

I. Body Mapping:

- i. Basic understanding of anatomy and physiology with emphasis on how the joints move in order to better execute instrumental techniques. Body Mapping emphasizes having a mental map of joints and understanding how they move the limbs in order to refine one's understanding and execution of guitar techniques. (Connable 5).

II. This chapter starts us down the body mapping process by providing us with the list of joints we need, sub-lists of how they move, working from the center of the body out to the fingers.

- i. I want you to start thinking from the center of the body out.
- ii. To think about how all these joints closer to the center of the body in comparison to the fingers and hand hand (working back to the center of the body: forearm, elbow joint, arm to shoulder joint, spine) effect the hand.
- iii. The goal of this method is to put this concept in plain English. The few methods that cover this type of thing and are either too vague (Carlevaro for example) or too much information that obscures this knowledge and it's benefits behind scientific information that is beneficial for a teacher but obstructs pedagogy for the majority of students (Iznaola Summa Kitarologica)

III. Planes of motion:

- i. In order to speak more articulately about the body the planes of motion vocabulary below can often be helpful.
- ii. For example, one can talk about the right forearm's contact point with the top of the guitar as being either more distal or more proximal (more towards the elbow or away from the elbow. HOWEVER, keep in mind these words actually reference being closer or further from the center of the body, not the elbow).
- iii. So you can say (for example) the right arm contact point with the top of the guitar for rest stroke is more superior for some techniques or sitting positions then others which are more inferior.

iv.

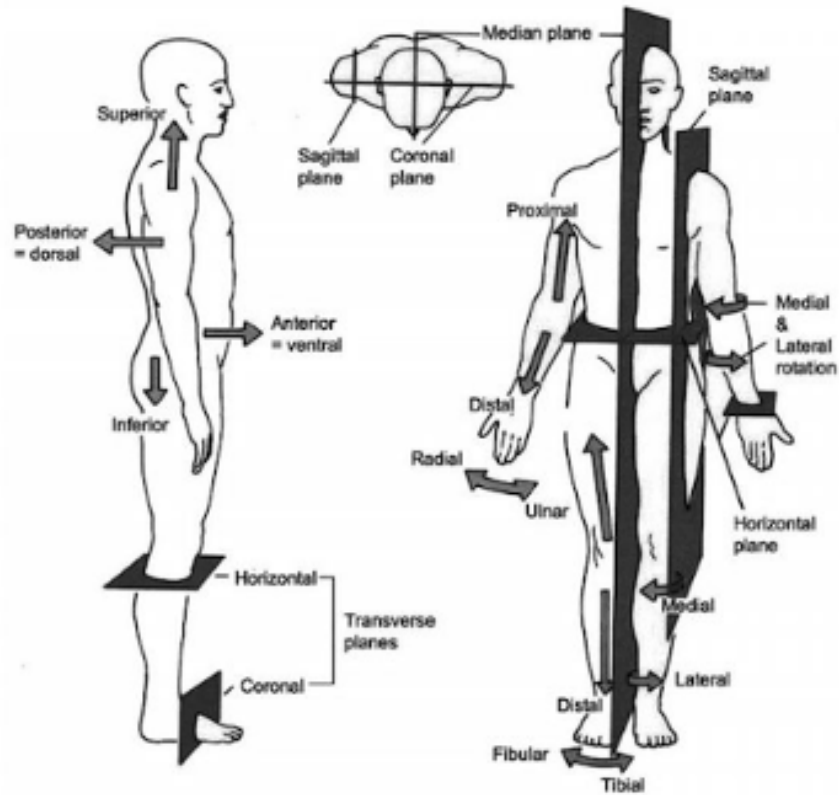


Figure 1-10. Anatomical planes and terms of position. © 2008 Ronan O’Rahilly, www.dartmouth.edu/~humananatomy/index.html/ . Reproduced with permission of the authors.

