



Fascia

Layers of tissue

- Skin
- Superficial fascia
- Artery, Vein ,Nerve
- Deep fascia
- Muscles
- Bones
- joints

Types of Fascia

- Skin.
- Fascia.
 - Superficial Fascia
 - Deep Fascia.
 - Visceral Fascia

Function of Fascia

- Fascia is specialized connective tissue (CT) that surrounds every muscle, nerve, bone, blood vessel, and organ at cellular levels.
- Fascia serves as a lubricant to allow motion and provides form and structure for the body.

The functions of fascia include:

- Supporting vessels and nerves
- Allowing muscles to move over one another
- Providing stability and contour as well as fluidity and lubrication
- Participating in reflex loops from Paccinian corpuscles afferent fibers
- Contracting and relaxing to respond to deformation

There are layers of fascia:

- Superficial – thin elastic fibers under the surface of the skin
- Deep – to separate muscles and organs for contour of the body
- The deepest layer is the Dura Mater which surrounds the brain.

Epidermis

Anatomy of the Epidermis

Dead cells flaking off
at the skin surface

Stratum corneum

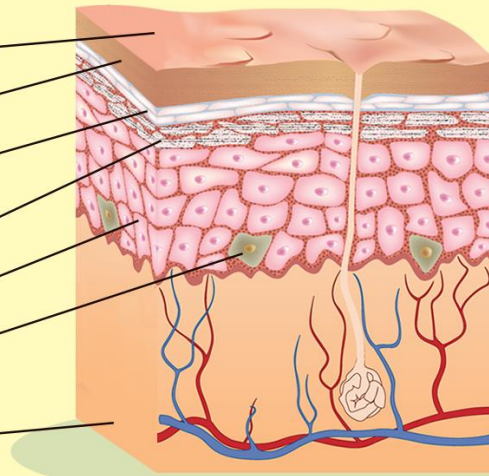
Stratum lucidum

Stratum granulosum

Stratum spinosum

Stratum basale

Dermis



1. Stratum basale

- Single layer of columnar cells

2. Stratum spinosum

- Several layers of polyhedral cells, spine like process, tonofilament

3. Stratum granulosum

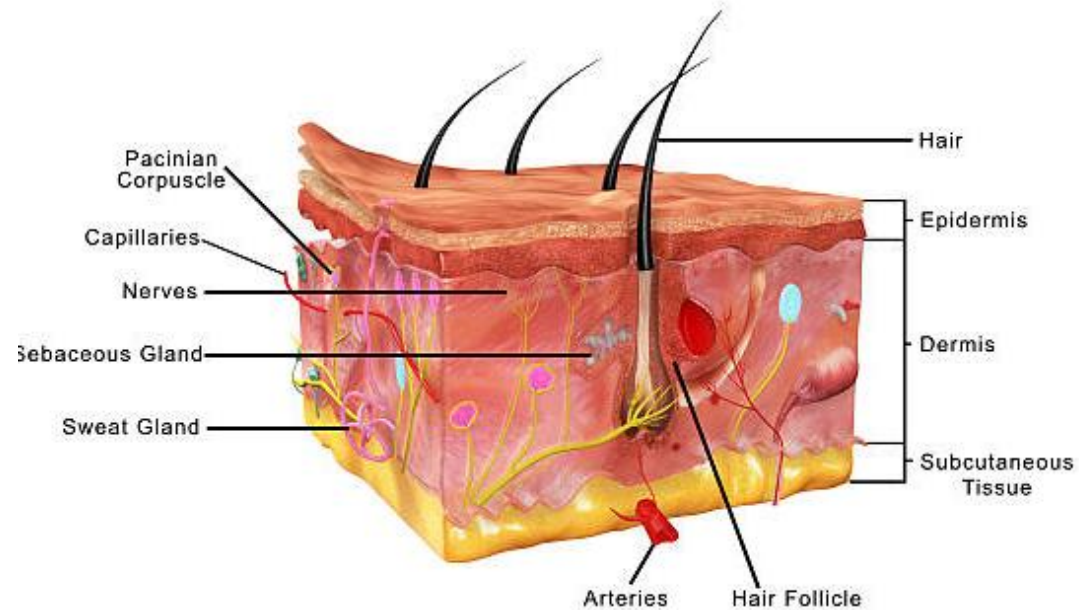
- Keratohyline granules

4. Stratum lucidum

- Homogeneous keratin, fusiform cells

5. Stratum corneum-non nucleated keratinized dead cells

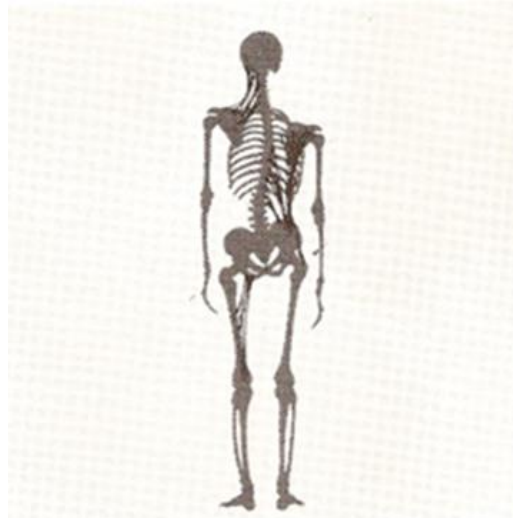
Skin Anatomy



Dermis

- **Papillary layer**
 - Tactile papilla
 - Vascular papilla
 - Collagen fibre
 - Reticular layer
- **Collagen fibre**
 - Sweat glands
 - Sebaceous glands
 - Hairs

Fascia Restrictions



Fascial restrictions create malalignment of the structure

- Fascia tightens after trauma occurs to it.
 - Commonly during one single event or micro-traumas overtime.
- The body's reaction to trauma:
 - Collagen becomes dense and fibrosis.
 - Elastin loses its resiliency.
 - Ground substance solidities.
- Fascial restrictions create abnormal strain patterns resulting in compression of joints and musculature producing pain and imbalances.
- These restrictions can create up to 2,000 pounds per a square inch of pressure on pain sensitive structures of the nervous system.

