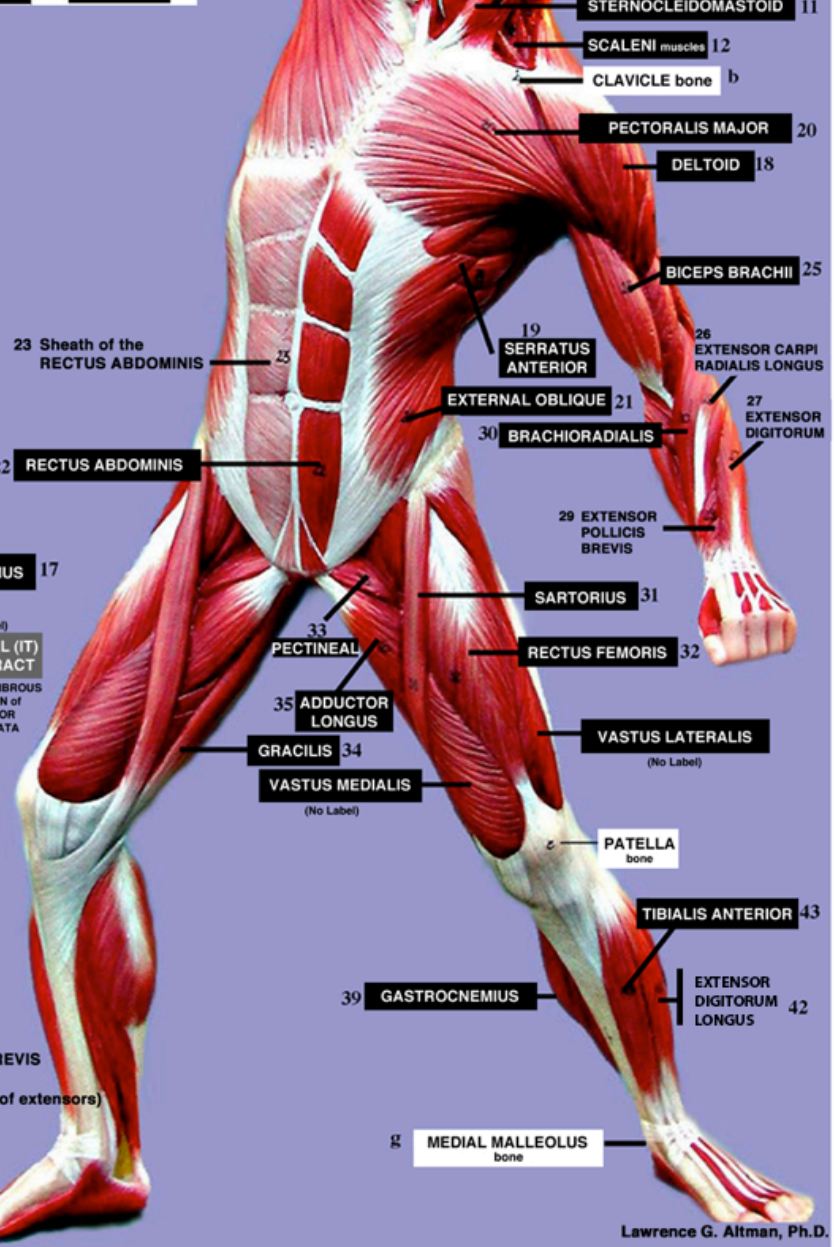




- 01 **FRONTALIS**
- 02 **ORBICULARIS OCULI**
- 03 **NASAL**
- 04 **LEVATOR LABII SUPERIORIS**
- 05 **ZYGOMATICUS MAJOR**
- 06 **ORBICULARIS ORIS**
- 07 **DEPRESSOR ANGULI ORIS**
- 08 **TEMPORALIS**
- OA **CRANIUM**
- AA **BUCCINATOR**
- BB **MASSETER**

# SOMSO MUSCLE MODEL

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**ADDITIONAL MUSCLES:**

- 13 LEVATOR SCAPULAE
- 28 RETINACULUM EXTENSORUM
- 33 SEMIMEMBRANOSUS
- 44 EXTENSOR DIGITORUM BREVIS
- 45 PERONAEUS LONGUS
- 46 INFERIOR RETINACULUM (of extensors)

**BIO 211**



Naugatuck Valley Community College

HUMAN ANATOMY & PHYSIOLOGY I

g **MEDIAL MALLEOLUS bone**

Lawrence G. Altman, Ph.D.

