

# Exercise Prescription & Programming

Exercises, Movements, Muscles, and Variations

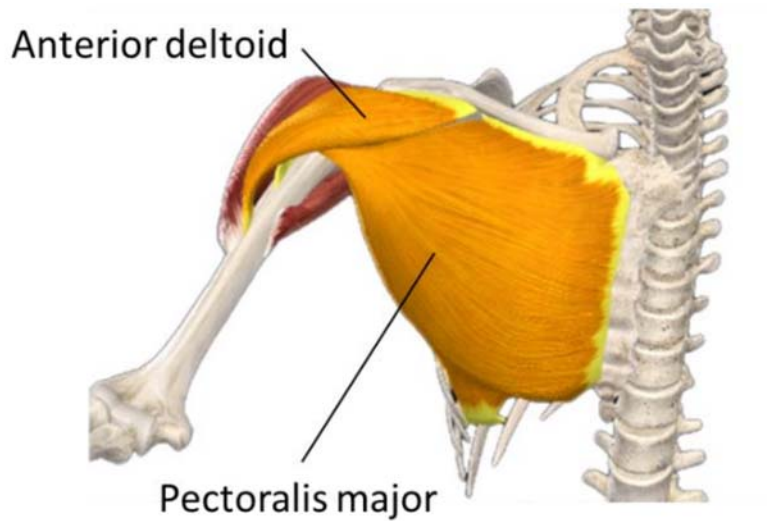
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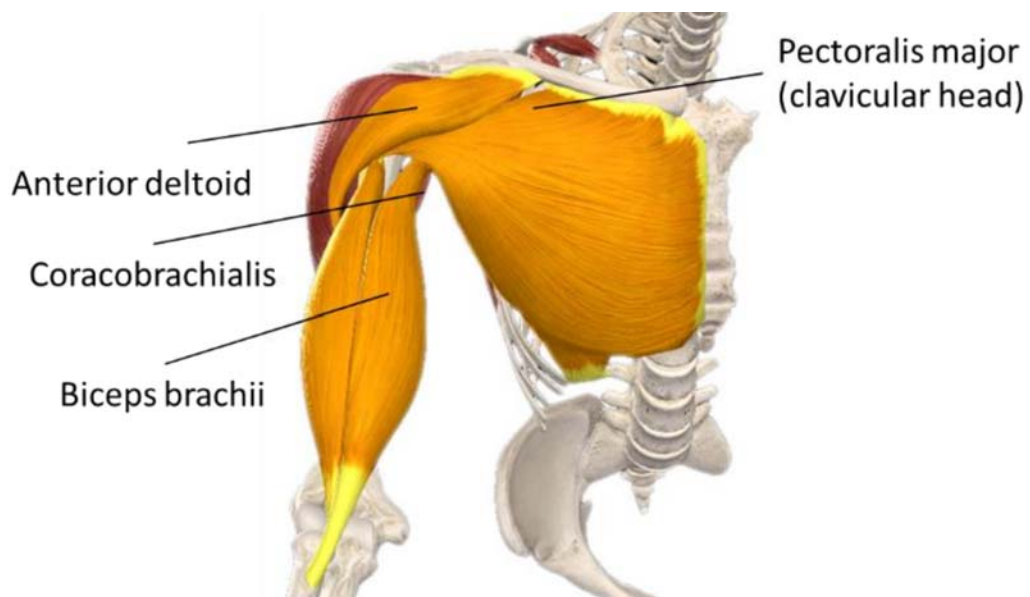
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# Upper Limb