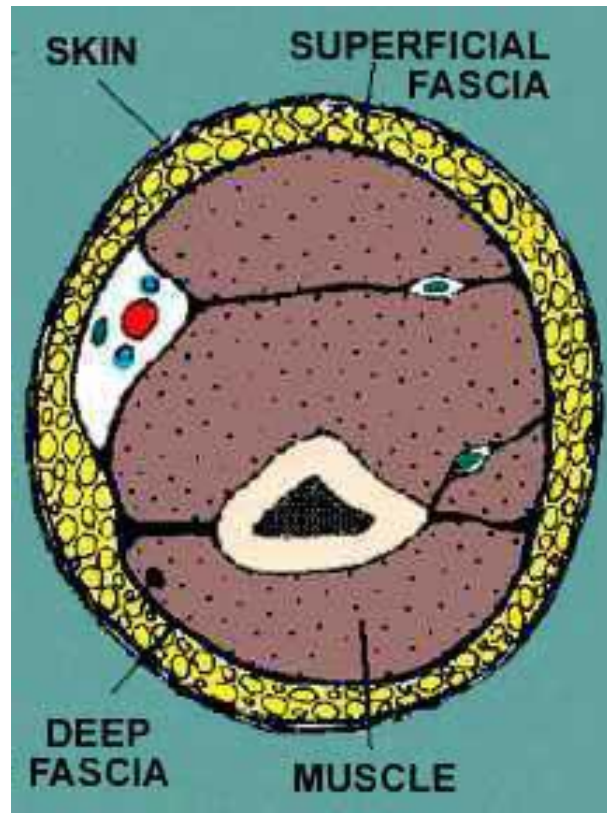
Superficial fascia

Superficial fascia:

- Loose, mixture of adipose and loose areolar tissues.
- It unites the skin to the underlying structures.
- It is dense in some places as scalp, palm of hand and sole of foot and contains collagen bundles
- It is thin in the eyelids, auricle, scrotum, penis and clitoris (devoid of adipose tissue).

Functions:

- Facilitates movement of skin over underlying structures.
- Passage for cutaneous vessels, nerves...
- Protects the body against heat loss.

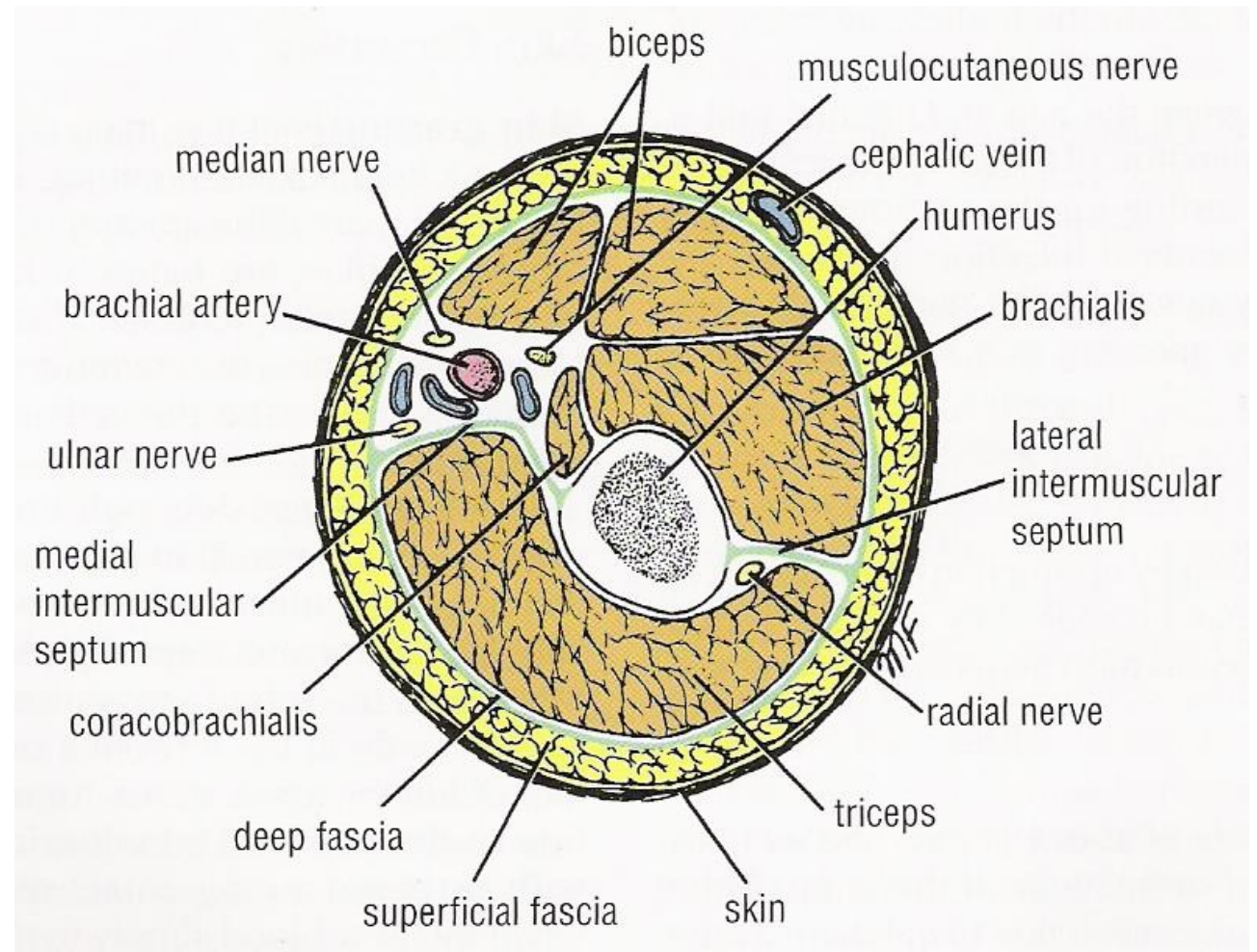


Location of Fascia

- Site with Very less fat
 - Eyelids
 - Pinna
 - Penis
- Site with more fat
 - Breast
 - Abdomen
 - Gluteal region

Deep fascia

- It is more dense than superficial fascia
- Collagenous bundles are more compact and more regularly arranged
- It is usually present in the form of membranes



Examples of deep fascia

A. Investing fascia

- Covers the surfaces of muscles
- In the neck: it forms well-defined layers, bounds fascial spaces so limits spread of infection or determine the path of infection
- In the abdomen: it is thin
- In the limbs: forms a definite sheath around the muscles