IV. MOTIONS OF THE SPINE AND HIPS RELEVANT TO GUITAR TECHNIQUE

i. Joint 1: The Spine:

A. **Flexion:** Leans your upper body forward. This is the motion for a crunch.

B. **Extension:** returns body to starting position of crunch.

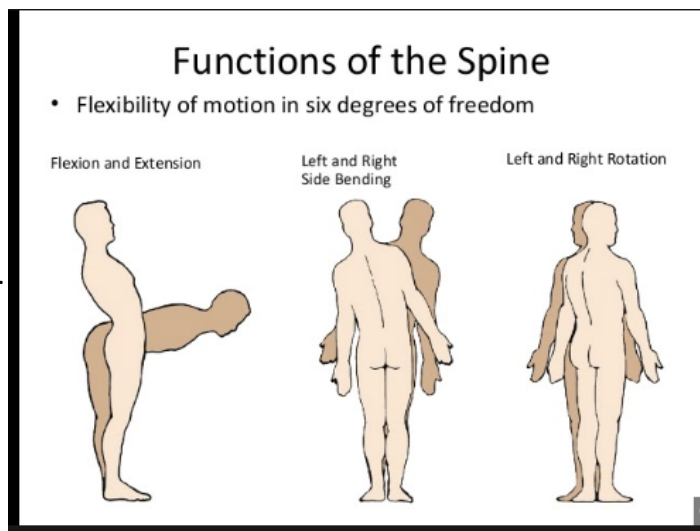


C.



D. The Spine also **leans left or right**.

E. The spine also **twists left or right around its axis** (if you wanted to look left or right with your whole torso).



F.

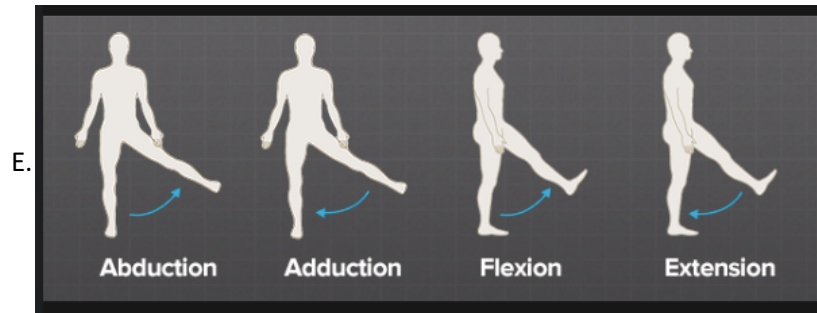
ii. **Joint 2: Legs:**

A. **Flexion:** brings leg forward when walking.

B. **Extension:** leg returning to the starting position (as if you took one step forward and then immediately back without actually walking).

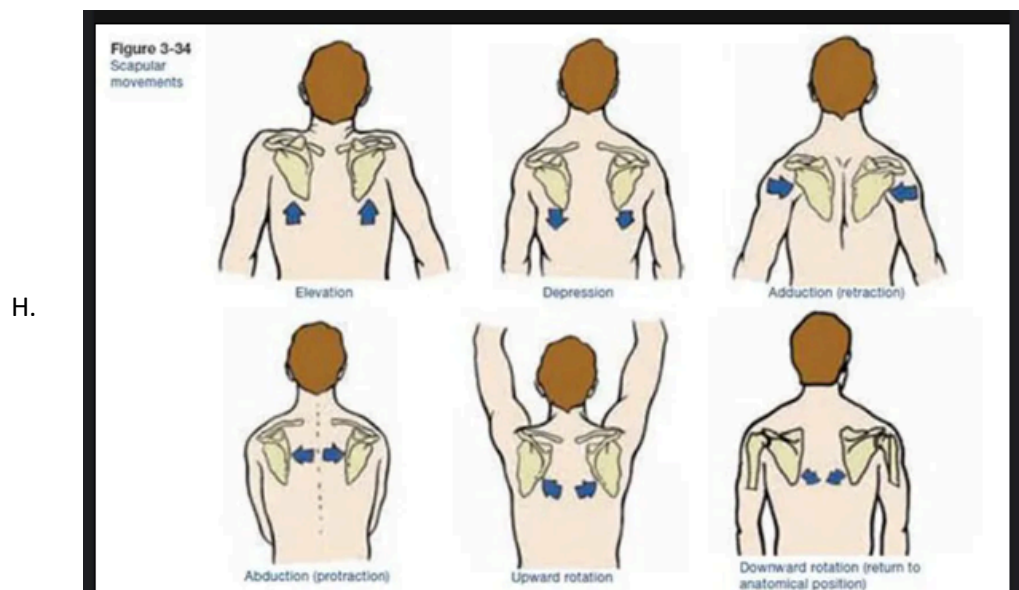
C. **Abduction:** Spreads leg out from the side of your body.

