

## Back and Gluteal Muscles

Time: 60 – 80 min

These activities are designed to build on those from the class before. We start with the basics of terms of movement. When students have reviewed that then we introduce activities that match those basic terms of movement with the appropriate back or gluteal muscles. Students learn to think about the muscle by matching function and name and then incorporating matching the muscle function with the muscle image. Our goal is to have students attack the information from as many angles as possible. Finally, students finish the activities, putting together what they have learned, by watching videos of people using various muscles during weightlifting exercises and indicating movement and muscle(s) responsible.

### Activities:

#### 1) ANATOMICAL MOVEMENT CHARADES

##### SETUP:

- Write terms of movement on 3x5" index cards (cut in half), one movement per card.
- Write enough movements to make a set for movement charades.
- For example, a card could read "flexion" or "depression" etc.

Instructions: Distribute movement charades cards to groups. Students take turns, as in the game charades, drawing a movement card and acting out the movement. Their classmate has to guess what movement they are acting out.

Worksheets: none

Instructor comments: Note - This is the same setup and activity as the Anatomical Terms of movement activity from a previous class. It helps to do this activity first to review general terms of movement before moving on. We want to build in difficulty with them simply understanding basic terms first. Then they incorporate the muscles responsible for these functions in the next activity.

#### 2) MUSCLE MOVEMENT CHARADES

##### SETUP:

- Write muscle names on 3x5" index cards (cut in half), one name per card. Use as many muscles as you'd like.

Instructions: Distribute muscle name cards to groups. Students take turns, as in the game charades, drawing a card with the name of a muscle on it. They must act out the function of that muscle and see if their partner can guess the function being acted out *and* the muscle(s) doing it.

Worksheets: none

Instructor comments: Easy to do and students generally have fun with this one.

### 3) MUSCLE NAME AND 2<sup>ND</sup> ORDER MATCHING

SETUP:

- On a piece of paper, list out one type of 2<sup>nd</sup> order information for each muscle. Pick only one per muscle, but mix up what you ask. For example, for one muscle you might ask innervation, for another muscle, its function or bony attachment. You can do this for the muscles used in activity 2, or add in different ones.
- You can re-use the cards with muscle names from previous activities, or list and cut strips of paper, each with an individual muscle name.
- Print out the muscle names and 2<sup>nd</sup> order information and cut into strips of paper.

Instructions: Distribute the strips of paper with muscle names and the strips with 2<sup>nd</sup> order information to each group of students and have them match the muscle with its appropriate 2<sup>nd</sup> order information. Be careful not to include 2<sup>nd</sup> order information that would apply to more than one muscle.

Worksheets: none

Instructor comments: A little more difficult as students have not done much work with muscle specifics yet.

### 4) MUSCLE IMAGE AND 2<sup>ND</sup> ORDER MATCHING

SETUP:

- Paste and print out isolated images of muscles on paper. You can paste more than one image on a page.
- Use the strips of paper with 2<sup>nd</sup> order information from the previous activity, or make new ones based on what muscles you choose

Instructions: Distribute the pages of isolated muscle images and the strips with 2<sup>nd</sup> order information to each group of students and have them match the muscle image with its appropriate 2<sup>nd</sup> order information. Be careful not to include 2<sup>nd</sup> order information that would apply to more than one muscle.

Worksheets: none

Instructor comments: This builds on the previous activity. Students need to know name of muscle, function of muscle, *and* identify the muscle. The importance of this activity is so they visualize the muscle contracting/shortening and start to see how this will move the bones it is attached to. Should reinforce the importance of doing more than memorizing words on a page.

## 5) MUSCLE MOVEMENT VIDEOS

### SETUP:

- Upload gym movement videos of deep back, gluteal and shoulder muscles to class laptops *before* the class starts.
- Should have one laptop per 3 students.
- Before class, have students watch videos of basic movements (flexion, extension, abduction, etc) so activities for the day are somewhat review.
- Students worked 2-4 per group and went through the mm videos on their computers. They noted a) what motion was happening at the joint (flex, ext, abduct, etc) and b) what muscle (s) is responsible for that movement. I projected a list of the joints/bones for each video I wanted them to concentrate on movements for (mm video movement list file). I didn't want them to worry about movements at the elbow or wrist in a video on shoulder/arm movement.

Instructions: Students view each video of a person doing exercises and weightlifting at the gym. For each video, for each joint specified, students must indicate:

- a) what movement was happening at the joint (flexion, rotation, etc)
- b) what muscle(s) is responsible for that movement

Worksheets: [Back and Gluteal muscles worksheet](#); Videos available on request

Instructor comments: This activity is what all the other activities of the day lead to. It's not important that they get everyone correct, just that they learn to start thinking more in 3D regarding muscles and function. They struggle here, mainly in isolating what is happening at any one joint. For example, when asking them what muscles and functions are indicted in the video at the shoulder joint (ie. arm movement), they may have difficulty not getting distracted by what the forearm is doing in the video.

# MUSCLE VIDEO EXERCISE WORKSHEET

[Jump to activity description](#)

## Back 1

- a. Where is the movement occurring? In anatomical terms, what is the movement called when he's going backward (i.e., posteriorly)?
- b. What muscle(s) from this unit are responsible? Eek! This might take some thinkin'. You got this!

