

# ME/BIOE 481. LAB 2: Tendon Transfer

Updated: March 5, 2021

Name and netID: \_\_\_\_\_

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## 1 Critical info

- Due date: March 11, 2021 - 11:59PM (US Central standard time)
- You may work in pairs. Include your names at the top of your lab report. You and your partner will receive the same grade. Only one person needs to turn in the assignment to pass. It can be neatly handwritten or typed (typed is preferred for text). Let the pride in your work show in the quality/legibility of the assignment you turn in. Illegible writing or poor scans/uploads will not be graded.
- Show all work!

## 2 Report deliverables

1. Which motion is expressed in positive angles: wrist flexion or wrist extension?
2. Which motion is expressed in positive angles: radial deviation or ulnar deviation?
3. What are the functions of the Extensor Carpi Ulnaris (ECU) muscle? Circle all that apply.
  - (a) wrist extension
  - (b) wrist flexion
  - (c) radial deviation
  - (d) ulnar deviation
  - (e) hip extension
4. What are the functions of the Extensor Carpi Radialis Brevis (ECRB)? Circle all that apply.
  - (a) wrist extension
  - (b) wrist flexion
  - (c) radial deviation
  - (d) ulnar deviation
  - (e) hip extension
5. In the plots, given how the model defines the wrist flexion degree of freedom, is wrist extension moment denoted by positive or negative values?
6. What happens to the maximum moment of the wrist extensors if the ECU muscle is transferred to the ECRB? Hint: Remember, one of the goals of the surgery is to increase wrist extension strength.
7. In these plots, is the sign of an ulnar deviation moment positive or negative?
8. What happens to the maximum moment of the ulnar deviators if the ECU muscle is transferred to the ECRB location?
9. One goal of this tendon transfer surgery is to decrease excessive ulnar deviation. Has your simulated surgery achieved this goal? Why or why not?