

Introduction to the Muscular System

Topics

- ▣ The muscular system of the upper limb
 - leg, lower leg, foot
 - neck
 - upper arm & forearm & hand
 - ▣ O, I, A, INN, BS
 - ▣ palpation*
- ▣ gross anatomy of the plexus'
 - pathways & nerves

Mark Breakdown

- ▣ 3 tests – 30%
- ▣ Pop quizzes - 5%
- ▣ 3 Quizzes – 15%
- ▣ Assignments – 10%
 - complete set of flashcards due after each major section
 - complete & accurate set worth 10%
- ▣ Final written exam - 25%
- ▣ Final bell ringer - 15%

Remember!

- ▣ As a massage therapist understanding your muscles is going to be a major key to understanding other subjects
- ▣ You cannot properly, treat, assess, rehab (stretch or strengthen) or palpate without having solid understanding of where each muscle is and what it does
- ▣ Anatomy requires your attention everyday

Flashcards

- ▣ What am I expecting on your Flashcards?
 - Picture of the muscle
 - ▣ I will provide
 - Muscle name
 - ▣ correct spelling!
 - Origin
 - Insertion
 - Action
 - Nerve
 - Blood supply

Terms & Definitions

Definitions

- ▣ muscles are described in terms of attachments to two bones as well as the action on the joint(s) it crosses
- ▣ proximal attachment
 - aka: Origin
 - attachment on the bone that does not move when the muscle contracts
 - Generally a wide attachment

Definitions

- ▣ distal attachment
 - aka: insertion
 - attachment on the bone that moves when the muscle contracts
 - generally by a narrow tendon
- ▣ action
 - muscles contract & shorten to produce movement
 - name the joint & the action
 - ex: shoulder abduction

Definitions

- Contractions
 - Isotonic
 - change in muscle length & visible movement around a joint

 - Eccentric
 - controlled muscle lengthening against resistance
 - example?

 - Concentric
 - muscle contraction with fibre shortening
 - example?
 - Isometric
 - tension with no change in muscle length
 - example?

Definitions

- Prime mover
 - Aka: agonist
 - the primary muscle creating movement
 - Example?
- Antagonist
 - muscle which opposes the function of the prime mover
 - opposing or reciprocal muscle
 - inactive while the agonist is contracting so as not to impede joint motion
 - Example?

What happens when you contract the agonist & antagonist at the same time?

Why do we need to develop strength in opposition?

Definitions

- Synergist
 - aka: neutralizer
 - eliminates movement you don't want that would be produced by the prime mover
 - example? - wrist & fingers

- Fixators
 - muscles that stabilize a body part on which which the other muscles are attached to facilitate motion
 - example? - push-up

Muscle Types

- ▣ Tonic muscle
 - designed to work to maintain posture and tend to work most of the time
- ▣ Phasic muscle
 - usually requires a conscious decision to contract and is more for movement and not much endurance

Locating Muscles

Location

- the name usually tells something about the muscle shape, action, location or derived latin roots

Muscle names:

- Supraspinatus
- Subscapularis
- Tibialis anterior

Shape

- the name usually tells something about the muscle shape, action, location or derived latin roots

Muscle names:

- Rhomboid
- Trapezius
- Serratus
- Teres
- Rectus

Action

- ▣ the name usually tells something about the muscle shape, action, location or derived latin roots

Muscle names:

- ▣ Pronator teres
- ▣ Flexor digitorum profundus
- ▣ Extensor digitorum

Divisions

- ▣ the name usually tells something about the muscle shape, action, location or derived latin roots

Muscle names:

- ▣ Biceps
- ▣ Triceps
- ▣ Quadriceps

Length or Size

- the name usually tells something about the muscle shape, action, location or derived latin roots

Muscle names:

- Longus
- Brevis
- Magnus
- Minimus
- Major/Minor

Combinations

- the name usually tells something about the muscle shape, action, location or derived latin roots

