamin A Deficiency
  - Limited diet, fat malabsorption, alcoholism, CF, short bowel syndrome

Examine: White of eye, foamy greyish, white lesion
Micronutrient: Iron

- Pale Conjunctiva, Koilonychia, Pallor
- Iron Deficiency
  - Inadequate intake, blood loss, excessive phytate intake
Micronutrient: Vitamin C

• Perifollicular Hemorrhage
• Vitamin C or Vitamin K Deficiency
  • Limited diet, infants on cow milk, dialysis, malabsorption, smoking

|Examine skin around hair follicles on legs and arms for small hemorrhages or cork screw like hair|

Micronutrient: Zinc

- Vesico-Bullous Lesions
- Zinc Deficiency
  - Premature infants, PN dependent, cholestasis, IV zinc shortage, diarrhea, high phytates intake, celiac disease, Crohn’s Disease, SBS, AIDS, Liver Disease, Nephrotic Syndrome, Alcoholism, Trauma, Burns, Sleeve Gastrectomy, penicillamine, diuretics, valproate
<table>
<thead>
<tr>
<th>Challenge</th>
<th>Solution</th>
</tr>
</thead>
</table>
| Knowledge               | • Journal Clubs
|                         | • Webinars
|                         | • Journal Articles                                               |
| Time                    | • Optimize Documentation                                          |
| Confidence              | • Develop Skills                                                 |
| Special Populations     | • Indicators that Affect Nutritional Status
|                         | • Functional Status                                              |
|                         | • Think Big Picture                                              |
|                         | • Coordinate Exam with Other Disciplines                         |
|                         | • Geriatric                                                      |
|                         | • Obese                                                          |
|                         | • ICU                                                            |
|                         | • Neurologically Impaired                                        |
### Subcutaneous Fat Loss

<table>
<thead>
<tr>
<th>Location</th>
<th>None</th>
<th>Moderate</th>
<th>Severe</th>
<th>Not examined</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perioral</td>
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</tr>
<tr>
<td>Triceps</td>
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<td></td>
</tr>
<tr>
<td>Biceps</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ribs</td>
<td></td>
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</tbody>
</table>

### Muscle Wasting

<table>
<thead>
<tr>
<th>Location</th>
<th>None</th>
<th>Moderate</th>
<th>Severe</th>
<th>Not examined</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temple</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Clavical</td>
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<tr>
<td>Shoulder</td>
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</tr>
<tr>
<td>Thigh</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Calf</td>
<td></td>
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</tbody>
</table>

### Physical Findings

<table>
<thead>
<tr>
<th>Findings</th>
<th>None</th>
<th>Positive</th>
<th>Not examined</th>
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<tbody>
<tr>
<td>Hair</td>
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<td></td>
<td></td>
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<tr>
<td>Eyes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mouth</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nails</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Skin</td>
<td></td>
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</tr>
</tbody>
</table>

### Functional/Metabolic/SGA status

<table>
<thead>
<tr>
<th>Status</th>
<th>Normal activity</th>
<th>Difficulty with normal activity</th>
<th>Improvement in function</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Stress</th>
<th>No stress</th>
<th>Moderate stress</th>
<th>Severe Stress</th>
</tr>
</thead>
<tbody>
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<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Rating</th>
<th>Moderate malnutrition</th>
<th>Severe malnutrition</th>
<th>Malnutrition NOT present at this time</th>
</tr>
</thead>
</table>
PES Statements: Nutrition Diagnosis

(Chronicity) (Degree) (Illness or Social Environmental) Malnutrition in the setting of (Injury or Disease) related to (Etiology) as evidenced by (Indicators/Supportive Data).

Acute Illness or Chronic Illness
Severe protein-calorie malnutrition in the setting of a burn injury related to hypermetabolism and increased energy requirements as evidenced by 10% weight loss over one month and physical findings of moderate muscle wasting (temporalsis and pectoralis) and severe subcutaneous fat loss (orbital, buccal and triceps).
# Impact of Malnutrition Diagnosis