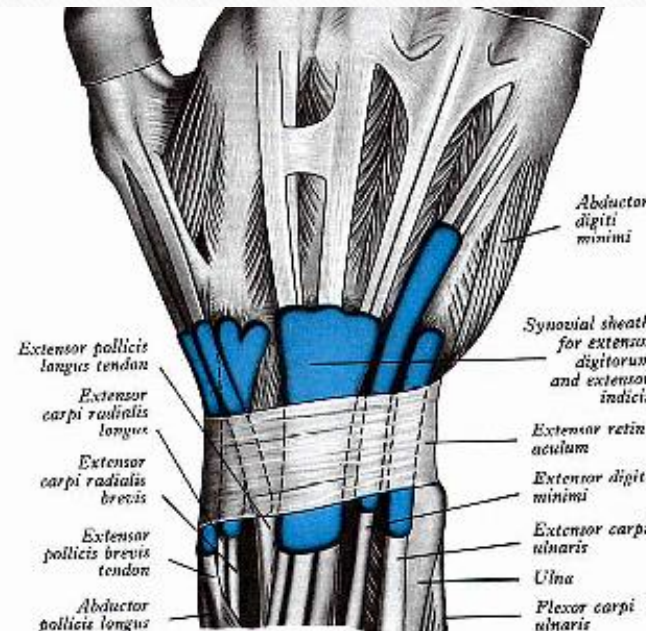
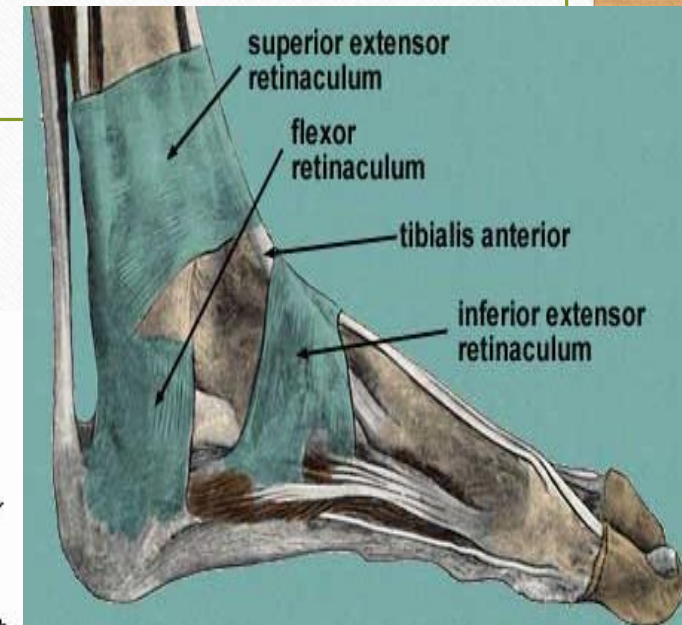
B. Inter muscular septa

- lie between muscles dividing the limb into compartments

Examples of deep fascia

C. Retinacula

- Localized thickening of deep fascia around joints, hold the tendons in place, prevent bowstringing of tendon



Examples of deep fascia

- **Fibrous sheath**
 - *eg. Carotid sheath Axillary sheath*
- **Fibrous capsule**
 - eg Parotid capsule*
- **Ligaments**

Absence of deep fascia

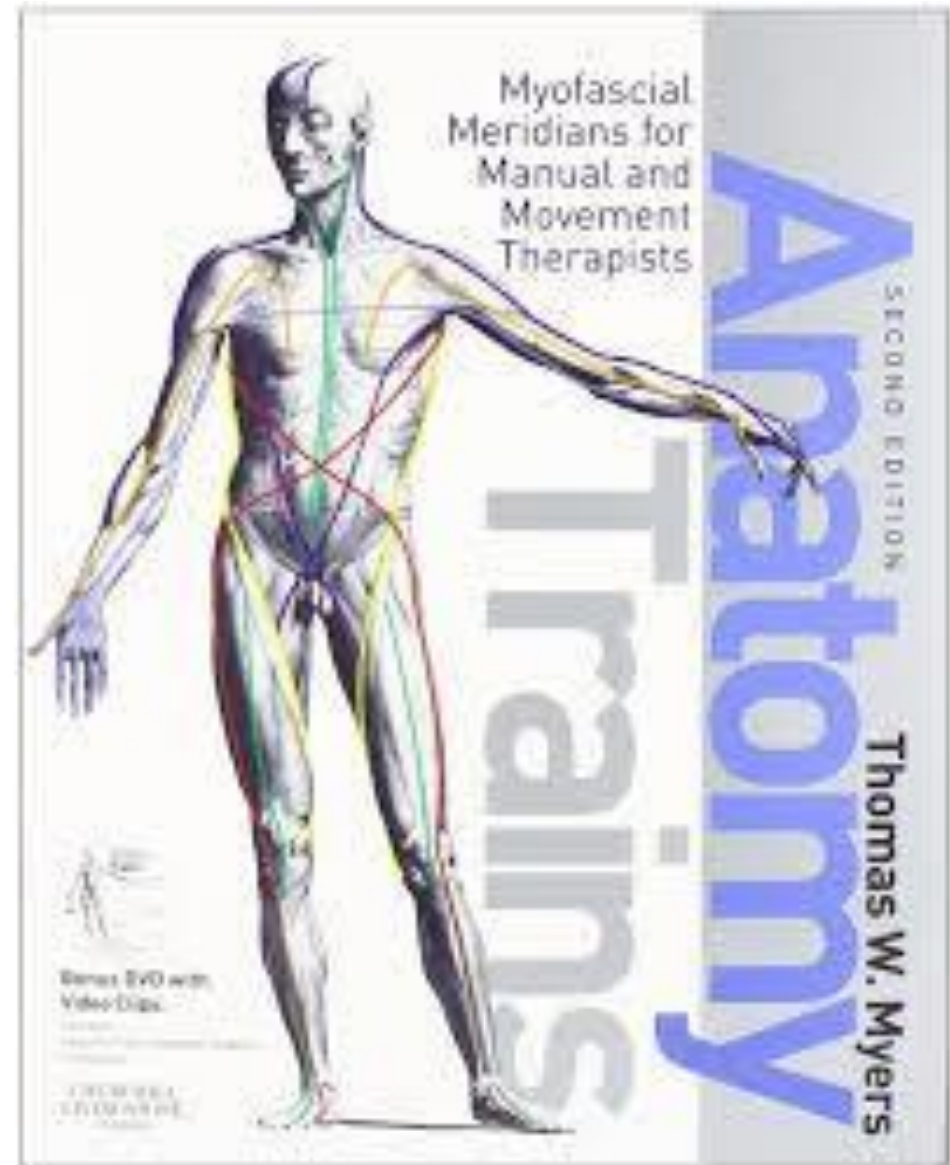
- Face
- Breast
- Penis
- Anterior abdominal wall

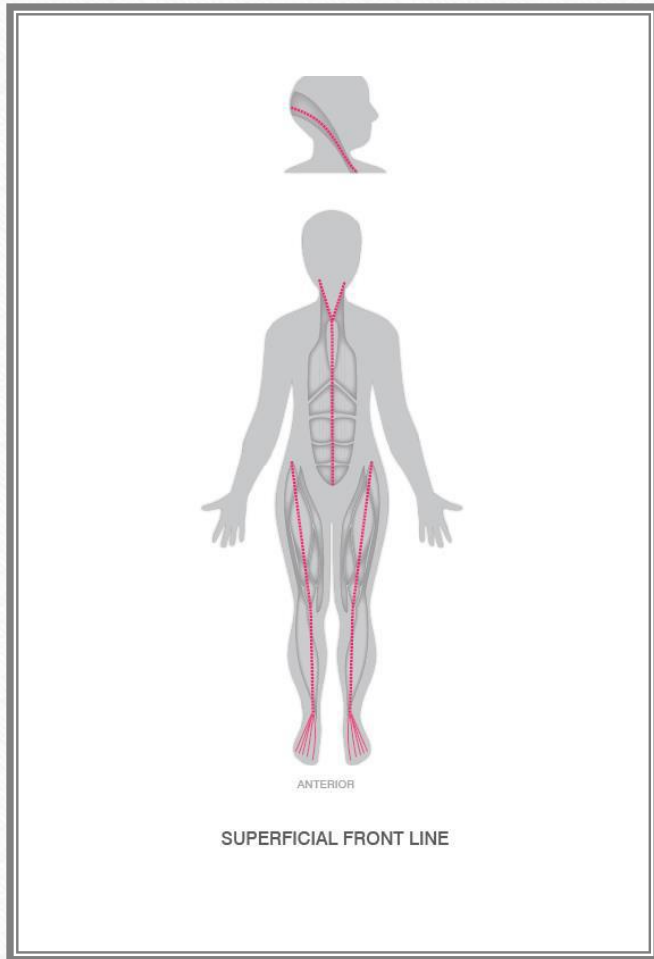
What are the Myofascial Lines?

