



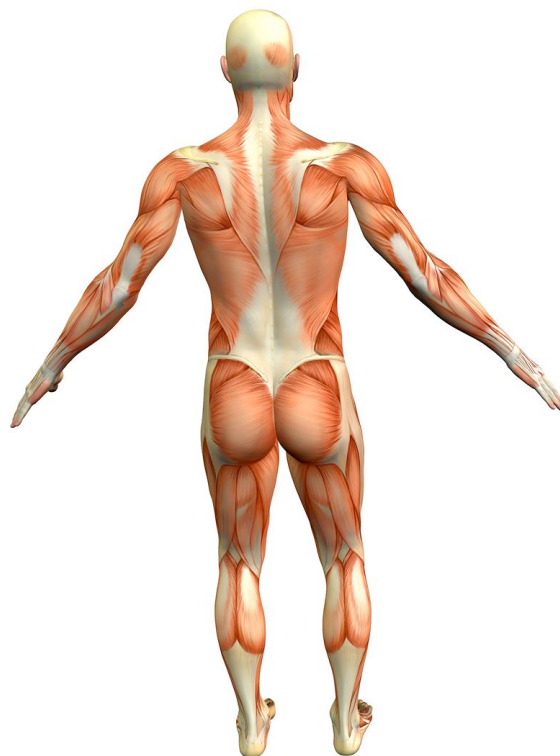
The Muscular System

Origin and Insertions,
Joint Actions and
Agonist & Antagonists

LEARN - INSPIRE - SUCCEED



Anterior view



Posterior view

Origin, Insertion and Joint Actions

Muscle Name	Origin	Insertion	Joint(s) crossed	Joint action when muscle contracts
Shoulder Girdle:				
Trapezius		Spine of scapula and lateral edge of clavicle		
Rhomboids	C7 and T1 - T5		Shoulder girdle	
Levator scapulae		Inner edge of scapula		
Serratus anterior	Ribs 1-8			Protraction of scapula
Pectoralis minor	Ribs 3-5			
Shoulder Joint:				
Deltoid		Half way down the lateral edge of the humerus		
Pectoralis major			Shoulder	Shoulder horizontal flexion, adduction and medial rotation
Latissimus dorsi	Lower 3-4 ribs, bottom of scapula, via TLF - T6-T12, lumbar and sacral vertebrae, iliac crest			
Teres major		Humerus		

Muscle Name	Origin	Insertion	Joint(s) crossed	Joint action when muscle contracts
Rotator Cuff:				
Supraspinatus		Top lateral part of humerus		Abduction of humerus
Infraspinatus	Scapula			
Subscapularis			Shoulder	Medial rotation of humerus
Teres minor	Scapula			
Muscles of the elbow:				
Biceps brachii			Shoulder and elbow	
Brachialis		Top of ulna	Elbow	
Brachioradialis				Flexion when the forearm is semi-pronated
Triceps brachii		Olecranon of ulna		
Muscles of the vertebral column:				
Illiocostalis	Ribs and iliac crest		Vertebrae	
Longissimus	Cervical, thoracic and lumbar vertebrae	Superior vertebrae to origin		
Spinalis	Cervical, thoracic and lumbar vertebrae			Extends the spine
Quadratus lumborum		L1-4 and bottom of 12th rib		
Multifidus	Transverse processes of vertebrae		Vertebrae	

Muscle Name	Origin	Insertion	Joint(s) crossed	Joint action when muscle contracts
Anterior abdominal wall muscles:				
Rectus abdominus			Lumbar and thoracic vertebrae	
External obliques		Linea alba and iliac crest		
Internal obliques	Thoracolumbar fascia and iliac crest			
Transverse abdominus	Lumbar fascia, iliac crest and cartilage of lower ribs			
Hip and Pelvic girdle:				
Iliacus	Ilium			
Psoas major	T12 and lumbar vertebrae			
Sartorius	Iliac spine	Tibia		
Tensor fascia latae	Outer edge of iliac crest			
Piriformis		Top of femur, greater trochanter		
Adductor group; Longus, magnus, brevis	Pubis			Adducts hip
Pectineus		Posterior middle of femur	Hip	
Gracilis			Hip and knee	Assist hip and knee flexion and adducts hip
Gluteals / abductors	Ilium		Hip	