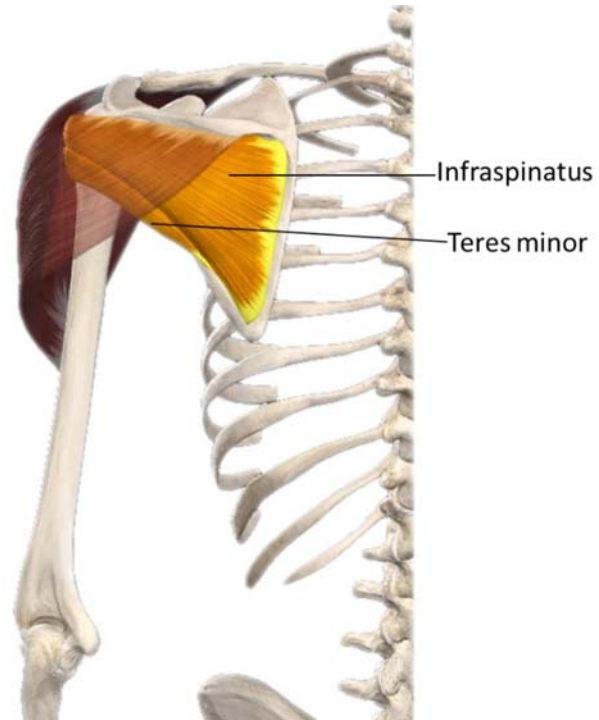
Glenohumeral horizontal flexion	Concentric/eccentric	Pectoralis major Anterior deltoid
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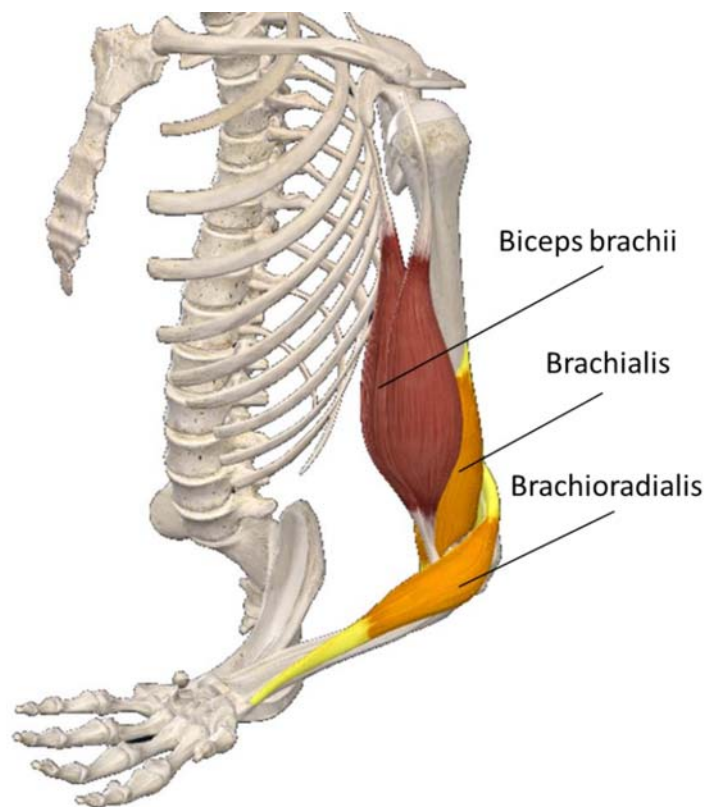
Glenohumeral flexion	Concentric/eccentric	Pectoralis major (clavicular head) Anterior deltoid Biceps brachii Coracobrachialis
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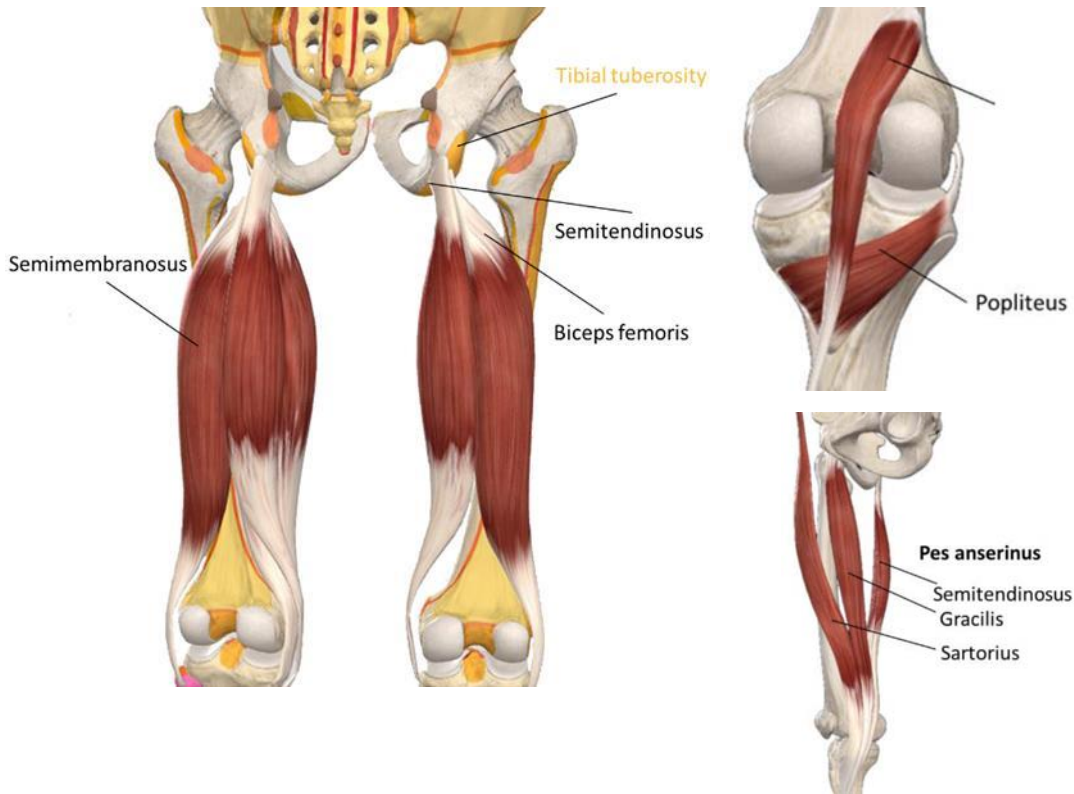
Glenohumeral external rotation	Concentric/eccentric	Teres Minor Infraspinatus
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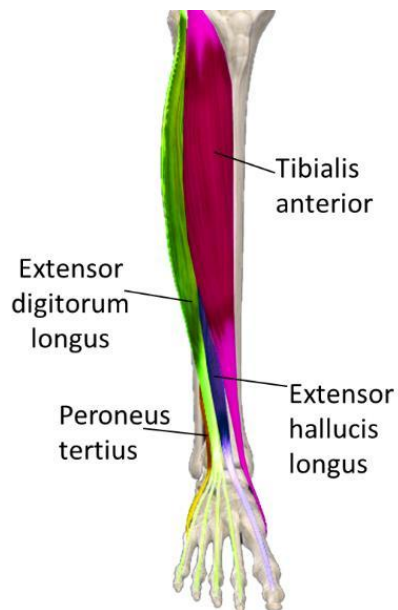
Elbow flexion	Concentric/eccentric	Biceps brachii Brachialis Brachioradialis
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Knee flexion	Concentric/eccentric	Biceps femoris Semitendinosus Semimembranosus Gracilis Sartorius Gastrocnemius Popliteus
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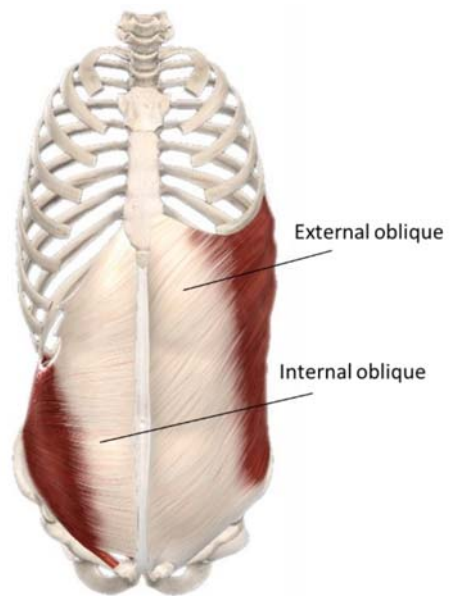
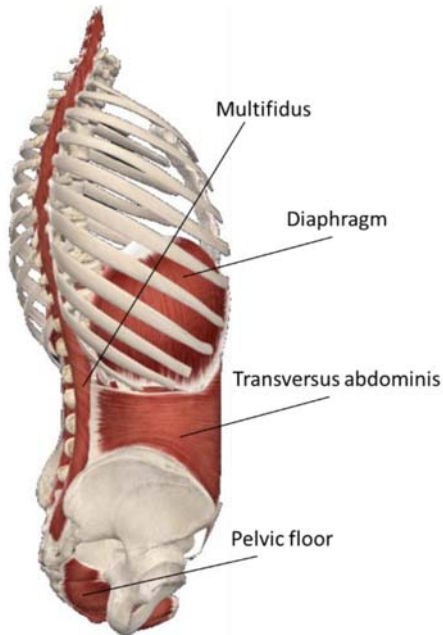


