

Lateral Plane or Sagittal Plane: Imagine a vertical plane that runs through your body from front to back or back to front. This plane divides the body into right and left regions.

Frontal Plane or Coronal Plane: Imagine a vertical plane that runs through the center of your body from side to side. This plane divides the body into front (anterior) and back (posterior) regions.

Transverse Plane: Imagine a horizontal plane that runs through the midsection of your body. This plane divides the body into upper (superior) and lower (inferior) regions.



Anatomical Directions

Anterior: Front, in front of

Posterior: After, behind, towarded the rear.

Proximal: Near, close to the center or origin

Distal: Away from, or far from the center or origin

Inferior: Below, under

Superior: Above, over

Lateral: Towards the side, away from the mid-line

Medial: Away from the side, towards the mid-line, middle

Anatomical Movements

Flexion: A movement that decreases the angle of a joint.

The act of bending a limb or a joint in the body by the action of the flexors.

When sitting down the knees are flexed. Flexion of the hip or shoulder moves the limb forward towards the anterior side of the body.

Extension: The opposite of flexion, a straightening movement that increases the angle of a joint or increased the angle of two body parts. When standing up the knees are fully extended. Extension of the hip or shoulder moves the limbs backwards towards the posterior side of the body.

Rotation: A motion that occurs when a part turns on its axis. An example of this would be the head rotating on the neck to shake the head “no”

Internal Rotation or Medial Rotation:A rotation of the hip or shoulder joint which would point the toes or the flexed forearm inwards towards the midline.

External Rotation or Lateral Rotation:A rotation of the hip or shoulder joint which would turn the toes or the flexed forearm outwards or away from the midline.



Anatomical Movements

Elevation: Movement in a superior or upward direction.

The upper fibers of the trapezius aid in elevating the apex of the shoulder.

Depression: Movement in an anterior or downwards direction.

The lower muscle fibers of the trapezius aid in depressing the apex of the shoulder

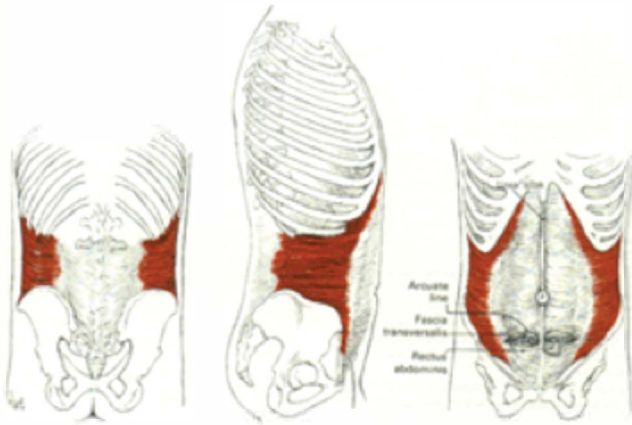
Abduction: A motion that pulls a structure or part away from the midline of the body. Raising the arm laterally is an example of abduction.

Adduction: A motion that pulls a structure or part towards the midline of the body. Dropping the arms to the sides and pulling the knees together are examples of adduction.

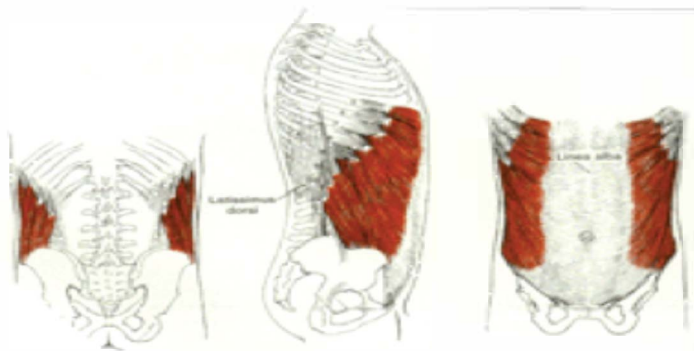
Major Muscles Used in Pilates - Core/Trunk



Rectus Abdominals: The rectus abdominis muscle is a long, flat muscle that extends vertically through the entire length of the abdomen. The muscle flexes the vertebral column particularly in the lumbar portion, drawing the breastbone (sternum) toward the pubis. It also tenses the abdominal wall and aids in compressing the contents of the abdomen.