<table>
<thead>
<tr>
<th>Principal Diagnosis:</th>
<th>Principal Diagnosis (Procedure):</th>
<th>Principal Diagnosis (Procedure):</th>
<th>Principal Diagnosis (Procedure):</th>
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<tbody>
<tr>
<td>Idiopathic Spinal Stenosis</td>
<td>Idiop Sp Stenosis w/ Fusion</td>
<td>Idiop Sp Stenosis w/ Fusion</td>
<td>Idiop Sp Stenosis w/ Fusion</td>
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<tr>
<td>2nd Diagnosis:</td>
<td>2nd Diagnosis:</td>
<td>2nd Diagnosis:</td>
<td>2nd Diagnosis:</td>
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<tr>
<td>None</td>
<td>None</td>
<td>Mild Malnutrition</td>
<td>Severe Malnutrition</td>
</tr>
<tr>
<td><strong>DRG 347</strong></td>
<td><strong>DRG 303 Dors/Lumb Fusion for Curved Back</strong></td>
<td><strong>DRG 303 Dors/Lumb Fusion for Curved Back</strong></td>
<td><strong>DRG 303 Dors/Lumb Fusion for Curved Back</strong></td>
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<tr>
<td>Back &amp; Neck Dis, Fx &amp; Unj</td>
<td>GLOS 4.08</td>
<td>GLOS 5.02</td>
<td>GLOS 7.25</td>
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<tr>
<td><strong>GLOS 2.28</strong></td>
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<tr>
<td><strong>Relative Weight</strong></td>
<td><strong>Relative Weight</strong></td>
<td><strong>Relative Weight</strong></td>
<td><strong>Relative Weight</strong></td>
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<tr>
<td>0.5427</td>
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<td>5.3576</td>
<td>7.6399</td>
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<tr>
<td>$7,831.27</td>
<td>$41,525.35</td>
<td>$54,129.87</td>
<td>$73,273.97</td>
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<td><strong>SOI 1</strong></td>
<td><strong>SOI 1</strong></td>
<td><strong>SOI 2</strong></td>
<td><strong>SOI 3</strong></td>
</tr>
<tr>
<td><strong>ROM 1</strong></td>
<td><strong>ROM 1</strong></td>
<td><strong>ROM 1</strong></td>
<td><strong>ROM 2</strong></td>
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</table>

### Competencies

<table>
<thead>
<tr>
<th>Criteria &amp; Evaluation</th>
<th>Completed Verbally</th>
<th>Demonstrated Satisfactorily</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Accurately interprets anthropometric measurements</td>
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<tr>
<td>3. Demonstrates assessment of growth using z-scores</td>
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<tr>
<td>4. Demonstrates basic NFPE skills</td>
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<tr>
<td>- Muscle and fat wasting, adiposity</td>
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<tr>
<td>- Screens for nutrient deficiencies/toxicities</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>- Skin</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Hair</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Eyes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Mouth</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Nails</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Abdominal exam</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Enteral and parenteral access site (infection, granulation tissue)</td>
<td></td>
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<tr>
<td>5. Obtains nutrition/diet History to assess adequacy of intake</td>
<td></td>
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<tr>
<td>6. Analyzes enteral regimen to assess adequacy of vitamins, minerals, and electrolytes</td>
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<tr>
<td>7. Accurately interprets biochemical data</td>
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<tr>
<td>8. Obtains pertinent medical history such as presence of dystonia, athetosis, and spasticity in order to assess energy requirements</td>
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<tr>
<td>9. Identifies drug nutrient interactions</td>
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</table>
NFPE Resources


• DNS NFPE Video
  • https://www.dnsdpg.org/store.cfm

• Academy of Nutrition and Dietetics Hands-On Workshop
  • http://www.eatrightpro.org/NFPE
Nutrition Focused Physical Exam Hands-on Training Workshop

1:6 Trainer to participant ratio for hands-on experience

Demonstrate NFPE skills with real patients during patient rounds

Ongoing support from Academy trainers

NFPE Workshop Benefits

Find a workshop near you: www.eatrightpro.org/nfpe
Join us to obtain your NFPE skills!

The Academy's NFPE workshop has taken me and my staff to a whole new level of practice. I highly recommend this training to stretch dietitians to practice at the top of their scope.

Excellent trainers and curriculum. Support continues even after the workshop with lots of materials to help you get started. So grateful the Academy developed this training!

For more information visit www.eatrightpro.org/nfpe
Questions
Commission on Dietetic Registration

Continuing Professional Education Certificate of Attendance

—Attendee Copy—

Participant Name: ________________________________

Registration Number: ______________________________

Activity Title:
- MQii Learning Collaborative 2.0 Learning Event: Nutrition
- Focused Physical Exam

Activity Number: 143566

Date Completed: 09/17/2018

Number of CPEUs Awarded: 1.0

*Suggested Learning Need Code(s): ________________________________

*Suggested Performance Indicators: ________________________________

Provider Signature: ________________________________

RETAIN ORIGINAL COPY FOR YOUR RECORDS

*Refer to your Professional Development Portfolio Guide For LNCs or PIs
**Commission on Dietetic Registration**

**Continuing Professional Education Certificate of Attendance**
—Licensure Copy—

<table>
<thead>
<tr>
<th>Participant Name:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Registration Number:</td>
<td></td>
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</table>
| Activity Title: | MQii Learning Collaborative 2.0 Learning Event: Nutrition  
Focused Physical Exam |
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*Suggested Learning Need Code(s): |

*Suggested Performance Indicator(s): |

Provider Signature: 

Dane M. Enos, MPH, RD, FAND

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