Dorsiflexion	Concentric/eccentric	Tibialis anterior Peroneus tertius Extensor hallucis longus Extensor digitorum longus
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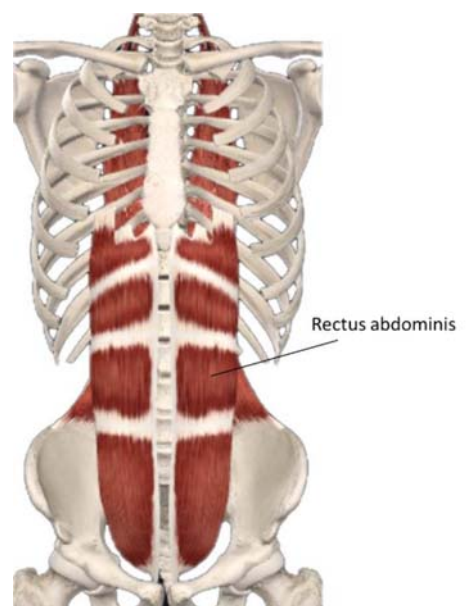
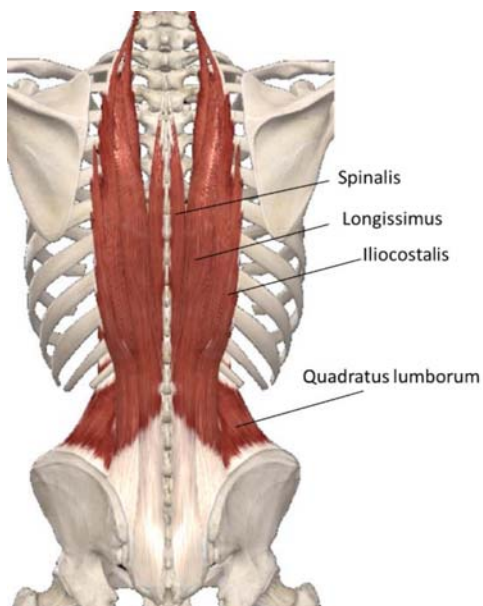


