

## The Wrist

The eight little bones of the wrist or carpus are distributed in two rows of four bones each. The proximal row articulates with the concave surfaces of the radius and ulna. The major articulation uniting forearm and wrist is known as the radiocarpal joint.

The joints linking the proximal and distal rows of carpals form the **midcarpal articulation**. The distal carpal row joins the proximal ends of the five hand-bones or **metacarpals**, forming the **carpometacarpal articulation**.

The thumb's carpometacarpal joint allows for more diversity of movement than in any of the other digits

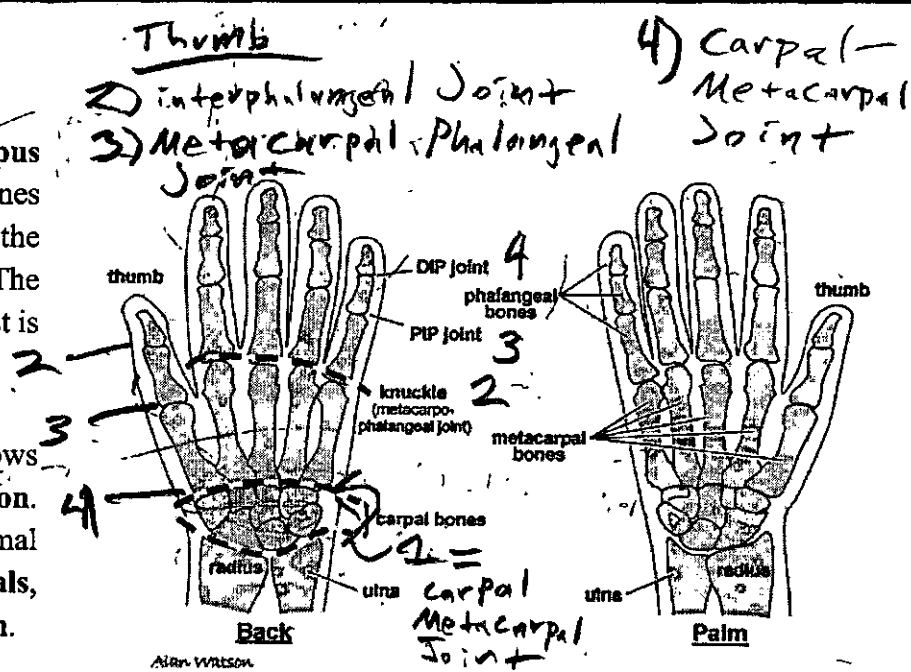


Figure 1-17. Bones of the hand. © 2009 Alan H. D. Watson. - Reproduced under license.

- (1) **Flexion (palmar flexion)** is the movement of bringing the hand and fingers closer to the forearm on the palm side. The two wrist flexor muscles (**radial flexor** and **ulnar flexor**), working together (as well as the rather weak action of the **long palmar muscle**, which is, however, absent in a good number of people) are responsible for this movement. When working separately, they flex the wrist with a slight deviation to the radial or ulnar-side, respectively.
- (2) **Extension** is the opposite movement to flexion, returning the wrist to an aligned position with the forearm. The wrist extensors (strictly speaking, three muscles: the **long and short radial extensors** – which can be considered as one, since they lie side by side and have undifferentiated functions – and the **ulnar extensor**), when working together, cause this action. When working independently, they extend the wrist also with some radial or ulnar deviation, respectively.
- (3) **Hyperextension (or dorsal flexion)** is the continuation of the extension towards the dorsal side of the forearm.
- (4) **Radial abduction (or radial deviation)** is a movement of the wrist to the thumb side. This movement is the result of *both* radial flexors and extensors working together (assisted by the thumb abductor).
- (5) **Ulnar abduction (or ulnar deviation)** is the movement of the wrist to the little-finger side. Both flexor and extensor on the ulnar side work together in this movement.

Excessive wrist deviation, to the radial or ulnar side, as well as excessive flexion and hyperextension, are some of the most common causes of technical deficiencies and even physical discomfort or injury in guitar playing.

As Rene says you play too high

Holding position in these extreme attitudes for prolonged periods of time will create problems for the performer.

**Circumduction**, as explained in the context of the shoulder joint, is a conical movement of the joint that is a combination of movements of flexion, deviation, and extension.

## Section 1. Musculoskeletal Framework

In the act of playing the guitar, we utilize our musculoskeletal system in two ways: a part of this system is involved in providing a base of stability and support, while other parts are involved in movements whose coordination is the goal of technical training. The support base (the relatively static part) is articulated skeletally through the linkage between the **axial skeleton** (Figure 1-1), made up of the head (the skull), the spinal or vertebral column, the sternum and the rib-cage (the thorax), with the lower extremities, which are part of the **appendicular skeleton** (Figure 1-2), made up of the shoulder and pelvic girdles, and the upper and lower limbs.