NVCC BIO 211  
HUMAN ANATOMY and PHYSIOLOGY I  
**LAB MODEL: MUSCLES**

LOCATION, ACTION, ORIGIN and INSERTION



A Special Thanks to NVCC student Catherine ("Cait") Martello for her invaluable proofreading and suggestions.

**Muscle 04**  
**LEVATOR LABII SUPERIORIS**  
See Enlarged Head

**LOCATION:** Between the Orbicularis Oris and the lower eye margin

**ACTION:** Opens lips; furrows upper lip

**ORIGINS:** Zygomatic bone and the infraorbital margin of the Maxilla

**INSERTION:** Skin and muscle of the upper lip

**Muscle 05**  
**ZYGOMATICUS MAJOR**  
See Enlarged Head

<b>LOCATION:</b>	From the Zygomatic arch to the corners of the mouth
<b>ACTIONS:</b>	Draws angle of the mouth backwards and upwards; smiling
<b>ORIGIN:</b>	Zygomatic bone in front of the temporal process
<b>INSERTION:</b>	Angle of mouth

**Muscle 01**  
**FRONTALIS**  
See Enlarged Head

<b>LOCATION:</b>	A cutaneous muscle stretching over the forehead to the upper eyelid
<b>ACTION:</b>	Draws back scalp, raises eyebrows, wrinkles the brows
<b>ORIGINS:</b>	2 bellies: aponeurosis and the region anterior to vertex (point of curvature)
<b>INSERTION:</b>	Skin above the nose and the ears

**Muscle 02**  
**ORBICULARIS OCULI**  
See Enlarged Head

<b>LOCATION:</b>	Surrounds the rim of the orbit
<b>ACTION:</b>	Blinking, squinting, closes eyes
<b>ORIGIN:</b>	Frontal and Maxilla
<b>INSERTION:</b>	Tissues of the eyelid

**Bone 03**  
**NASAL BONE**  
Enlarged Head (3)

Simply know as the inferior region of the nasal bone here

**Muscle 06**  
**ORBICULARIS ORIS**  
See Enlarged Head

<b>LOCATION:</b>	Multilayered Mostly surrounding the lips
<b>ACTIONS:</b>	Purses and protrudes lips Kissing and whistling
<b>ORIGIN:</b>	Indirectly from the Mandible and the Maxilla and other lip muscles
<b>INSERTIONS:</b>	Encircles the mouth Inserts into muscle and skin at the angles of the mouth

**Muscle 07**  
**DEPRESSOR ANGULI ORIS**  
See Enlarged Head

<b>LOCATION:</b>	Present on both sides of the mouth
<b>ACTIONS:</b>	Active during whole face frowning Depresses the corner(s) of the mouth
<b>ORIGIN:</b>	Mandible
<b>INSERTION:</b>	Angles (corners) of the mouth

Muscle 08 TEMPORALIS See Enlarged Head	
<b>LOCATION:</b>	Fan-shaped muscle Covers parts of the Temporal, Frontal and Parietal bones
<b>ACTIONS:</b>	Closes jaw Elevates/retracts the Mandible A small region of this muscle can help to protract the Mandible
<b>ORIGIN:</b>	Temporal fossa
<b>INSERTION:</b>	Coronoid process of the Mandible via a tendon that passes deep to the Zygomatic arch

Muscle BB MASSETER See Enlarged Head	
<b>LOCATION:</b>	Strong muscle covering the lateral aspect of the Mandible (ramus)
<b>ACTIONS:</b>	Elevates the Mandible Closes the jaw
<b>ORIGIN:</b>	Zygomatic bone (arch)
<b>INSERTION:</b>	Mandible (angle and ramus)

Muscle 09 POSTERIOR AURICULAR Smaller Model on the Left	
<b>LOCATION:</b>	Surrounds auricula (external outer ear)
<b>ACTION:</b>	Draws auricle backwards
<b>ORIGIN:</b>	Mastoid process
<b>INSERTION:</b>	Cartilage of the ear

**Bone OA  
CRANIUM  
See Enlarged Head**

**This is bone.  
It is the portion of the skull  
that encloses the brain.  
The roof (cap) of the skull is  
referred to as the *Calvarium*.**