Muscle Name	Origin	Insertion	Joint(s) crossed	Joint action when muscle contracts
Muscles of the upper leg:				
Hamstrings; Bicep femoris, semimembranosus, semitendinosus				Knee flexion and extension
Quadriceps; Rectus femoris, vastus medialis, intermedius, lateralis		Front of tibia via patella tendon		
Muscles of the lower leg:				
Gastrocnemius	Femur			
Soleus	Tibia and fibula			
Tibialis anterior		Cuneiform bone and 1st metatarsal		

Agonist and Antagonists

Joint	Joint Action	Agonist	Antagonist
Shoulder Girdle	Elevation	Upper Trapezius Levator Scapulae	Lower Trapezius
	Depression	Lower Trapezius Latissimus Dorsi	Upper Trapezius Levator Scapulae
	Protraction	Serratus Anterior Pectoralis Minor	Middle Trapezius Rhomboids
	Retraction	Middle Trapezius Rhomboids	Serratus Anterior Pectoralis Minor
Shoulder Joint (Gleno-humeral)	Flexion	Anterior Deltoid Biceps Brachii	Latissimus Dorsi Posterior Deltoid Teres Major Triceps Brachii
	Horizontal Flexion	Pectoralis Major	Posterior Deltoid
	Extension	Latissimus Dorsi Posterior Deltoid Teres Major Triceps Brachii	Anterior Deltoid Biceps Brachii
	Horizontal Extension	Posterior Deltoid	Pectoralis Major
	Abduction	Deltoids, emphasis on medial Supraspinatus	Pectoralis Major Latissimus Dorsi Teres Major
	Adduction	Pectoralis Major Latissimus Dorsi Teres Major	Deltoids, emphasis on medial Supraspinatus
	Medial Rotation	Pectoralis Major Latissimus Dorsi Teres Major Subscapularis	Infraspinatus Teres Minor
	Lateral Rotation	Infraspinatus Teres Minor	Pectoralis Major Latissimus Dorsi Teres Major Subscapularis

Joint	Joint Action	Agonist	Antagonist
Elbow	Flexion	Biceps Brachii Brachialis Brachioradialis	Triceps Brachii
	Extension	Triceps Brachii	Biceps Brachii Brachialis Brachioradialis
Vertebral Column	Flexion	Rectus Abdominus External Obliques (Bilaterally) Internal Obliques (Bilaterally)	Iliocostalis Longissimus Spinalis Multifidus (Bilaterally)
	Extension	Iliocostalis Longissimus Spinalis Multifidus (Bilaterally)	Rectus Abdominus External Obliques (Bilaterally) Internal Obliques (Bilaterally)
	Lateral Flexion	Quadratus Lumborum (Unilaterally) External and Internal Obliques (Unilaterally) Multifidus (Unilaterally) Psoas Major (Unilaterally)	Opposing side of the agonist muscle
	Rotation	External and Internal Obliques (Unilaterally) Multifidus (Unilaterally)	Opposing side of the agonist muscle
Hip Joint	Flexion	Iliacus Psoas Major Sartorius Tensor Fascia Latae Pectineus Rectus Femoris	Gluteus Maximus Bicep Femoris Semimembranosus Semitendinosus
	Extension	Gluteus Maximus Bicep Femoris Semimembranosus Semitendinosus	Iliacus Psoas Major Sartorius Tensor Fascia Latae Pectineus Rectus Femoris
	Abduction	Tensor Fascia Latae Gluteus Minimus Gluteus Medius Piriformis	Adductor Magnus, Longus, Brevis Pectineus Gracilis
	Adduction	Adductor Magnus, Longus, Brevis Pectineus Gracilis	Tensor Fascia Latae Gluteus Minimus Gluteus Medius Piriformis

Joint	Joint Action	Agonist	Antagonist
Hip Joint	Medial Rotation	Tensor Fascia Latae Gluteus Minimus and Medius Pectineus	Sartorius Gluteus Maximus Piriformis
	Lateral Rotation	Sartorius Gluteus Maximus Piriformis	Tensor Fascia Latae Gluteus Minimus and Medius Pectineus
Knee Joint	Flexion	Bicep Femoris Semimembranosus Semitendinosus Gastrocnemius	Rectus Femoris Vastus Medialis Vastus Intermedius Vastus Lateralis
	Extension	Rectus Femoris Vastus Medialis Vastus Intermedius Vastus Lateralis	Bicep Femoris Semimembranosus Semitendinosus Gastrocnemius
Ankle Joint	Plantarflexion	Gastrocnemius Soleus	Tibialis Anterior
	Dorsiflexion	Tibialis Anterior	Gastrocnemius Soleus