

The Skeletal System and the Muscular System—The Musculoskeletal System

Input-My Notes

The **Skeletal System** is made up of organs known as bones, which help to support the body in a vertical position, to protect the organs of our body, and to make red and white blood cells that help to make blood and protect our body from infection.

Important bone structures such as the skull help protect the _____, the spine known as the vertebral column helps to protect the _____, and the ribs help to protect the _____ and _____.

The **Muscular System** is responsible for allowing the body to move. It is responsible for moving the bones of the body once the Nervous System has sent a signal for it to do so.

Muscles have an **antagonistic** relationship with each other. For example, in the arms, the biceps and the triceps show opposite relationships to one another. If the biceps contract, then the triceps are in a _____ state. If the biceps are in a relaxed state, then the triceps are _____.

There are **3 main types** of muscles found in the body: *smooth, skeletal, and cardiac*.

- A. **Smooth Muscle**- muscles that are involuntarily controlled, which means you cannot control it; only the brain can. Examples include peristalsis and the muscles of your lungs.

Output-Your Notes

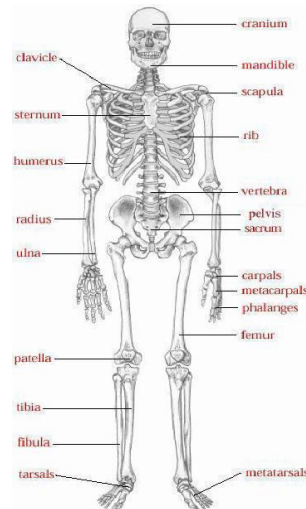
The Skeletal System is made up of what organ?

What functions does the Skeletal System help the body to do?

1.

2.

3.



On the diagram above, locate and label the skull, ribs, and vertebral column.

1. What body systems do the ribs protect?
2. What body systems does the vertebral column protect?
3. What body systems does the skull protect?

B. **Skeletal Muscle**- muscles that are consciously controlled, which means that you have the ability to control it.

Examples include your biceps, legs, neck, etc.

C. **Cardiac Muscle**-Cardiac Muscle is the main muscle of the **heart** that contains many mitochondria so that the heart has enough energy to keep beating. **This type of muscle is involuntarily controlled.**

Muscles of the body have many different connection points. These type of connective tissue known as either **tendons or ligaments.**

Tendons—Connective tissue of the muscle that connects muscle to bone. An example of a tendon is found above the heel, known as the **Achilles tendon.**



Ligaments

Ligaments are connective tissues of muscles that connect **bone to bone.** An example of a ligament is found in the **knee.**

- A. What body system controls the Muscular System?
- B. Where can I look inside find where red and white blood cells are formed?

Fill in the blanks with the correct system:

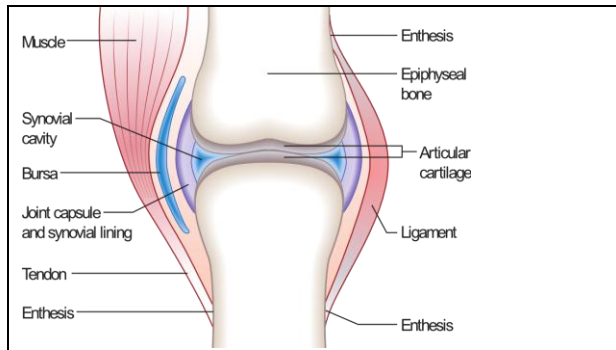
_____ Muscle	Peristalsis
_____ Muscle	Heart Beating
_____ Muscle	Stretching

Define these words:

- a. Involuntarily –
- b. Voluntarily--

Greek Mythology—Just for fun!

The name Achilles' heel comes from Greek mythology. Achilles' mother, the goddess Thetis, received a prophecy of her son's death. Hearing this, she dipped him into the River Styx to protect his body from harm. However, she kept hold of his heel, meaning that the water did not touch this part of his body and it was therefore vulnerable. During the Trojan War, Achilles was struck on his unprotected heel by a poisoned arrow, which killed him. In the same war, Achilles is also said to have cut behind Hector's Achilles tendons, having killed him, and threaded leather thongs through the incisions in order to drag him behind a chariot.