Aka myofascial meridians

**Thomas Myers
describes 12 Myofascial
lines:**

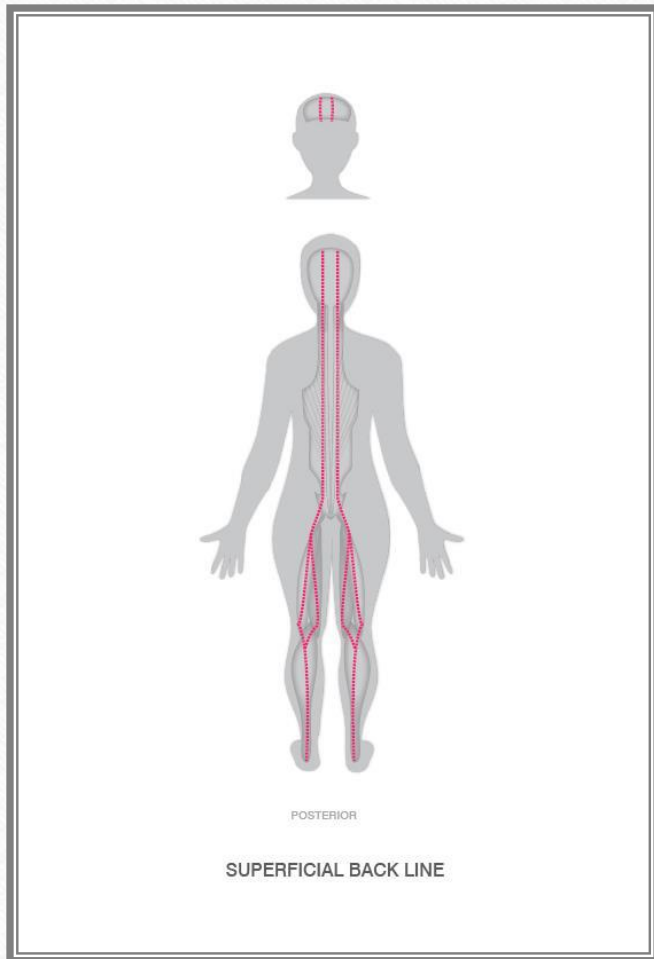
- Superficial Front Line
- Superficial Back Line
- Lateral Line
- Functional Lines
- Spiral Line
- Deep Front Line
- Arm Lines





The Superficial Front Line

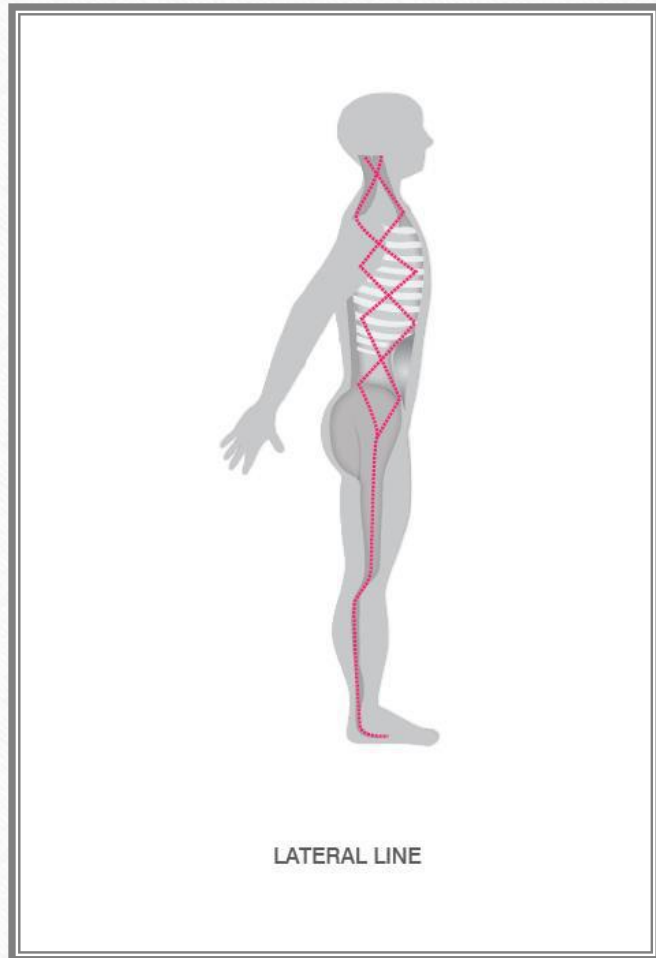
- Extensor Digitorum Longus and Brevis
- Tibialis Anterior
- Patellar Tendon
- Quadriceps (including the Rectus Femoris)
- Rectus Abdominis
- Sternalis
- Sternocleidomastoid



The Superficial Back Line

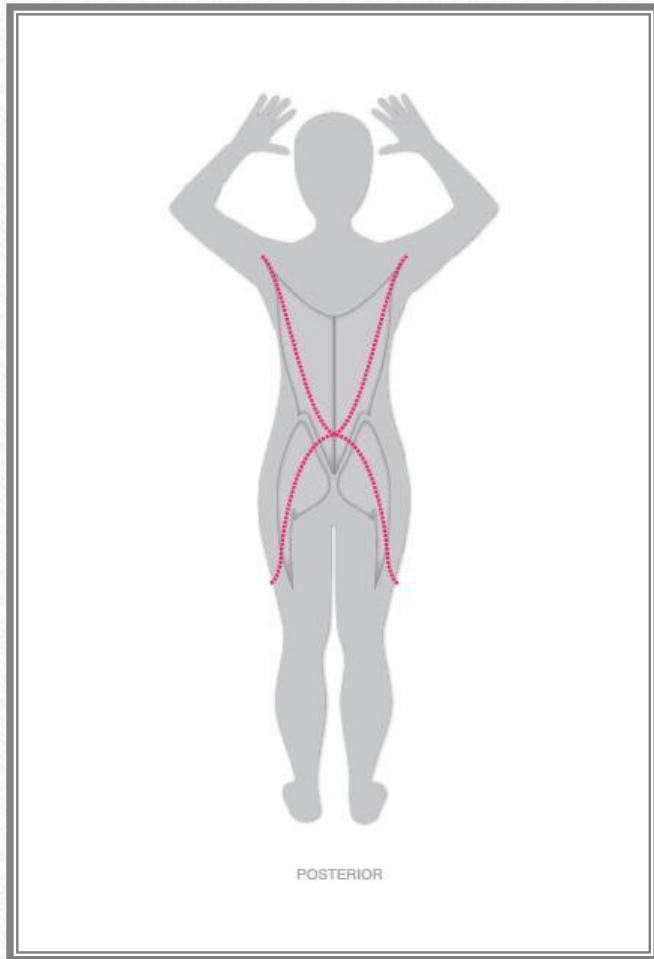
- Flexor Digitorum Brevis
- Gastrocnemius
- Hamstrings
- Sacrotuberous Ligament
- Erector Spinae
- Scalp Fascia