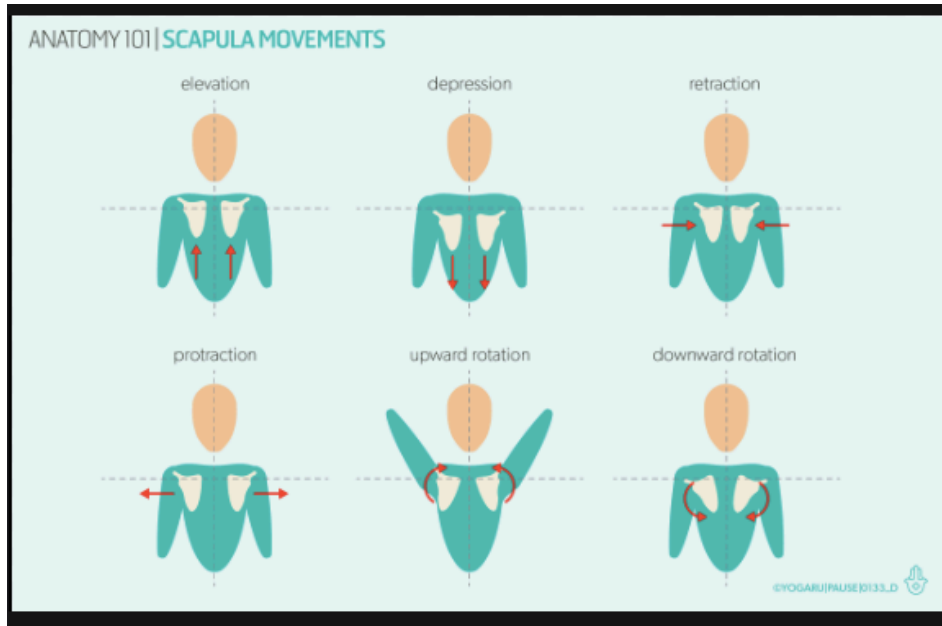
D. **Adduction:** brings leg back to the side of your body.



iii. **Shoulder Girdle:** (Iznaola 21-22)

- A. Most of these motions should be avoided.
- B. **Adduction:** Chest out (military pose). Brings the shoulder blades closer together.
- C. **Abduction:** Returning to relaxed from adduction and/or going past the point of relaxed (returning from military pose).
- D. **Elevation:** Shrugging the shoulders for the “not sure/I don’t know” motion.
- E. **Depression:** Returning from elevation (the shrug) and/or going beyond the relaxed point before the shrug.
- F. **Rotation Upward:** Lifting up the shoulder to arm joint (where the arm and the upper body meet).
- G. **Rotation Downward:** Returning the shoulder to arm joint to it’s initial relaxed position (where the arm meets the body to its neutral position and/or going beyond neutral).



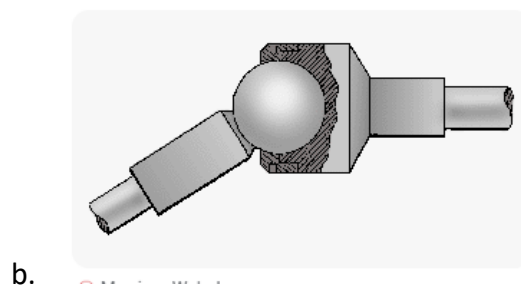


I.