Muscle 10 OCCIPITALIS Smaller Model on the Left	
<b>LOCATION:</b>	Part of the Occipitofrontalis muscle which contains the Frontalis and Occipitalis portions (bellies). Both bellies are not seen in their entirety here
<b>ACTION:</b>	Moves the scalp
<b>ORIGIN:</b>	Occipital and Temporal bones
<b>INSERTION:</b>	Aponeurosis (galea)

Muscle AA BUCCINATOR Swww Enlarged Head	
<b>LOCATION:</b>	Main muscle of the cheek Thin/horizontal plane Deep to the Masseter
<b>ACTIONS:</b>	Compression of the cheeks Holds food between the teeth while chewing
<b>ORIGIN:</b>	Molar area of Maxilla and Mandible
<b>INSERTION:</b>	Orbicularis Oris

Muscle 11 STERNOCLEIDOMASTOID Large Model on the right	
<b>LOCATION:</b>	Neck
<b>ACTION:</b>	Flexes and rotates the head Flexes the head towards the shoulders
<b>ORIGIN:</b>	Manubrium and the Clavicle
<b>INSERTION:</b>	Temporal bone (Mastoid Process)

Muscle 12 SCALENI MUSCLES Large Model on the right	
<b>LOCATION:</b>	<i>Four (4) of these muscles:</i> Scalene Scalene anterior Scalene middle Scalene posterior
<b>ACTION:</b>	Flexion and rotation of the Cervical Vertebrae
<b>ORIGIN:</b>	Transverse processes of various Cervical Vertebrae
<b>INSERTION:</b>	Various ribs and Vertebrae

<b>Muscle 13</b>	Not Shown SCALENI MUSCLES Levator Scapulae
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Muscle 14 TRAPEZIUS Smaller Model on the Left	
<b>LOCATION:</b>	Flat and triangular; mid - upper back
<b>ACTION:</b>	Stabilizes, raises, retracts and rotates the Scapula
<b>ORIGIN:</b>	Occipital bone, spinous processes of C-7 and all thoracic vertebrae
<b>INSERTION:</b>	Continuous insertion along the Scapula (Acromion and Spine) Lateral third of the Clavicle

Muscle 15 INFRASPINATUS Smaller Model on the Left	
<b>LOCATION:</b>	Trapezoidal and flat along the lower Scapula
<b>ACTION:</b>	Laterally rotates the arm at the shoulder
<b>ORIGIN:</b>	Scapula (infraspinous fossa)
<b>INSERTION:</b>	Humerus: middle of the greater tubercle

Muscle 16 LATISSIMUS DORSI Smaller Model on the Left	
<b>LOCATION:</b>	Literally: broadest muscle of the back Dorso-lateral to the trunk of the body Posterior to the arm Covered by the Trapezius superiorly Contributes to the posterior wall of the axilla
<b>ACTION:</b>	Adducts, extends and rotates the Humerus medially Bringing the arm down in a power stroke <i>Examples:</i> Striking a blow, hammering, swimming and rowing
<b>ORIGIN:</b>	Lower Thoracic vertebrae spines Indirectly via fascia to the Lumbar and the Sacral vertebrae
<b>INSERTION:</b>	Humerus (floor of the intertubercular sulcus)

Muscle 17 GLUTEUS MAXIMUS Smaller Model on the Left	
<b>LOCATION:</b>	Forms the bulk of the buttock mass
<b>ACTION:</b>	Major extensor of the thigh
<b>ORIGIN:</b>	Dorsal ilium, sacrum and coccyx
<b>INSERTION:</b>	Femur (Gluteal tuberosity) Iliotibial Tract (IT)

Muscle 18 DELTOID Both Left and Right Full - Body models	
<b>LOCATION:</b>	Thick rounded muscle forming shoulder mass
<b>ACTIONS:</b>	Arm flexor Rotates arm medially Adducts arm When the Scapula is fixed, this muscle pulls the rib cage upwards Assists in throwing, pushing and forced inspiration
<b>ORIGINS:</b>	Surrounds the insertion of the Trapezius and the lateral third of the Clavicle Also: Scapula (acromion and spine)
<b>INSERTION:</b>	Humerus (deltoid tuberosity)

Number 23

Sheath of the Rectus Abdominis



**Muscle 19**  
**SERRATUS ANTERIOR**  
Large Model on the right

<b>LOCATION:</b>	Adjacent to the Thoracic wall
<b>ACTION:</b>	Abducts (protracts) the Scapula; Rotates the Scapula upwards while abducting the Arm Holds Scapula to the Chest wall
<b>ORIGIN:</b>	Anterior surfaces of the first 8 ribs
<b>INSERTION:</b>	Scapula: anterior surface and the medial border



