Lab Exercise

Analyze the given upper body activities by viewing them on video tape. You may or may not be familiar with some of these activities but you should be quite familiar with the muscles that make these movements possible. If in doubt, try some of these activities yourself.

1. The Bear Crawl
2. Hand-stand push-up

Start each analysis by breaking the movements down into phases. Within each phase identify the “major” joint movements of the body that apply to each motion: for 1) the Bear Crawl analyze the shoulder (glenohumeral), elbow (radioulnar), hip, and knee and for 2) the hand-stand push analyze the shoulder girdle (scapula), shoulder (glenohumeral), elbow. Next identify the agonist muscle (choose one primary) for each of these movements and its antagonist counterpart (choose one primary) and determine which one is predominantly working at the time. Use the same information to assign concentric or eccentric muscle contractions for each muscle described. Refer to the relationships below to help you through this process:

Agonist ↔ Concentric contractions ↔ Accelerations (speeding-up)

Antagonist ↔ Eccentric contractions ↔ Decelerations (slowing-down)

In addition to your analysis, answer the following questions:

1. For each exercise choose which muscle(s) you feel receives the most benefit, that is, if you were to sell this exercise to somebody how would you do it?
2. For each exercise describe a joint injury that one might suffer during this exercise and explain when (which phase) and how it might occur.
3. Assuming that eccentric contractions create more muscle soreness than concentric contractions explain why one’s quadriceps muscles might become more sore doing knee flexions during squats versus knee flexions during cycling?

Compile your findings into a narrative paper. This paper is due next week.

Use the remainder of the lab period to review models for your upcoming exams.