## Back 2

- a. From 0:01 to 0:48, what movement is occurring at the shoulder/arm when the man pulls down on the bar, and when both the man and the woman pull their chins to the bar during a pull-up (hint: it's the same movement in both instances)?
- b. What muscles from this unit are responsible

## Back 3

- a. When the man draws his arms and shoulders back, what movement is happening with his scapula?
- b. What muscles from this unit are responsible?

## Back 4

- a. When the man's forearm moves laterally, what movement is occurring at the shoulder?
- b. What muscles from this unit are responsible?

## Back 5

- a. Please skip ahead to 0:18 on the video. From 0:18 to 0:32, what movement is happening at the shoulder joint? What muscles from this unit are responsible for this movement?
- b. Now go back to 0:00. What movement is happening at the shoulder joint? What muscle from this unit are responsible for this movement?
- c. From 0:35 to 0:42, in anatomical terms, what is the scapula doing? (Hint: Same as in the Back 3 video) What muscle(s) from this unit are responsible?

## Back 6

- a. When the woman pushes backwards (posteriorly), what movement is occurring at her hip/thigh?

b. What muscle(s) from this unit is responsible?

**Back 7**

a. When the man's shoulder move's superiorly, what is the scapula doing?

b. What muscles from this unit are responsible?

## TAKE HOME WORKSHEET

**Follow up Questions - for when you're like "Huh, do I really know actions of these muscles?" — well, let's find out!**

1. Because this first week of classes is madness, I go for a run to take my mind off things. I was scampering along, when I fell down a large ravine (don't ask where I was running). I'm okay, but I must have damaged some muscles. I'm mostly having trouble laterally rotating and extending my thigh/hip. Of all the muscles listed below, which ones could I have injured on my fall (circle all that apply)?
  - A. Gluteus Maximus
  - B. Piriformis
  - C. Latissimus Dorsi
  - D. Gluteus Medius
  - E. Superior Gemellus — what the heck is that (did Jess make that up)...to the lap manual to verify!
  - F. Gluteus Medius
  - G. Quadratus Femoris
2. Okay, you've been hunched over your computer for quite sometime, studying this pesky human anatomy stuff, and you notice you need to stretch your back. You pull your shoulders back, which \_\_\_ your scapula, while using your \_\_\_\_\_ muscle(s). *The order of the terms below corresponds to the order of the spaces.*
  - A. protract, Teres Minor and Serratus Anterior
  - B. elevate; Rhomboid Major and Minor
  - C. retract; Trapezius and Subscapularis
  - D. retract; Rhomboid Major and Minor and Trapezius
  - E. All of these could be correct
3. Okay, I'm playing fetch with the dogs with a tennis ball, and I'm throwing into the wind. The ball is going like maybe two feet in a strong Oklahoma headwind. In my frustration and hopes of giving my dogs adequate exercise, I wind up and throw the ball as hard as I can. Woe is me! The ball goes like two and a half feet this time, and (and!) I hurt one of my "rotator cuff muscles". Yowza! If I can no longer medially rotate my humerus (and, no, this is not *humorous*...my shoulder hurts I tells ya!), which "Rotator Cuff" muscle might I have injured?
  - A. Teres Major M — *Doh! Not a "Rotator Cuff" M*
  - B. Teres Minor M
  - C. Infraspinatus M
  - D. Deltoid M
  - E. Supraspinatus M
  - F. Subscapularis M
  - G. Aha! None of the above...maybe...crud...I dunno

4. Alrighty, moving along, smarty McSmarty pants! Here's a real noggin scratcher. In the near future, when *you're* a healthcare professional, you have a patient that has pinched their Sciatic N. People are worried that some of the patient's gluteal muscles (MM) won't be able to contract because the Sciatic N is severed. While in a room with other healthcare peeps, you proudly proclaim to anyone that'll listen that
- A. Only the Gluteus Maximus M will be injured
  - B. Only the Gluteus Medius and Minimus will be injured
  - C. I have no idea what I'm doing. Peace! I'm outta here!
  - D. All of the small lateral hip rotator muscles will be injured, like the Piriformis, Obturator Internus, etc.
  - E. It's fine, peeps! None of the muscles of the gluteal region will be injured because there are no muscles in the gluteal region innervated by the Sciatic N. Didn't you guys take human anatomy?
5. Okie dokie. One more. Let's make it a good one. Holy moly! Now, *my back* is hurting from being hunched over my computer, typing these questions. Ouchy. If my anatomy training has served me correctly, I think I may have overworked and injured one of my deep muscles of my back (i.e., my "true" back muscles). Specifically, my most lateral portion of my lower back, on both left and right sides, is sore, and I cannot laterally flex my torso, nor can I extend my back. What muscle do you think I injured? Help!
- A. Splenius Capitis M
  - B. Iliocostalis M
  - C. Rhomboid Major M — pssh...that's not a deep/"true" back muscle... is it?
  - D. Spinalis M
  - E. My locational description of my pain and what I can no longer do does not fit any muscles listed.