The Lateral Lines



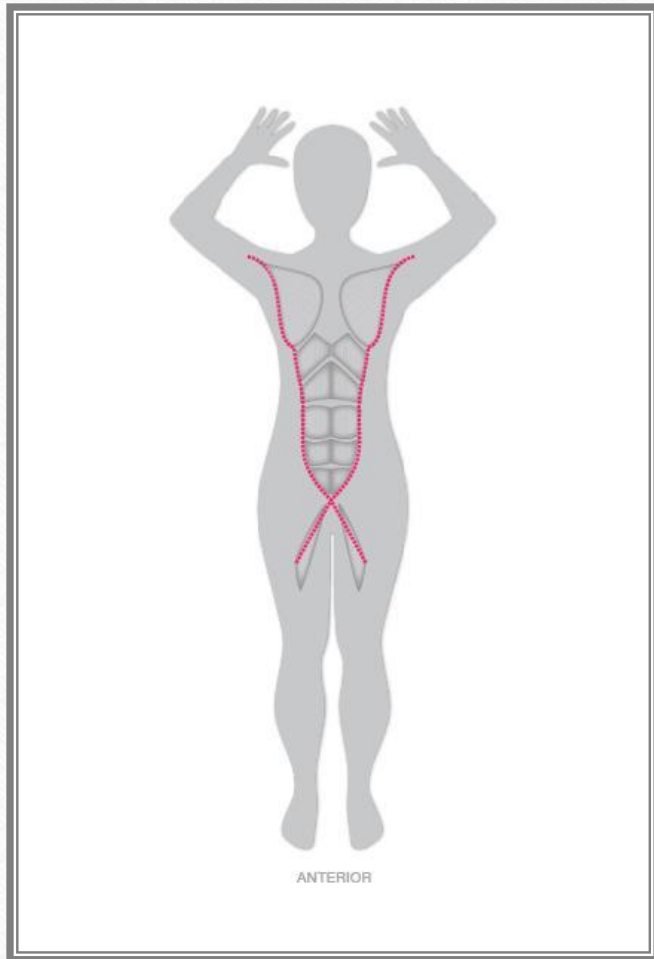
- Peroneus Longus and Brevis
- Anterior Ligament of the Fibular Head
- It-Band, TFL, GluteMax.
- Lateral Abdominal
- External and Internal intercostals
- Splenius Capitis and SCM

Back Functional Line



- Latissimus Dorsi
- Thoracolumbar Fascia
- Gluteus Maximus
- Vastus Lateralis
- Subpatellar Tendon

Front Functional Line



- Lower Pectoralis Major
- Lateral Rectus Abdominis and Abdominal Aponeurosis
- Adductor Longus

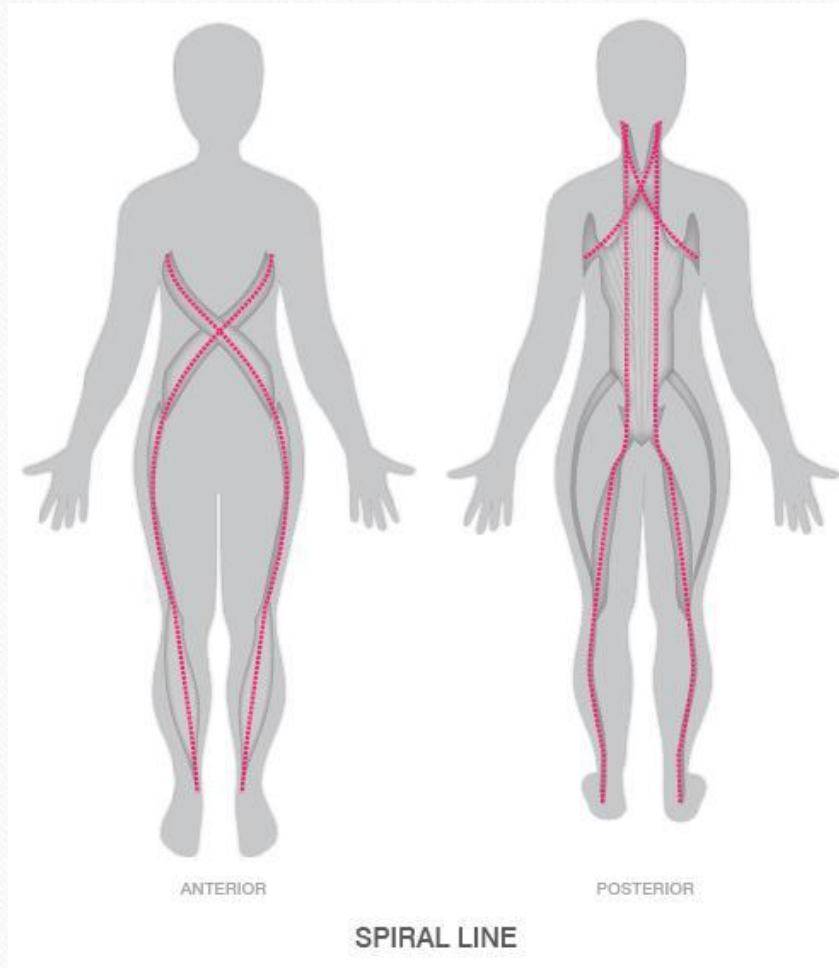
Spiral Line

Anterior View

- Splenius capitus
- Rhomboids
- Serratus anterior
- External oblique
- Rectus sheath
- Internal oblique
- Tensor fascia latae
- ITB
- Tibialis anterior

Posterior View

- Peroneus longus
- Biceps femoris S/L head
- Sacrotuberous ligament
- Spinae erectors