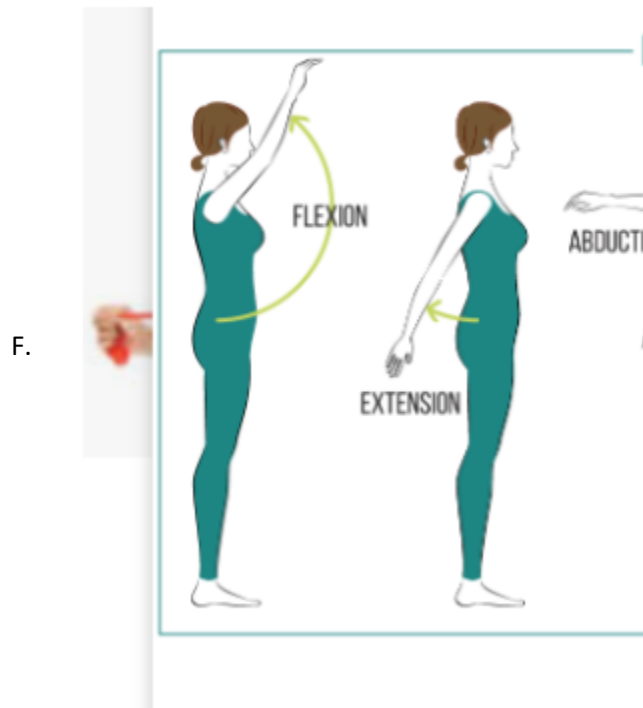
V. **Arm Joints Relevant to Guitar Technique:**

i. **Shoulder to Arm Joint:**

- A. This joint is immediately to the left or right of your head.
- B. The arm to shoulder joint is a ball and socket joint and hence has a wider variety of potential motions when compared to say the elbow.



- C. **IMPORTANT:** Muscles that act on this joint or are in the upper back and shoulders. All the muscles of the remaining arm joints (elbow, forearm, wrist, fingers) are potentially effected by the shoulder to arm joint's motions.
- D. **Flexion:** this motion brings the arm forward and away from the side of the body. It is what gets you to the starting position in the workout image below.
- E. **Extension:** brings the elbow back to the body's side and brings the elbow behind the body. It pulls the kettlebell closer to the body in the second image below.



witch sides, and repeat.



- G. **Abduction:** brings the elbow up and out from the side of the body (like spreading imaginary wings, see right side of workout image below).
- H. **Adduction** brings the elbow back to its resting position at the side of the body (bringing the wings back in) and brings the kettle bell back to the starting position (left side of the workout image).

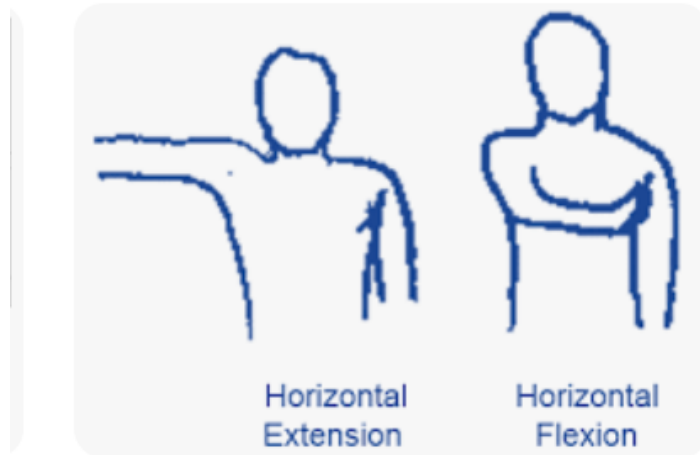


I.



J.

- K. **Horizontal Flexion and Extension:** with shoulder fully abducted, Horizontal Flexion maintains the abducted elbow but brings the elbow/hand into the body towards the chest, as if to grab the opposite arm or shoulder. Horizontal extension returns the elbow back to its starting abducted position. Basically its what lets you do a chest fly:



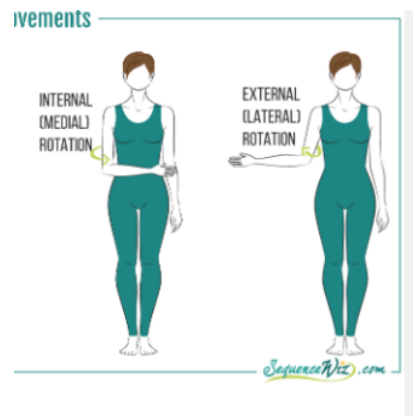
L.

 Amac Training



M.

