222 Foundations Notes For The Final Exam

Movement analysis is important to:

- Understand what muscles and joints are stressed/used in a particular movement.
- Gives direction for exercise prescription – Understand what muscles are activated in a particular task, therefore target these muscles to improve performance.
- Can inform about injury prevention process – In a sporting movement it's important to understand the agonist and antagonist muscles. The antagonist will be used as declaration of limbs in movements like throwing, kicking etc. Strengthen the antagonist will help prevent injury occurring.
- Eg throwing movement is internal rotation (important for performance) – Need to balance with training the external rotators (need to be equally as strong to prevent injury occurring)

WHEN DOING A MOVEMENT ANALYSIS ALWAYS START WITH THE CONCENTRIC PORTION FIRST

This is because the muscles used in the concentric portion are the same as the eccentric portion.

The eccentric are undergoing force whilst lengthening.

Movement analysis consideration - Limbs/muscles which are accelerating = Concentric

Muscles deaccelerating = eccentric.

Movement analysis consideration 3 - **THE SAME MUSCLE THAT LIFT A LOAD ARE ALSO THE MUSCLES THAT LOWER A LOAD –** They are used to control the load in the lowering phase.

Movement analysis consideration 4 – Just because a muscle is capable of a certain action is no guarantee that it will be active when that movement is observed – Muscles which cross two joints.

Movement analysis consideration 5 – Just because no movement is observed does not mean that there is no muscle activation (Isometric contraction to stabilize)

Common errors in movement analysis

Text book anatomy approach – Using this approach to determine which muscles are being recruited can be misleading. Text book doesn't consider a muscle can be active whilst eccentrically lengthening.

Fail to consider 2 joint muscles – Does a two-joint muscle have favorable actions at both of the joints that it crosses?