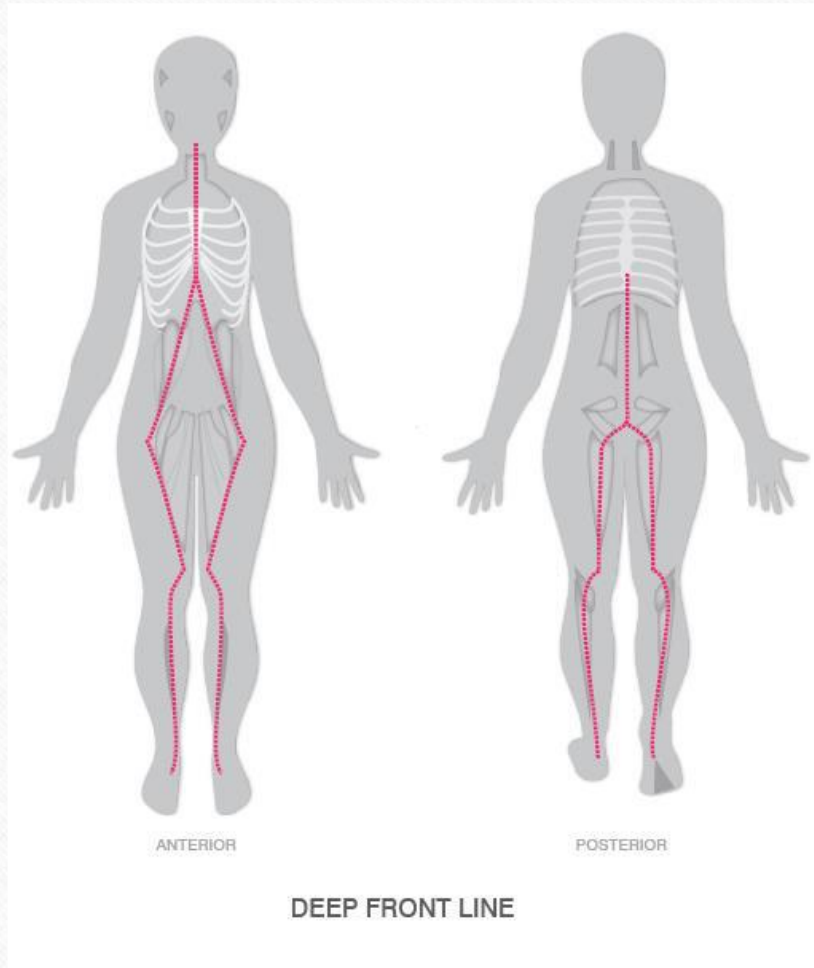
Deep Front Line

Lowest Common

- Tibialis posterior
- Long toe flexors
- Posterior inter-muscular septum
- Popliteus fascia

Lower Posterior

- Posterior intermuscular septum
- Adductor magnus and minimus
- Pelvic floor fascia, levator ani, obturator internus fascia



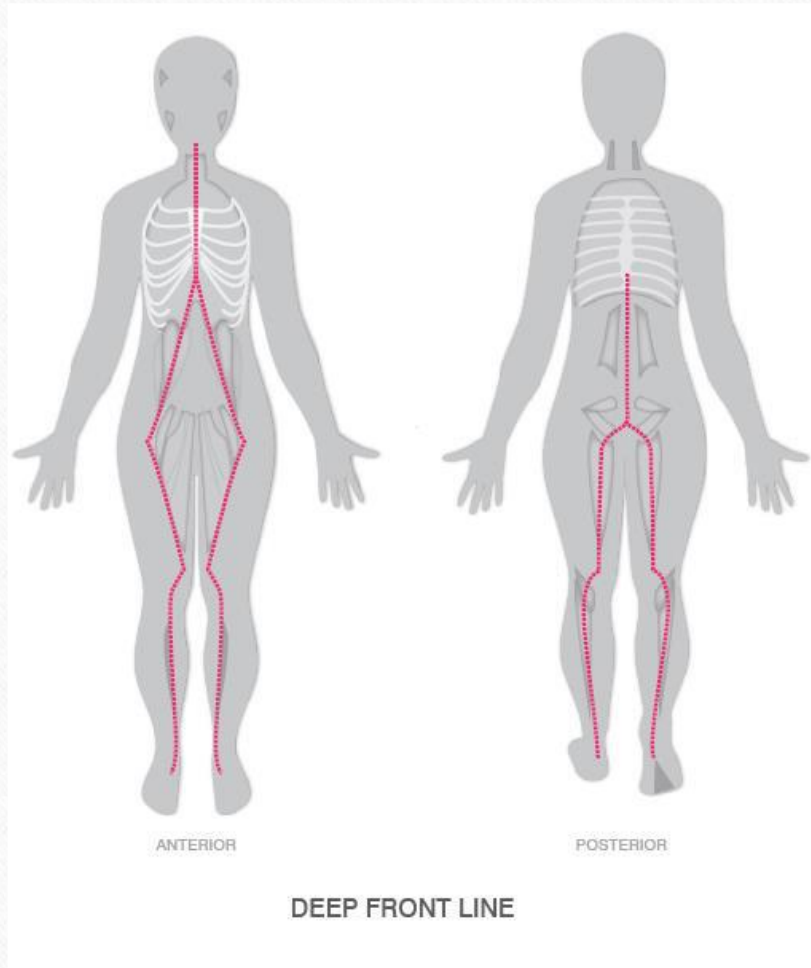
Deep Front Line

Lower Anterior

- Anterior inter-muscular septum
- Adductor longus, adductor brevis
- Pectineus
- Psoas, iliacus