Pre-SAG Mini- Project

You are to make a Glog in which you compare a portion of the skeletal and muscular system to physics. You must include the words, fulcrum, lever, pivot, joint, supply/ load force.

The background of your Glog must be black. I need your name and HR inside of the Glog. You must include a **'Vocabulary'** Section that includes the aforementioned words and their definitions and a picture showing all of the connections and how these words work together. I want at least 3 different videos showing how the skeletal and muscular system can be compared to Physics, which you have learned last year.

I need a 7-10 sentence blurb of how a portion of the skeletal and muscular system could be compared to physics. I need you to cite at least two different sources in MLA format. **Due Friday morning 10.15.10 at 8:00a.m.**

What is this a picture of?

Highlight the word 'ligament' in the picture.

What does a **ligament** connect?

What does a **tendon** connect?

SAG Mini-Project

You are to make a **3D working model** of the relationship between the muscular and skeletal system that include and shows how the words, fulcrum, lever, pivot, joint, supply/ load force work together to achieve a certain purpose. You, with your model are to discover what that 'purpose' is.

Remember, your model **MUST** work and show the terms working together. Instead of a Glog, your group will need to make a real life Glog in the form of butcher paper that includes facts about the skeletal and muscular system and its Physics relationship, vocab words, a title, and sources in MLA format. Instead of video, you will do a small presentation that shows how your 3D model works. Remember, no clay model-your model must function-it MUST work. **Due Friday in class 10.15.10.**

HW:

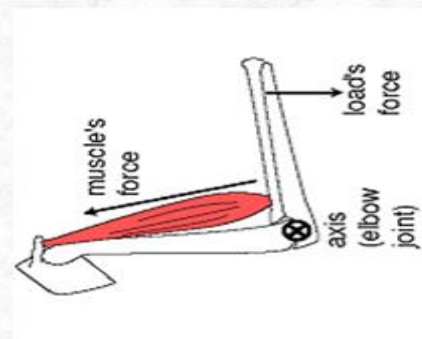
1. Skeletal and Muscular System Torso
2. **Vocabulary:**
 - a. Skeletal System
 - b. Muscular System
 - c. Skull
 - d. Ribs
 - e. Vertebral column
 - f. Skeletal Muscle
 - g. Smooth Muscle
 - h. Cardiac Muscle
 - i. Peristalsis
 - j. Antagonistic
 - k. Tendons
 - l. Ligaments
 - m. Voluntarily
 - n. Involuntarily

II). Bones & Muscles as Levers

Levers have 4 components

- 1). Rigid bar
- 2). Pivot/fulcrum
- 3). Object that creates resistance
- 4). Force that supplies movement

i.e.