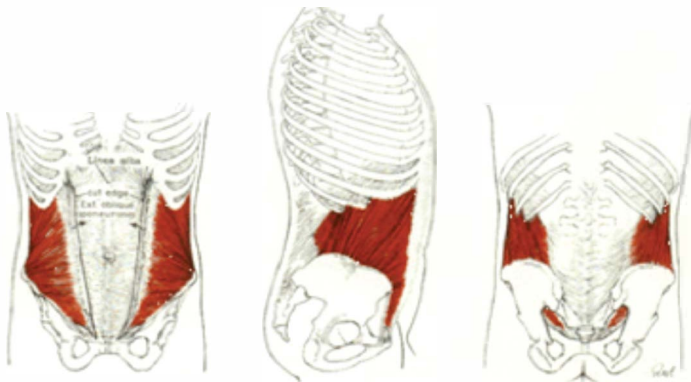
Transverse Abdominals: The Transverse Abdominals compress the ribs and abdominal organs, providing thoracic and pelvic stability. The transverse abdominals are the main stabilizer muscle of your lumbar spine and pelvis. It wraps around the trunk horizontally like a belt. This muscle is important for stabilizing your back and hips before any movement in any direction occurs. The Transverse Abdominals also assist in childbirth.



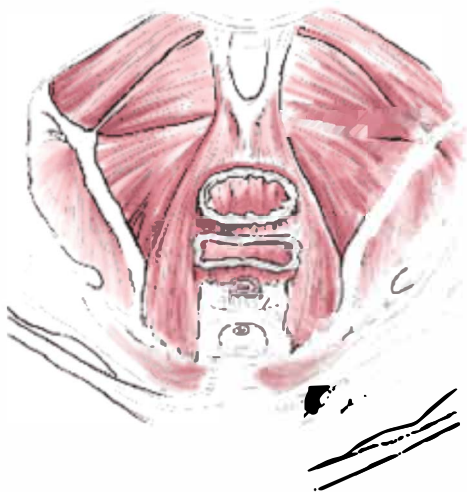
External Obliques: This pair of muscles are located on either side of the rectus abdominis. The muscle fibers of the external obliques run diagonally downward and inward from the lower ribs to the pelvis, forming the letter V. You can locate them by putting your hands in your coat pocket. The external obliques are referred to as "opposite side" rotators.

Due to the muscle fiber arrangement, when you rotate to the left, the external oblique fibers on your right side facilitate the movement. Conversely, if you rotate to your right, the left external oblique fibers facilitate the movement

Major Muscles Used in Pilates - Core/Trunk



Internal obliques: The Internal obliques run diagonally inwards and upwards. The internal obliques flex your spine to the side (lateral flexion) and rotate your spine to the same side. Thus, if you rotate to the left, the left internal oblique muscles facilitate the movement. When you rotate to the right, the right internal oblique muscles help cause the motion.

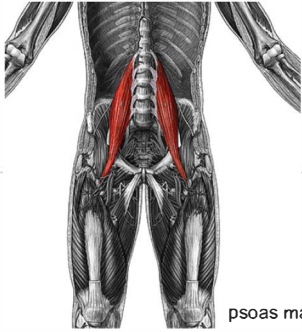


Pelvic Floor: The pelvic floor is made up of several layers of muscles, tissues, and ligaments that support the bladder, urethra, uterus, vagina and rectum. The pelvic floor muscles are attached to the front, back and sides of the pelvic bones to create a substructure, which supports the pelvic organs. In addition to supporting the body's vital pelvic organs, the pelvic floor muscles are important in bladder control, bowel control and organ support.



Paraspinal muscles: The Paraspinal muscles run next to and parallel with the spine. They consist of many small muscles that are attached to the vertebrae and control the motion of the individual bones, as well as assist with the larger motions of the whole trunk. These muscles help support the spine and keep it in proper alignment. They also limit the range of motion of the spine, which helps to prevent injuries to the discs and spinal cord caused by over extension.

Anatomy Sheet



psoas major

Psoas Major: Is a muscle that attaches at the bottom of the thoracic spine (T12) and along the lumbar spine (through L4), then runs through the pelvic bowl, down over the front of the hip joint, and attaches at the top of the femur (thigh bone). It is the only muscle that connects the spine to the legs. The Psoas is a hip flexor and brings the trunk and legs closer together. The Psoas assists in straightening the lumbar spine and it also aids in side bending.

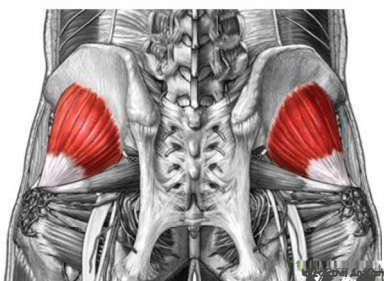
Major Muscles Used in Pilates - Lower Body



Gluteus Maximus: Is the largest and one of the strongest muscles in the human body. It is the most superficial of the three gluteal muscles and makes up a large portion of the shape and appearance of the buttocks. The GM is an extensor and an outward rotator of the hip. It stabilizes the pelvis and is an abductor and external rotator of the hip.