In the standard sitting position of the classical guitarist, these parts of our skeleton provide the necessary positional stability for the free-moving parts that actually play, the dynamic part: the upper limbs. Of course, it is evident that the stability provided by the more static structures is not a total constraint on mobility. On the contrary, in the course of playing, mobility in the head and spine, and to some extent in the legs, is a normal part of efficient execution.

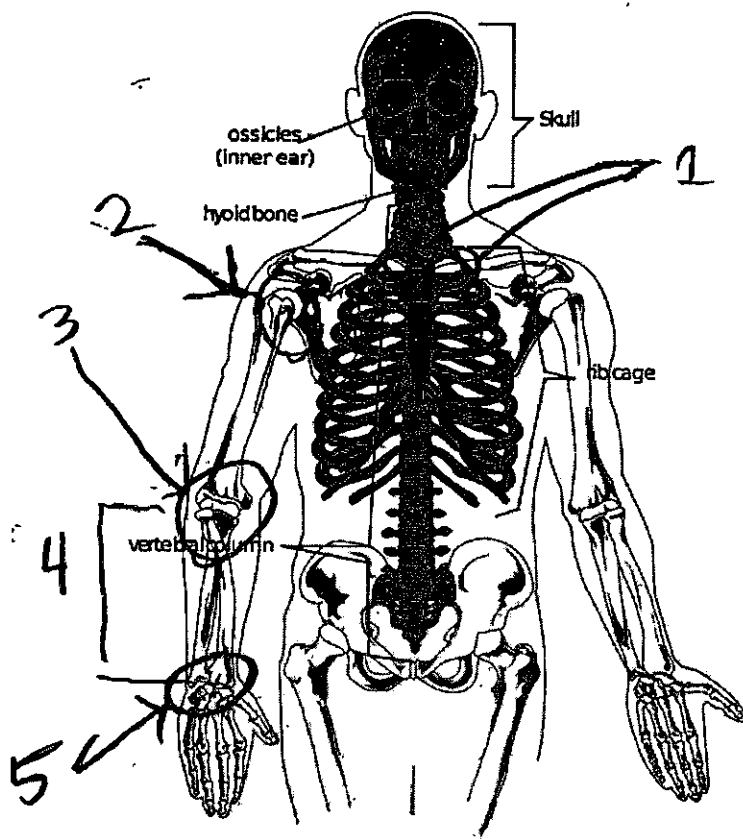


Figure 1-1. The axial skeleton

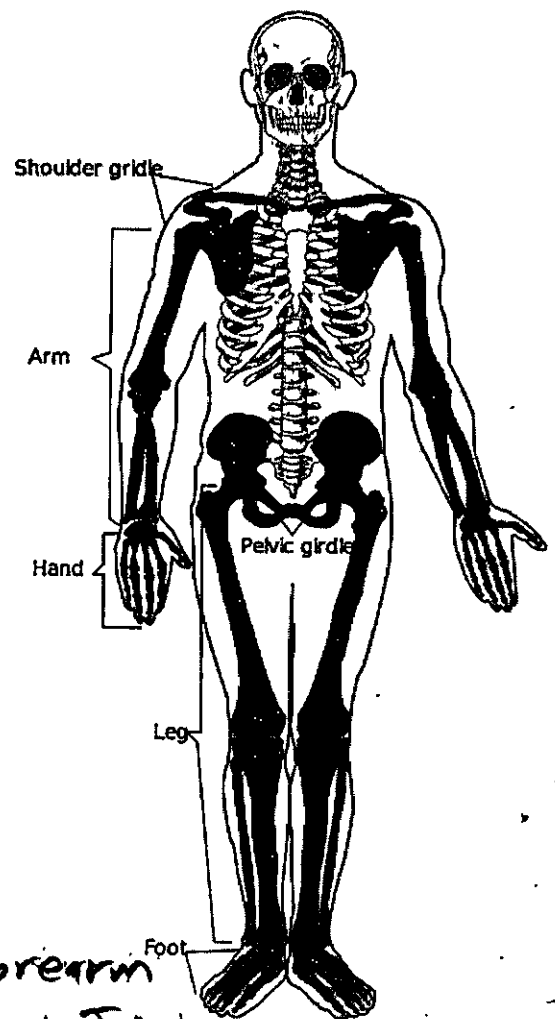


Figure 1-2. The appendicular skeleton

- 1) Sterno-clavicular Joint  
 2) Shoulder Joint  
 3) Elbow Joint  
 4) Forearm  
 5) Wrist Joint

The axial skeleton (Fig. 1-1) consists of the bones in the head and trunk of the human body. It is composed of five parts: the human skull, the ossicles of the inner ear, the hyoid bone of the throat, the chest, and the vertebral column. The appendicular skeleton (Fig. 1-2) includes the pectoral girdle, the upper limbs, the pelvic girdle, and the lower limbs. The appendicular skeleton and the axial skeleton together form the complete skeleton. Mariana Ruiz Villareal, 2007.