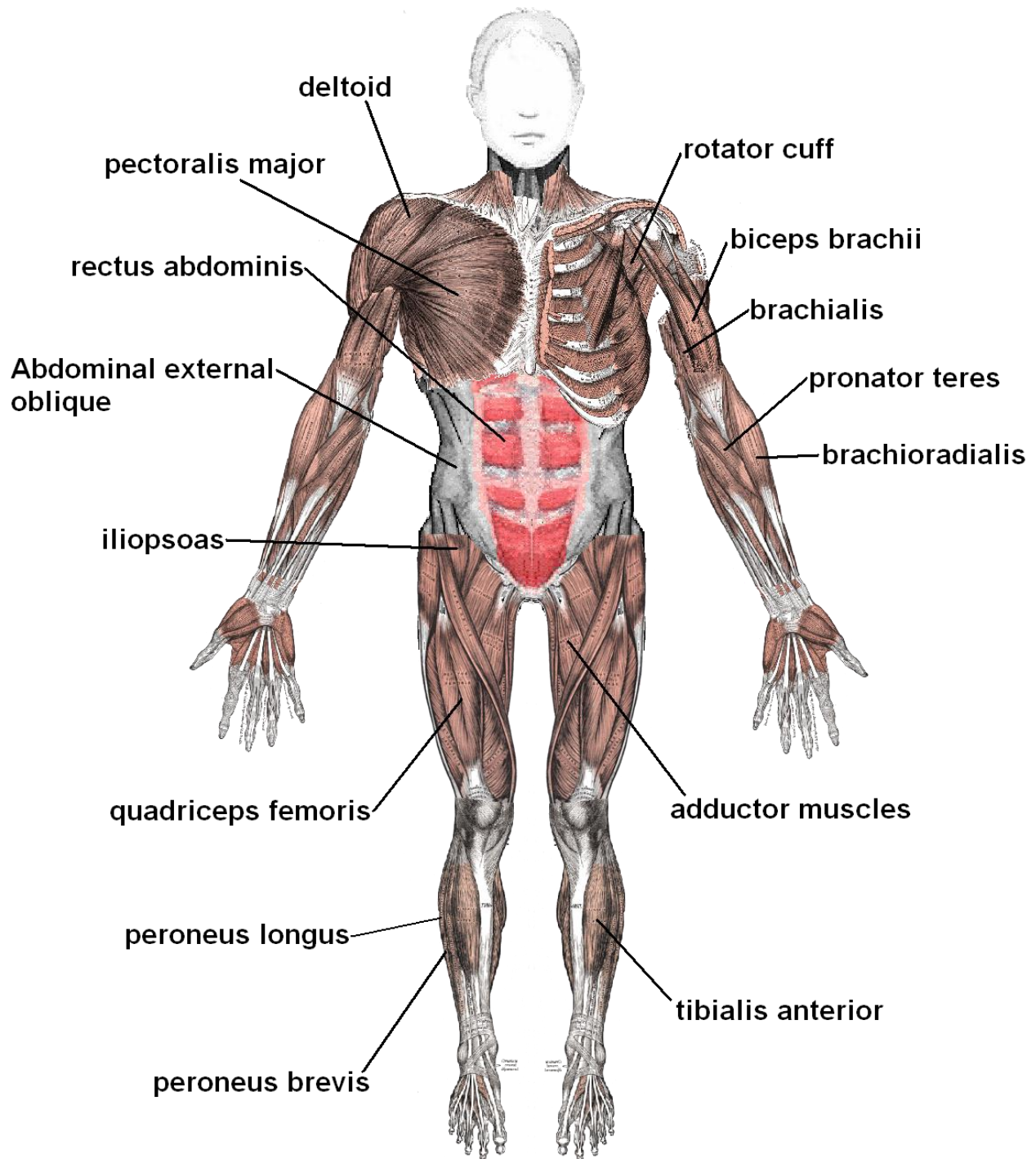


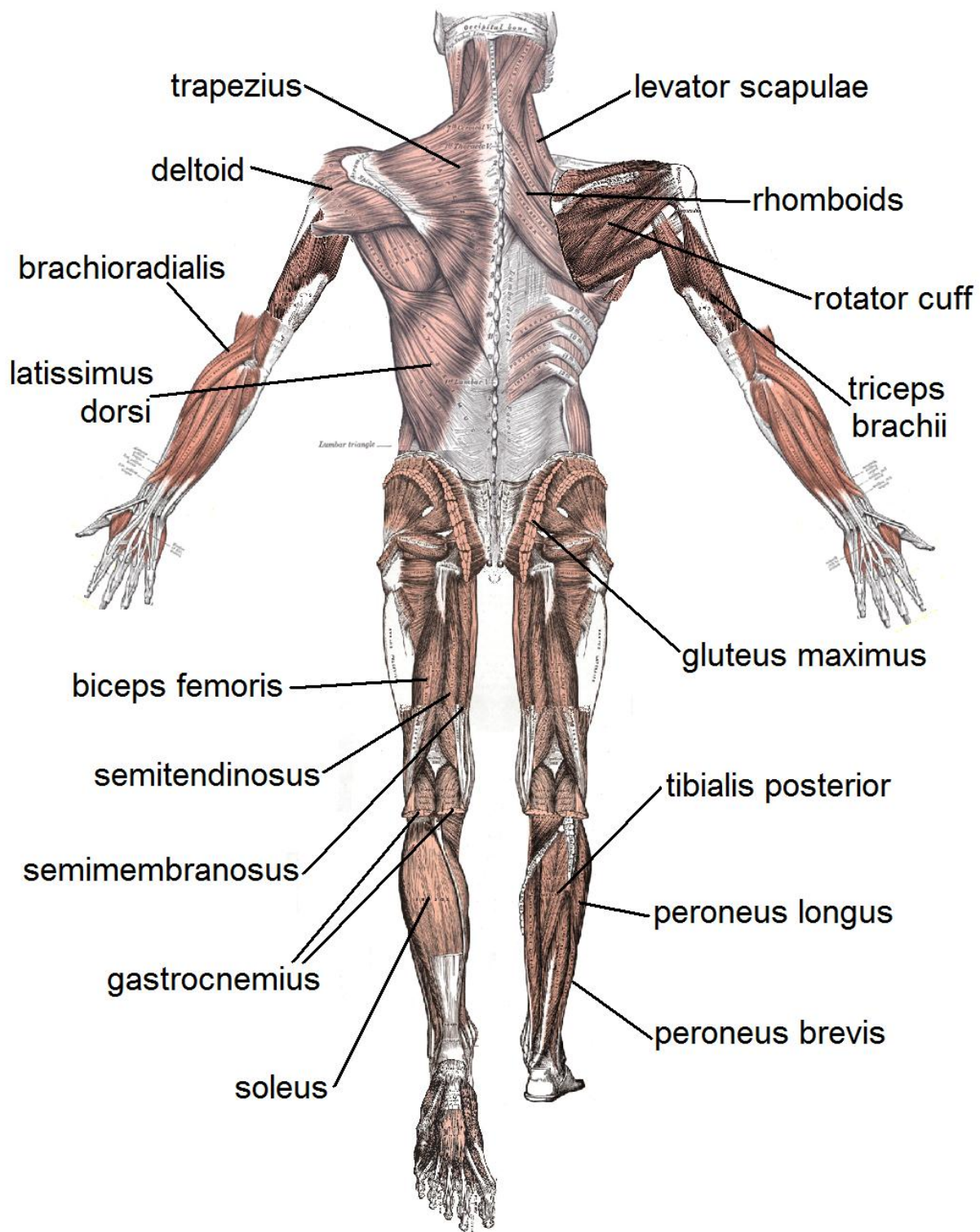
When the arm bends the bone represents the rigid bar

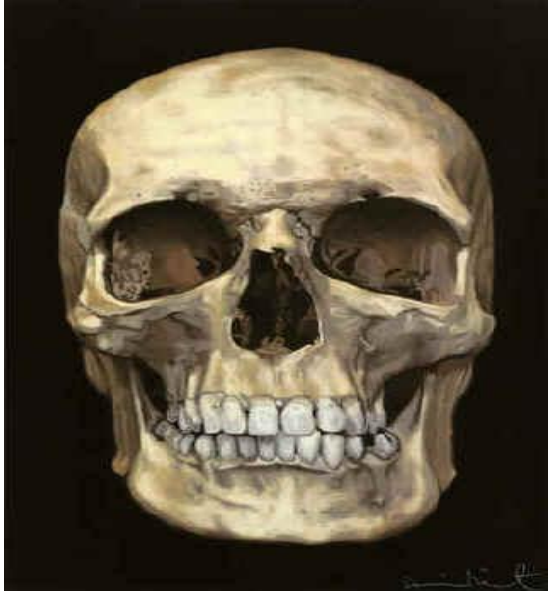
The elbow joint is the pivot

The hand is moved against the resistance or weight (weight of hand)

The muscles supply force.









Anatomia