

Chicken Wing Dissection

How do the muscles, bones, and tendons work together to move a joint of a chicken wing and how do they compare to a human arm?

Although many differences exist between the anatomy of humans and chickens, one structure that shows similarities in muscle pairing and range of motion is a bird's wing. In this activity you will study chicken wing structure and function, which is comparable to that of the human arm.

Bones of the Human Arm

The arm reaches from the shoulder to the wrist. It consists of two basic parts:

- (1) the **upper arm**, which extends between the shoulder and the elbow, and
- (2) the **forearm**, which extends between the elbow and the wrist.

The upper arm is formed by one long bone, the **humerus**. The top end of the humerus is rounded and fits into a cup-shaped depression in the scapula, or shoulder bone, forming a ball-and-socket joint. Ball-and-socket joints allow for circular movement.

The two bones of the forearm are the **radius** and the **ulna**. The ulna is fixed in position, but the radius can rotate over the ulna. This makes rotation of the forearm possible in motions such as twisting a screwdriver.

Skeletal Muscles of the Human Arm

Skeletal muscles are responsible for hundreds of movements. When an organism wants to move, signals travel from the brain to the skeletal muscle cells. The muscle cells then contract, or get shorter.

Strands of tough **connective tissue** connect the skeletal muscles to bones. These strands of tissue are called **tendons**. When a muscle that connects two bones gets shorter, the bones are pulled closer to each other. For example, tendons attach the biceps muscle to a bone in your shoulder and to a bone in your forearm. When the biceps muscle shortens, your forearm bends toward your shoulder.

The skeletal muscles often **work in pairs** to produce smooth, controlled motions by pulling, or contracting. When one muscle in the pair bends part of the body, the other muscle **extends** or straightens part of the body.

Bones of the Chicken

The **upper wing** consists of a **humerus**, which is at one end, and the **ulna** and the **radius** at the **lower wing**. These bones connect at the **elbow joint**. The rest of the wing is composed of modified hand bones.