# Core

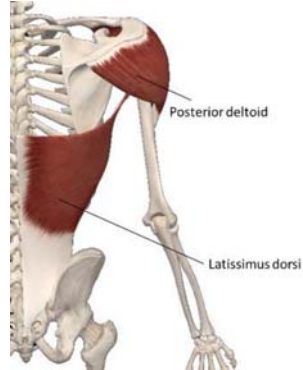

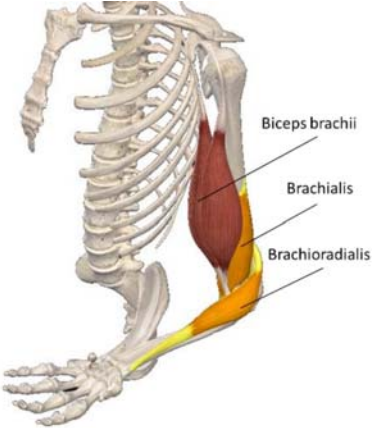
Lumbar spine stabilisation (deep)	Isometric	Diaphragm Pelvic floor Transversus abdominis Internal oblique External oblique Multifidus
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Lumbar spine stabilisation (superficial)	Isometric	Rectus abdominis Quadratus lumborum <b>Erector spinae</b> Iliocostalis Longissimus Spinalis
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## Seated Row

Movement	Action	Muscles	Muscles
Glenohumeral horizontal extension	Concentric/eccentric	Posterior deltoid Latissimus dorsi	
Glenohumeral extension	Concentric/eccentric	Posterior deltoid Triceps brachii (long head) Pectoralis major Latissimus dorsi Teres major	
Elbow flexion	Concentric/eccentric	Biceps brachii Brachialis Brachioradialis	



# Variations

## Bench Press Variations

- Hand position
  - Wide grip: Increases GHJ horizontal flexion, decreases elbow extension – targets pec major
  - Narrow grip: Increases GHJ flexion, targets clavicular head of pec major
  - Narrow grip with incline: Increases GHJ – targets clavicular head of pec major – increases elbow extension – targets triceps brachii
  - Single arm: increases GHJ, scapular, and **core** stabilisation
- Bench angle
  - Incline: increases GHJ flexion, decrease GHJ horizontal flexion – targets clavicular head of pec major and anterior deltoid
  - Decline: targets sternocostal head of pec major and anterior deltoid
- Type of weight
  - Dumbbell: targets all stabilising muscles, greater ROM (bar doesn't get in the way)
  - Smith machine: no stabilising muscles
  - Body weight: push up; closed chain exercise (hands attached to immovable object), less shear forces
  - Chains: resistance increases as bar is lifted; emphasises muscle in mid-end ROM
  - Power: bench throws, for power athletes
  - Fit ball: increase core stabilisation, less weight can be lifted
- Feet position
  - Feet on bench: less force on lumbar spine (better for beginners)
  - Feet on floor: hyperextension, but allows more weight to be lifted

## Shoulder Press Variations

- Hand position
  - Narrow grip: more GHJ flexion, less GHJ abduction
  - Wide grip: more GHJ abduction, less GHJ flexion
- Type of weight
  - Machine: less GHJ stabilisation, allowing main muscle to produce more force
  - Free weights: more GHJ stabilisation
  - Dumbbell: more stabilisers
  - Single arm: more stabilisers
- Seating standing

## Seated Row Variations

- Hand position
  - Narrow grip: more GHJ extension, less GHJ horizontal extension
  - Wide grip: more GHJ horizontal extension, less GHJ extension → targets posterior deltoid