- N. **Lateral Rotation:** rotating the whole arm from the shoulder to arm joint so that the palm of the hand is facing away from the body (the arm is adducted and hanging at the side of the body, no flexion, extension, abduction).
- O. **Medial Rotation:** Rotating the whole arm back to its starting position or beyond so that the palm of the hand is facing the body (the arm is adducted and hanging at the side of the body, no flexion, extension, abduction).



P.

II. The Elbow Joint: (Iznaola 24-25)

i. IMPORTANT:

- A. The motions of the elbow joint are created by muscles in the upper arm (biceps and triceps in the upper arm).
- B. They will also can impact and potentially cause forearm rotation and wrist deviation/flexion/extension.
- C. The elbow plays a role in positioning the wrist although the goal of this method is to teach you to move your arm using the shoulder to arm joint so sometimes the elbow joint is passively moving along with the whole arm and other times it is engaged to help the fingers (particularly in Flamenco posture).

ii. **Flexion:** (dumbbell curl)

iii. **Extension:** (returning dumbbell to starting position).



iv.



v.

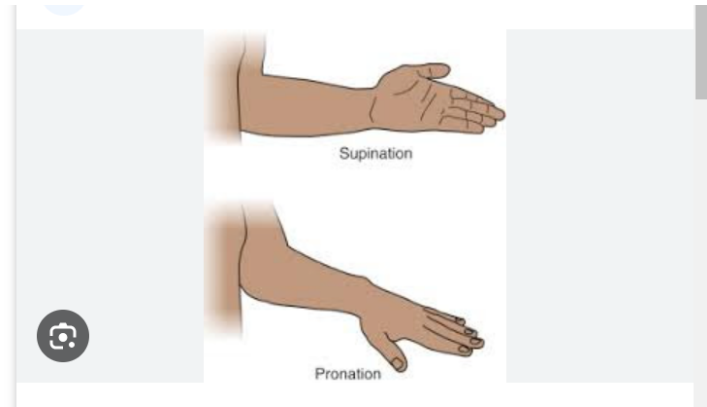
III. Forearm (Forearm Rotation): (Iznaola 25)

i. **Pronation** (palm down).

ii. **Supination** (palm up):

A. One of my students in the class I taught at ISU (I experimented with this stuff in my Teaching Assistant class to practice communicating it) gave me gold: this is where you hold the soup cup (soupination!).

iii. **Forearm rotation:**

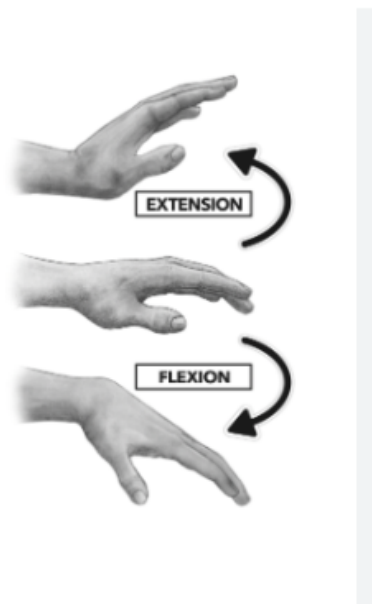


iv.

- v. **IMPORTANT:** Forearm rotation can have an impact on and cause wrist flexion, extension, and deviation.

IV. The Wrist: (Iznaola 26-27)

- i. **Flexion:** bringing the hand/wrist down as if pushing a basketball to the floor with the wrist.
- ii. **Extension:** bringing the hand/wrist up returning from its flexed position and bringing hand up to and past the starting position.



iii.

- iv. **Radial and Ulnar Deviation** (wrist left/right): Wrist deviation is the same motions one would use to rotate the wheel of a water spigot for the backyard hose or unscrew or to screw on a jar.

