Learn all about the body’s very own “plastic wrap” and the organization of muscles in the upper and lower limbs.
Fascia is a type of connective tissue composed largely of collagen. This gives it flexibility.

Layers of fascia protect internal organs by keeping them in place and helping them slide past one another easily.

Fascia also wraps around groups of muscles, separating them into compartments.
A muscle compartment is a group of muscles and nerves with a sheet of fascia wrapped around them.

Compartments are separated from each other by intermuscular septa.

There are two compartments in each arm, two in each forearm, three in each thigh, and four in each of the lower legs.
The **brachial fascia** surrounds the arm muscles. The **lateral and medial intermuscular septa** divide the muscles in the arm into anterior and posterior compartments.
The anterior compartment of the arm contains flexors.

**Coracobrachialis**: participates in flexion, adduction, and horizontal adduction of the arm at the shoulder joint.

**Brachialis and biceps brachii**: two of the prime movers of elbow flexion.

**Muscle action: Elbow flexion**
The act of bending the elbow to move the anterior forearm toward the shoulder.
The posterior compartment of the upper arm contains mostly extensors.

**Muscle action: Elbow extension**

The act of straightening the forearm

- **Triceps brachii**: prime mover of elbow extension
- **Anconeus**: synergist of elbow extension
ANTEBRACHIAL FASCIA

The *antebrachial fascia* surrounds the forearm muscles. The *interosseous membrane* divides the muscles of the forearm into an anterior compartment and a posterior compartment.
The anterior compartment of the forearm contains muscles that flex the wrist and digits and pronate the forearm.

Some helpful Latin to know:

- **Carpi** = of the wrist (carpus)
- **Digitorum** = of the digits/fingers
- **Radialis** = relating to the radius
- **Pollicis** = of the thumb (pollex)
- **Profundus** = deep
- **Superficialis** = superficial
- **Ulnaris** = relating to the ulna

**Muscle action: Wrist flexion**

The act of bending the palm of the hand towards the anterior forearm
The posterior compartment of the forearm contains muscles that extend the wrists and digits and supinate the forearm.

It also contains the brachioradialis, which is a flexor of the elbow joint.

Some helpful Latin to know:

Brevis = short

Digit minimi = of the little finger (digitus minimus)

Indicis = of the index finger (index)

Longus = long

Muscle action: Wrist extension

The act of lifting the back of the hand toward the posterior forearm
The **fascia lata** wraps around the muscles of the thigh, or upper leg. The **lateral, medial, and posterior intermuscular septa** divide these muscles into anterior, posterior, and medial compartments.
THIGH: ANTERIOR COMPARTMENT

The anterior compartment mostly contains muscles that are primarily involved in the extension of the knee joint.

The **quadriceps femoris group** extends the knee.

The **articularis genu** pulls the articular capsule of the knee superiorly during knee extension.

The **sartorius** flexes the knee.

**Muscle action: Knee extension**

The act of straightening the lower leg
The medial compartment contains mostly muscles that participate in the adduction of the thigh at the hip joint.

The **obturator externus** (or external obturator) externally rotates the thigh and stabilizes the pelvis.

The **gracilis** muscle is a prime mover of knee flexion in addition to participating in hip adduction.
The posterior compartment in the thigh is made up of the hamstrings, which are among the prime movers of knee flexion.

**Muscle action: Knee flexion**

The act of bending the knee to move the lower leg toward the buttock.
The crural fascia surrounds the lower leg muscles. The anterior, posterior, and transverse intermuscular septa and the interosseous membrane of the leg divide these muscles into anterior, lateral, superficial posterior, and deep posterior compartments.
The muscles in the anterior compartment of the lower leg participate in the dorsiflexion of the foot. The peroneus tertius is a synergist, and the others are the prime movers of this muscle action. The tibialis anterior muscle is also a prime mover in inversion of the foot.

**Muscle action: Dorsiflexion**

The act of bending the foot to point the toes toward the shin

**Muscle action: Foot inversion**

The act of rotating the sole of the foot inward toward the midline of the body
Fibularis longus

Fibularis brevis

**LOWER LEG: LATERAL COMPARTMENT**

The lateral compartment contains the fibularis brevis and fibularis longus. These muscles are prime movers of foot eversion and synergists of plantarflexion of the foot.

**Muscle action: Foot eversion**

The act of rotating the sole of the foot outward away from the midline of the body.
Muscles in the deep posterior compartment participate in several different muscle actions.

**Tibialis posterior**: a prime mover of plantarflexion and inversion of the foot

**Flexor hallucis longus**: synergist of plantarflexion

**Flexor digitorum longus**: one of the prime movers of plantarflexion

The **popliteus** helps rotate and flex the knee.
LOWER LEG: SUPERFICIAL POSTERIOR COMPARTMENT

The superficial posterior compartment houses the gastrocnemius, soleus, and plantaris.

**Gastrocnemius**: one of the prime movers of knee flexion

**Soleus**: a prime mover in plantarflexion of the foot

**Plantaris**: a synergist in plantarflexion of the foot

**Muscle action: Plantarflexion of the foot**

The act of bending the foot to point the toes toward the ground
COMPARTMENT SYNDROME

Compartment syndrome happens when there is bleeding or swelling inside a compartment. This puts pressure on the fascia surrounding the compartment, as well as the nerves and blood vessels inside it. Prolonged pressure within a compartment can cause tissue death and damage to nerves.

Acute compartment syndrome is an emergency medical condition. To relieve the pressure, medical professionals perform a procedure called a fasciotomy, in which they make an incision in the skin and fascia of the affected compartment.
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