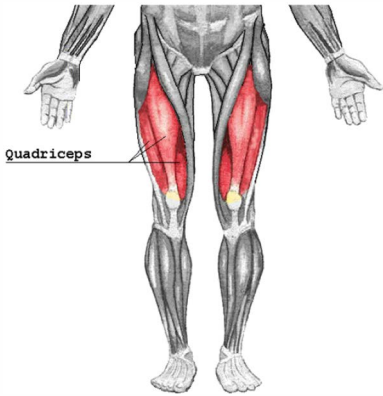


Gluteus Medius: With the leg in neutral (straightened), the Gluteus Medius and Gluteus Minimus function together to pull the thigh away from midline, or "abduct" the thigh. During gait, these two muscles function principally in supporting the body on one leg, in conjunction with the Tensor Fascia Latae (TFL), to prevent the pelvis from dropping to the opposite side. Additionally, with the hip flexed the Gluteus Medius and Minimus internally rotate the thigh. With the hip extended, the Gluteus Medius and Gluteus Minimus externally rotate the thigh.



Gluteus Minimus: Is the smallest of the three gluteal muscles. The Gluteus Minimus along with the Gluteus Medius abduct the thigh, when the limb is extended, and are principally called into action along with the Tensor Fasciae Latae to support the body when standing on one leg. Additionally, with the hip flexed the Gluteus Medius and Minimus externally rotate the thigh. With the hip extended, the Gluteus Medius and Gluteus Minimus internally rotate the thigh.

Major Muscles Used in Pilates - Lower Body

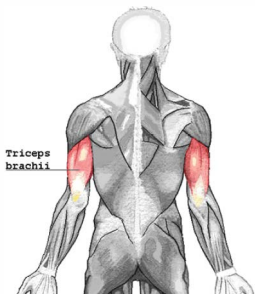


Quadriceps Femoris: Is a large muscle group that includes the four prevailing muscles (Rectus Femoris, Vastus lateralis, Vastus medialis and, Vastus intermedius) on the front of the thigh. It is the great extensor muscle of the knee, forming a large fleshy mass which covers the front and sides of the femur. All four quadriceps are powerful extensors of the knee joint. The quadriceps, specifically the Vastus Medialis, plays the important role of stabilizing the patella and the knee joint during gait.

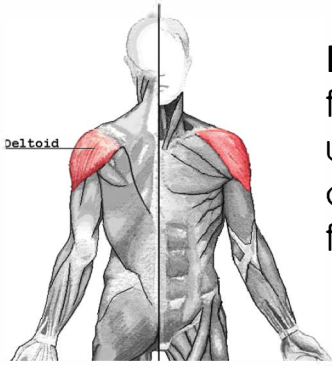
Major Muscles Used in Pilates - Upper Body



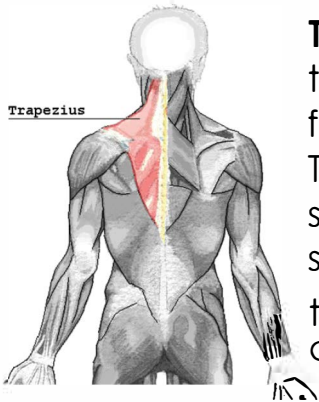
Biceps Brachii: As the name implies is a two headed muscle. It is the large muscle at the front of the upper arm that flexes the forearm. It is a flexor of the elbow joint and an antagonist of the Triceps.



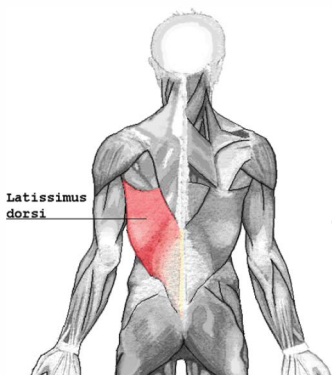
Triceps Brachii: Is a three headed arm muscle. The Triceps is an extensor muscle of the elbow joint and an antagonist of the Biceps and Brachialis muscles.



Deltoids: The Deltoids are the triangular muscle of the shoulder that form the rounded flesh of the outer part of the upper arm. It passes up and over the shoulder joint. The Deltoids abduct the arm. The anterior fibers flex and medially rotate the arm and the posterior fibers extend and laterally rotate the arm.



Trapezius: The Trapezius muscle is a flat, triangular muscle that covers the back of the neck, shoulders and thorax. The upper and lower fibers are important to the orientation of the shoulder blade (scapula). The upper part, acting alone, elevates the shoulder and braces the shoulder girdle when a weight is carried. The lower part draws the scapula downward. When both of the trapezius muscles act together, the scapula can be brought toward the body and the head can draw directly backward.



Latissimus Dorsi: Is a broad flat superficial muscle of the lower part of the back. The “lats” extend, adduct, and rotate the arm medially and draws the shoulder downward and backward.