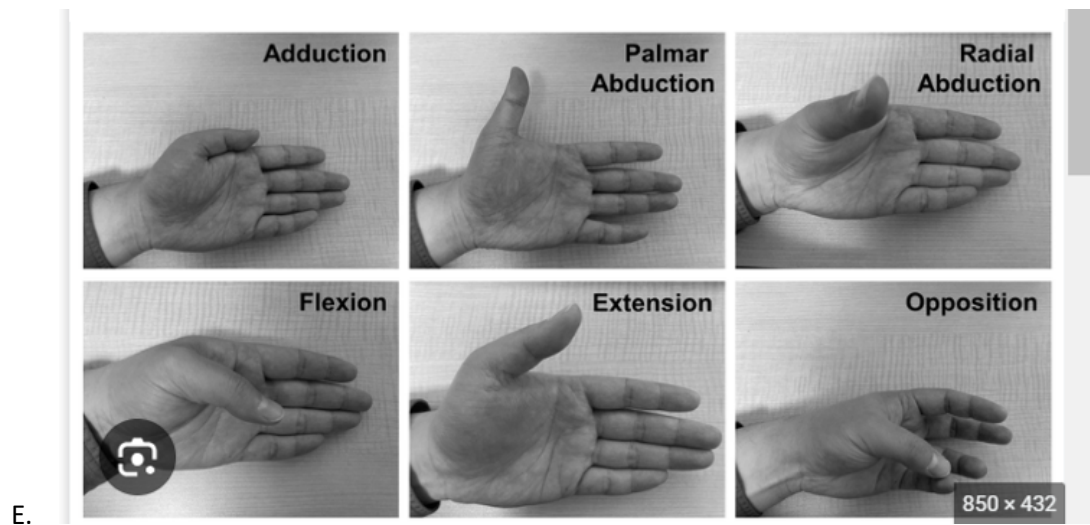


v.

- V. IMPORTANT: Wrist deviation, flexion, and extension all have dramatic effects on both hand's finger mobility.**
- i. **Wrist flexion** passively extends and abducts the fingers because it pulls on the extensor tendons of the extension muscles in the forearm that run through the carpal tunnel and extend the fingers, thus extending the fingers.
 - ii. **Wrist extension** flexes and adducts the fingers by pulling on the flexor muscle tendons that run through the carpal tunnel.
 - iii. **Ulnar wrist deviation** abducts and extends the fingers and extends the thumb.
 - iv. **Radial deviation** adducts and flexes the fingers slightly and flexes the thumb.
 - v. The ability of the fingers to execute proper plucking technique is effected when the wrist is not at rest in the center of it's range of motion (in other words, when it is tense).
 - vi. Improper wrist alignment effects the right hands ability to pluck in scales, arpeggios, and Tremelo.
 - vii. In the left hand, improper wrist alignment effects the left hands ability to depress the strings, execute slurs, and achieve finger independence.
 - viii. The act of flexing the wrist can be used to further abduct the fingers in left hand extensions. The wrist can also be extended to aid the adduction of the fingers in left hand contractions/squeezes (RENE: think of the Open the Jar motion for plucking chords).
 - ix. The wrist should be used to extend the fingers in the left hand as a last resort as it significantly limits the fingers ability to function.

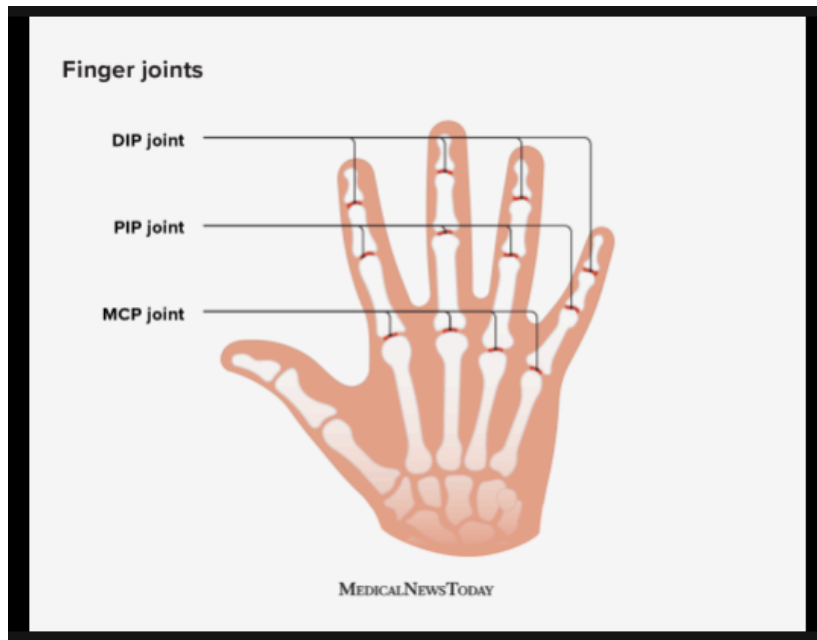
VI. Carpal-Metacarpal Joint (Thumb Joints and its connection to wrist/forearm): (Iznaola 32-32)