Muscle names:

- Rectus abdominis
- Extensor digiti minimi
- Sternocleidomastoid
- Biceps femoris

Learning about Muscles

General Description

- superficial or deep
- appearance/shape
- general location & function
- muscle fiber direction

- Origin & insertion
- Actions
- Nerves & Blood supply

Circular Muscle

A circular muscle, or sphincter

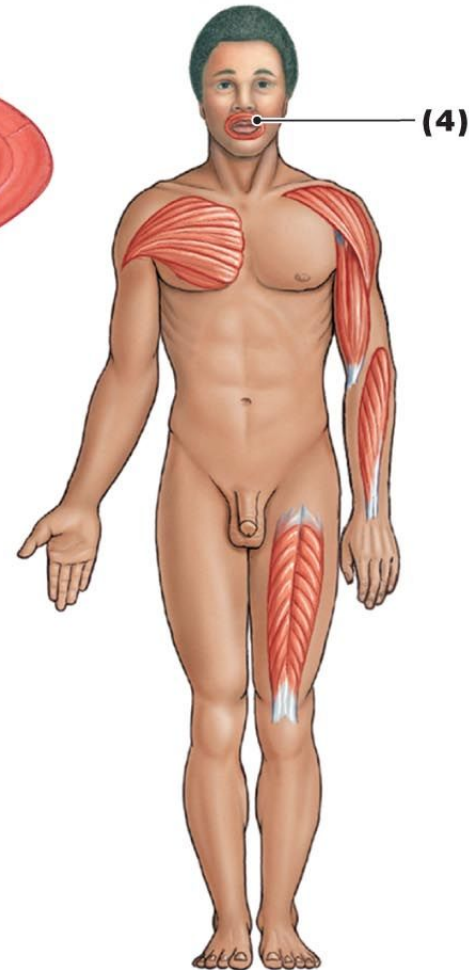


4

Contracted



Relaxed



(4)

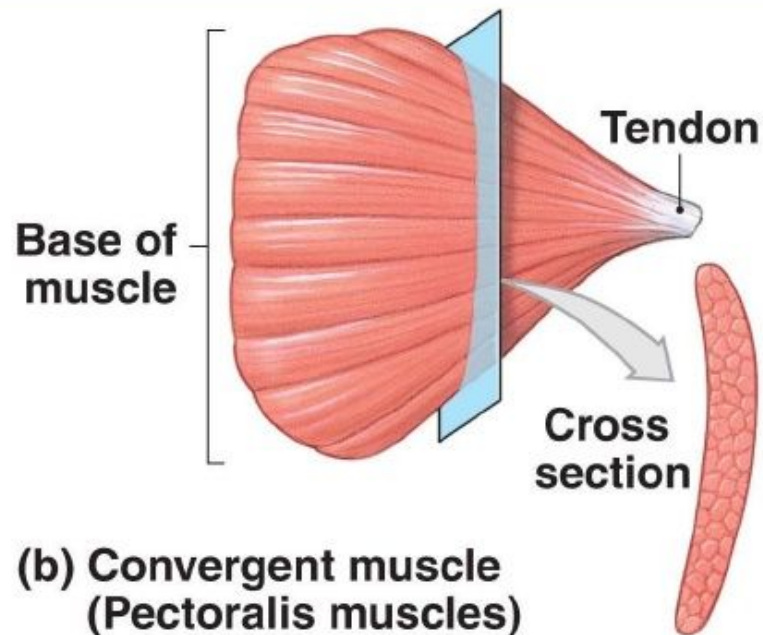
Pennate muscles

Unipennate **Bipennate** **Multipennate**



Convergent muscles

Fascicle Arrangement



**(b) Convergent muscle
(Pectoralis muscles)**

Figure 11–1b Muscle Types Based on Pattern of Fascicle Organization.

Parallel Muscles



Rectus abdominis

Fusiform

