Muscle Performance

Muscle Characteristics

- Irritability
  - ability to respond to a stimulus
- Conductivity
  - propagate a stimulus
- Adaptability
  - ability to change structure
- Contractility
  - ability to modify length (shorten)

Muscle Contraction

- Isometric: No change in muscle length
- Isotonic: Change in length (same external weight)
  - Concentric: muscle length shortens during contraction
  - Eccentric: muscle length increases during contraction
- Isokinetic: Angular speed is constant during contraction
  - Concentric
  - Eccentric
Role of Muscle (p170)

- Agonist: (prime mover) functions to cause a movement
- Antagonist: functions to resist movement
- Stabilizer: functions to fixate an area so another movement can occur
- Synergist: assist another muscle
- Neutralizer: functions to prevent undesired movement

Length-Tension Relationship of Muscle Contraction

- The amount of force generated by a muscle is dependent on length of muscle.
- Muscles that cross two joints
  - concurrent movements at both joints not maximized

Force-Velocity Relationship of Muscle Contraction

- The amount of force generated by muscle is dependent on the velocity of contraction.
Summary

- Muscle characteristics
- Types of contraction
  - isotonic, isometric, isokinetic, concentric, eccentric
- Role of muscle
  - agonist, antagonist, synergist, stabilizer, neutralizer
- Muscle force dependent on
  - length-tension relationship
  - force-velocity relationship