- i. This is the Joint at the base of the thumb between wrist/forearm and thumb.
- ii. The thumb's Carpal-metacarpal (wrist) joint is the primary mover of the thumb. It can move the thumb:
 - A. **Flexion:** Towards the index finger.
 - B. **Extension:** Away from the index finger.
 - C. **Palmer Adduction:** Towards the palm.
 - D. **Palmer Abduction:** Away from the palm.

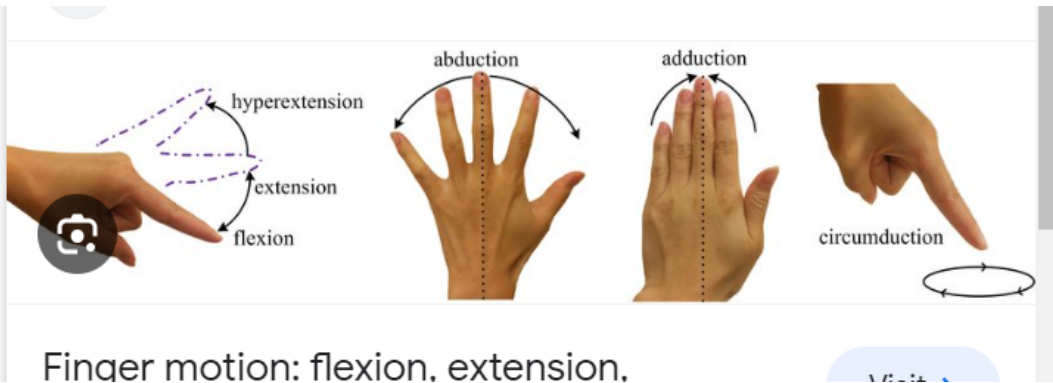


VII. Finger motions:

- i. **Flexion:** pulls finger towards palms and brings fingers together (adduction).
- ii. **Extension:** pulls fingers out from the palm to setup a high five or waving goodbye. Also abducts the fingers.
- iii. **Abduction:** spreads fingers apart.
- iv. **Adduction:** brings fingers together.
- v. **Circumduction:** rotation of whole finger. Circumduction looks like its at the knuckle joint. This is similar to when you shake a finger at someone like "no no no"
- vi. Please note that flexion and extension apply to all the finger's joints:

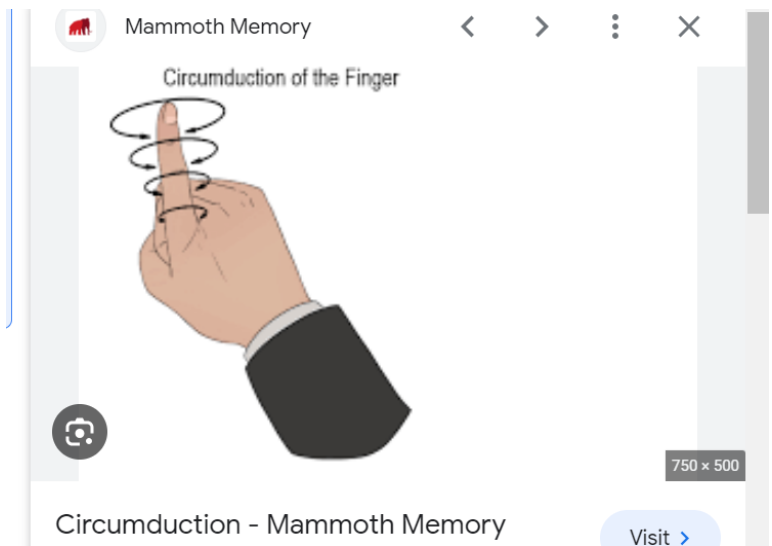


A.



vii.

Finger motion: flexion, extension.



viii.

Circumduction - Mammoth Memory