

Virtual Reality Exploration of the Anatomical Basis for Physical Assessment of Muscle Wasting

Objectives: After completing this activity, students will be able to do the following in the context of a nutrition-focused physical exam (NFPE):

1. Name muscles commonly used in malnutrition assessment.
2. Locate each muscle to be assessed.
3. Describe the location and appearance of muscles used in malnutrition assessment.
4. Apply knowledge of anatomy while performing nutrition focused physical assessment.

Preparation:

1. Students will have baseline knowledge of NFPE and have performed it in a lab.

Materials:

1. Modarski, B. and Wolff, J. Nutrition Focused Physical Exam Pocket Guide. Chicago, IL: Academy of Nutrition and Dietetics, 2018.
2. Virtual Reality (VR) headsets with bone and muscle anatomy applications.

Activities:

1. Students will work in pairs. Each student will take turns using the VR headsets for a maximum of 5 – 10 minutes to identify the following muscles:
 - Temporalis
 - Pectoralis Major
 - Deltoid
 - Trapezius
 - Interosseous
 - Quadriceps
 - Gastrocnemius
2. Each student will choose 1 muscle to explore further. Using the VR app, students will isolate a muscle and then describe its features including location, appearance, shape, size, and any notable characteristics aloud to their partner. Partners will take notes of the description. Students will switch, with the second student choosing a different muscle to examine and the procedure will be repeated.
3. Students will then locate the muscle that they examined on their partner and perform visual and physical assessment of the muscle.

Assessment:

1. Pre-and post tests will be administered to assess knowledge of muscles included in NFPE and level of confidence in performing physical assessment of muscle wasting.
2. Students will record their reactions to the activity.

**Nutrition Focused Physical Exam (NFPE) for Muscle Wasting
Pre-test**

1. Circle 6 of the muscles that are used to assess muscle stores in NFPE

Triceps	Temporalis	Orbit	Quadriceps
Gastrocnemius	Clavicle	Deltoid	Trapezius
Interosseous	Scapula	Iliac crest	Pectoralis Major

2. How often have you performed nutrition focused physical assessment in your clinical sites?

3. On a scale from 1 – 5, with 1 being strongly disagree and 5 being strongly agree, please rate the following statement: I am comfortable performing physical assessment of muscle stores in patients. Circle the number that best corresponds to your feelings.

1 2 3 4 5

4. On a scale from 1 – 5, with 1 being strongly disagree and 5 being strongly agree, please rate the following statement: I have the knowledge and skills to perform physical assessment of muscle stores? Circle the number that best corresponds to your feelings.

1 2 3 4 5

5. Please add any comments.

Nutrition Focused Physical Exam (NFPE) for Muscle Wasting Post-test

1. Circle 6 of the muscles that are used to assess muscle stores in NFPE

Triceps	Temporalis	Orbit	Quadriceps
Gastrocnemius	Clavicle	Deltoid	Trapezius
Interosseous	Scapula	Iliac crest	Pectoralis Major

2. On a scale from 1 – 5, with 1 being strongly disagree and 5 being strongly agree, please rate the following statement: I am comfortable performing physical assessment of muscle stores in patients. Circle the number that best corresponds to your feelings.

1 2 3 4 5

3. On a scale from 1 – 5, with 1 being strongly disagree and 5 being strongly agree, please rate the following statement: I have the knowledge and skills to perform physical assessment of muscle stores? Circle the number that best corresponds to your feelings.

1 2 3 4 5

4. On a scale from 1 – 5, with 1 being strongly disagree and 5 being strongly agree, please rate the following statement: I enjoyed using Virtual Reality (VR) to learn anatomy for physical assessment. Circle the number that best corresponds to your feelings.

1 2 3 4 5

5. Did you experience any nausea or dizziness when using the VR headset? If so, please describe what you experienced and its intensity (mild, moderate, severe).

6. Do you feel that this activity helped you to assess muscle on your partner?

7. Please add any comments.