Upper Posterior

- Anterior longitudinal ligament
- Longuscolli
- Longuscapitis

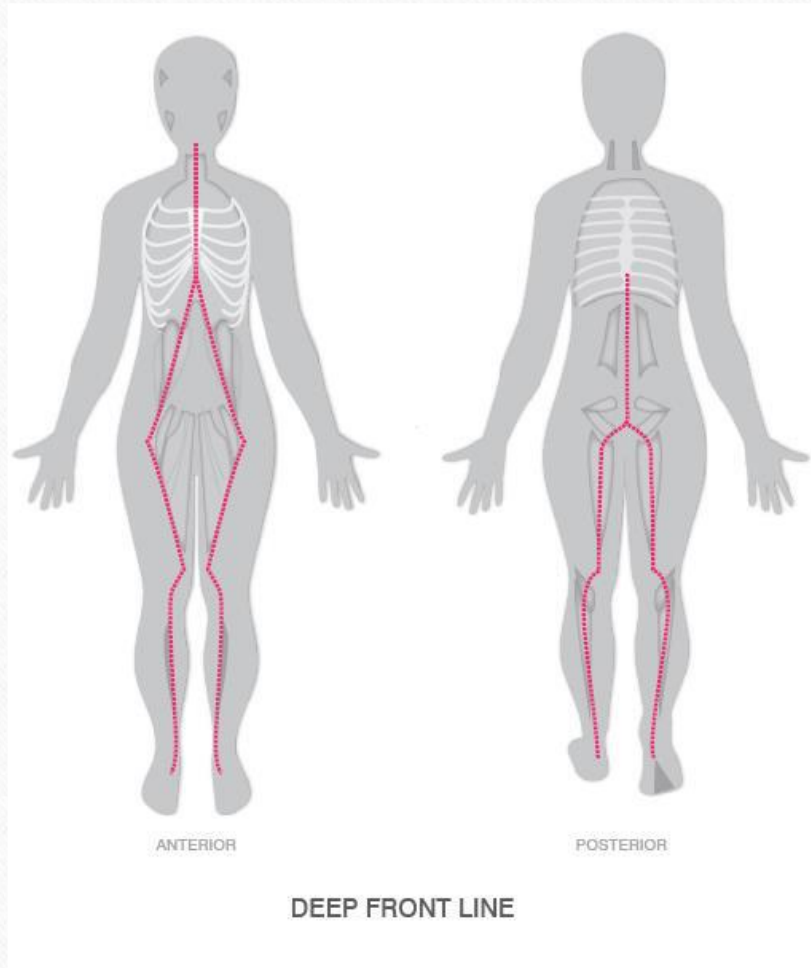


Upper Middle

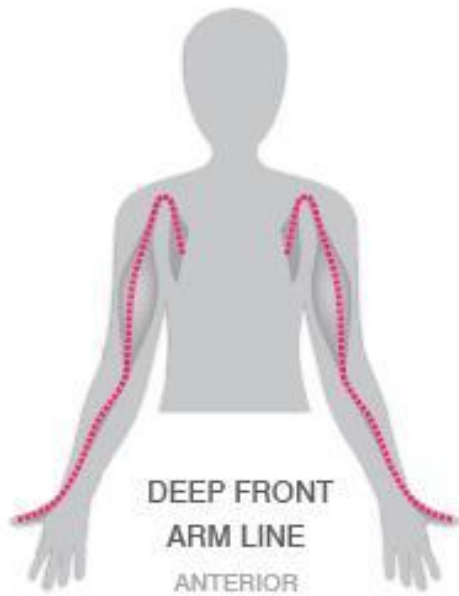
- Posterior diaphragm, central tendon
- Pericardium
- Scalene muscles

Upper Anterior

- Anterior diaphragm
- Infrahyoid muscles
- Suprahyoid muscles
- Jaw muscles

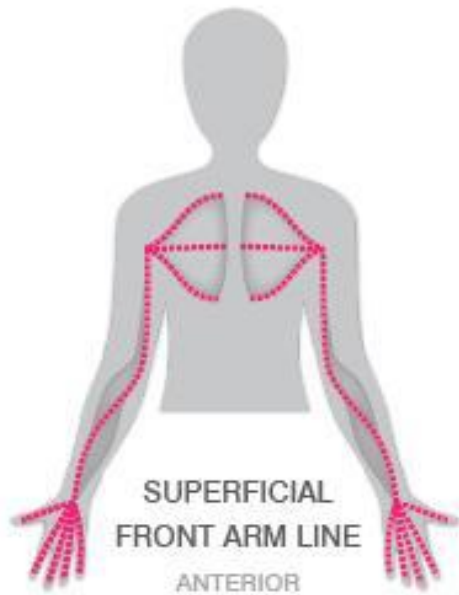


Deep Front Arm Line



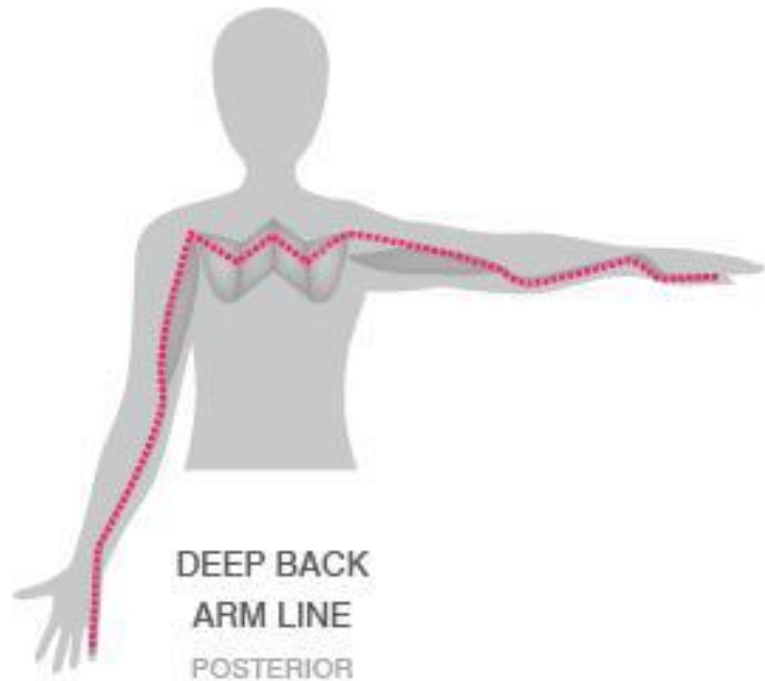
- Clavipectoral fascia
- Pectoralis minor
- Coracobrachialis
- Brachialis
- Biceps brachii
- Radial periosteum
- Thenar muscles

Superficial Front Arm Line



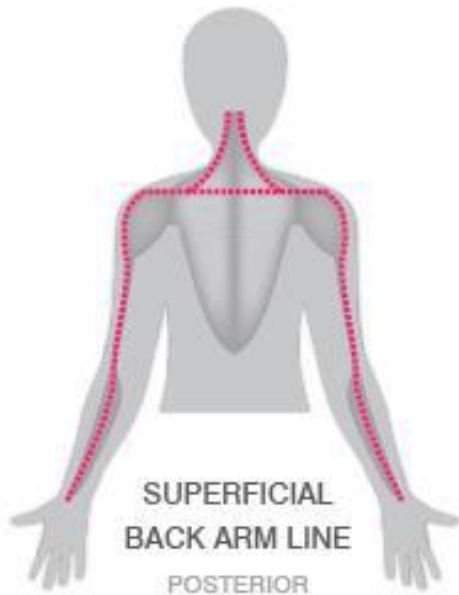
- Pectoralis major
- Latissimus dorsi
- Medial inter-muscular septum
- Flexor group
- Carpal tunnel

Deep Back Arm Line



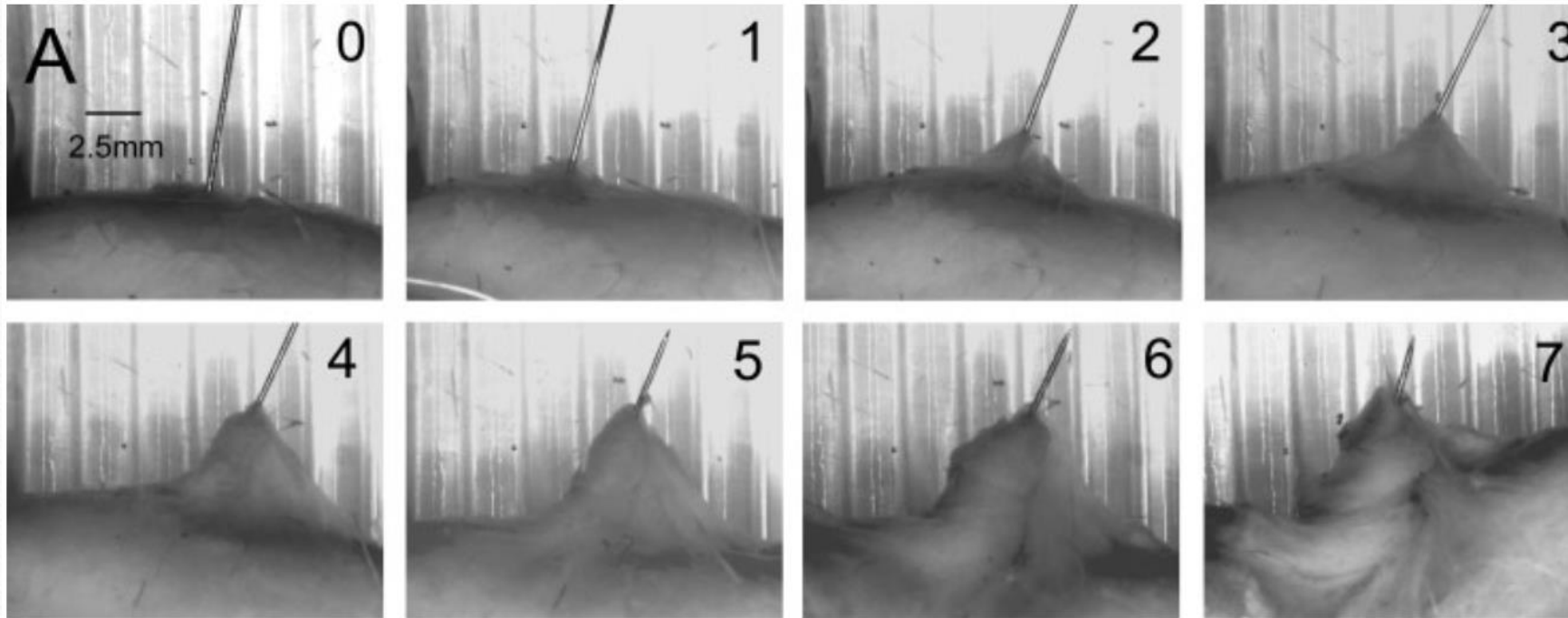
- Rhomboids and levator scapulae
- Rotator cuff muscles
- Triceps Brachii
- Ulnar Periosteum
- Ulnar collateral ligaments
- Hypothenar muscles

Superficial Back Arm Line



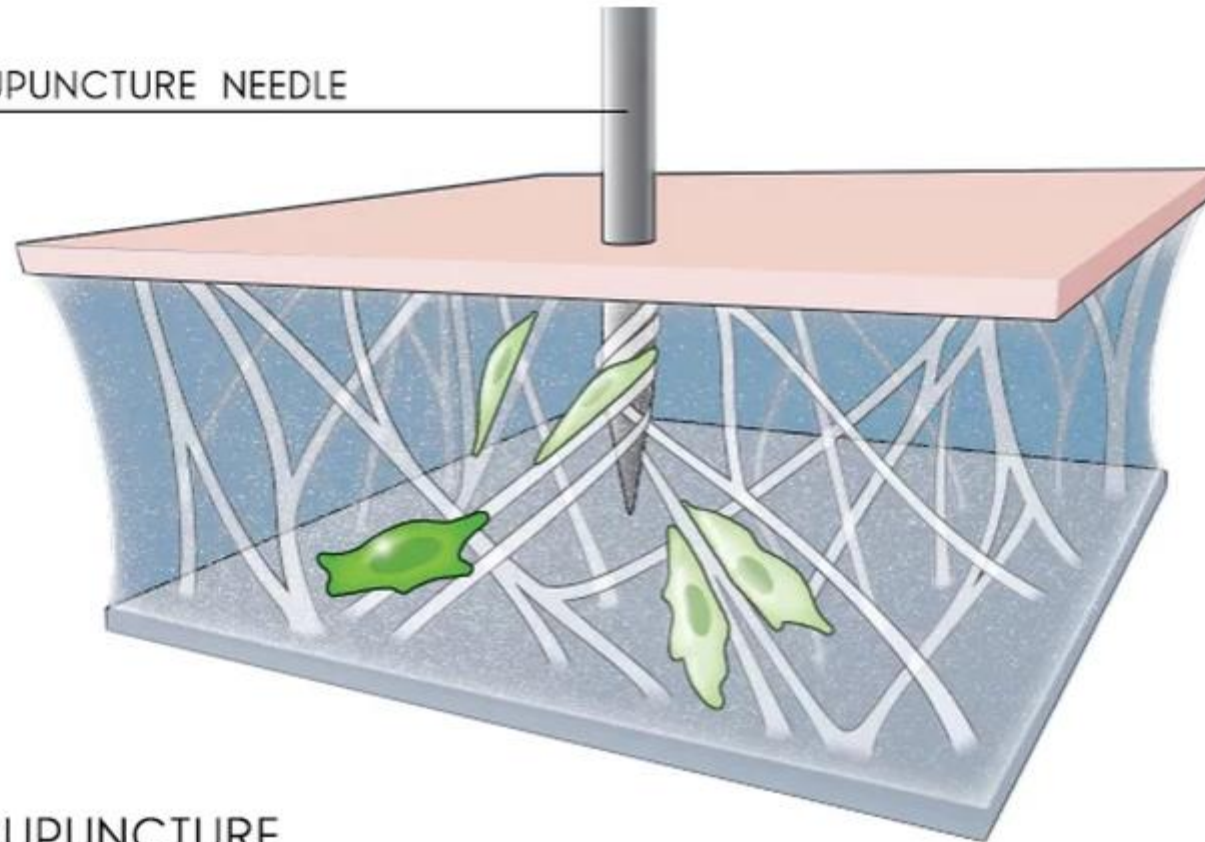
- Trapezius
- Deltoid
- Lateral inter-muscular septum
- Extensor group

Needle grasp is stronger on acupuncture points versus non-acupuncture points.



Langevin, H. M. and Yandow, J. A. (2002), Relationship of acupuncture points and meridians to connective tissue planes. *Anat. Rec.*, 269: 257–265. doi: 10.1002/ar.10185

ACUPUNCTURE NEEDLE



ACUPUNCTURE

CONNECTIVE TISSUE SPOOLS AROUND A TWISITING
ACUPUNCTURE NEEDLE, CREATING A LOCALIZED STRETCH