**Muscle 20**  
**PECTORALIS MAJOR**  
Large Model on the right

<b>LOCATION:</b>	Chest; upper/axillary (anterior)
<b>ACTION:</b>	Arm flexion; medial rotation; Forced inspiration; Rib cage elevation
<b>ORIGIN:</b>	Clavicle and Sternum; Cartilages of Ribs 1 - 6
<b>INSERTION:</b>	Humerus (Greater Tubercle)



**Muscle 21**  
**EXTERNAL OBLIQUE**  
Large Model on the right

<b>LOCATION:</b>	Anterior and lateral abdominal wall
<b>ACTION:</b>	Flexes the vertebral column
<b>ORIGIN:</b>	Lower 8 Ribs
<b>INSERTION:</b>	Pubic Crest and the Iliac Crest



**Muscle 22**  
**RECTUS ABDOMINIS**  
Large Model on the right

<b>LOCATION:</b>	Extends from the Pubis to the Rib Cage; Ensheathed by Aponeuroses of the adjacent lateral muscles
<b>ACTION:</b>	Flex and Rotate the Lumbar region of the Vertebral Column; Increase intra-abdominal pressure; Used during sit-ups
<b>ORIGIN:</b>	Pubis (Crest and Symphysis)
<b>INSERTION:</b>	Xiphoid Process; Costal cartilages of Ribs 5 - 7



**Muscle 24**  
**TRICEPS BRACHII**  
Smaller Model on the Left

<b>LOCATION:</b>	Posterior compartment of the arm
<b>ACTION:</b>	Extends the arm at the shoulder Extends the forearm at the elbow
<b>ORIGIN:</b>	Three-headed at: Scapula (infraglenoid tubercle) Humerus
<b>INSERTION:</b>	By a common tendon to the Ulna (posterior process of olecranon)



**Muscle 25**  
**BICEPS BRACHII**  
Large Model on the right

<b>LOCATION:</b>	Arm ( <i>two heads</i> )
<b>ACTION:</b>	Flexes elbow joint; Rotates hand laterally
<b>ORIGIN:</b>	Scapula: <i>Short:</i> Coracoid process <i>Long:</i> Glenoid cavity
<b>INSERTION:</b>	Radius: Radial Tuberosity

**Muscle 26**  
**EXTENSOR CARPI RADIALIS LONGUS**  
Large Model on the right

<b>LOCATION:</b>	Lateral side of the Humerus
<b>ACTION:</b>	Extends and abducts hand at the wrist
<b>ORIGIN:</b>	Humerus (Lateral Epicondyle)
<b>INSERTION:</b>	Base of the 2nd Metacarpal (dorsal)

Muscle 27 EXTENSOR DIGITORUM Large Model on the right	
<b>LOCATION:</b>	Lateral side of the Humerus
<b>ACTION:</b>	Extends wrist and fingers; Middle Phalanx of fingers 2 - 5
<b>ORIGIN:</b>	Humerus (Lateral Epicondyle)
<b>INSERTION:</b>	Distal Phalanges 2-5

<b>Number 28</b>	Retinaculum extensorum (not shown)
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Muscle 29 EXTENSOR POLLICIS BREVIS Large Model on the right	
<b>LOCATION:</b>	Triangular in shape; Wraps around the lower Radius
<b>ACTION:</b>	Aids in abducting and extending the thumb
<b>ORIGIN:</b>	Radius (dorsal side)
<b>INSERTION:</b>	Proximal phalanx of the Thumb

**NEXT PAGE: QUADRICEPS GROUP**

Muscle 30 BRACHIORADIALIS Large Model on the right	
<b>LOCATION:</b>	Lateral region on the Lower Arm
<b>ACTION:</b>	Flexes the forearm at the elbow
<b>ORIGIN:</b>	<u>Humerus:</u> Lateral Supracondyle ridge
<b>INSERTION:</b>	Radius (Styloid Process)

Muscle 31 SARTORIUS Large Model on the right	
<b>LOCATION:</b>	Straplike; <i>Longest muscle in humans;</i> Runs obliquely across the anterior surface of the Thigh to the Knee
<b>ACTION:</b>	Flexes the Thigh, Flexes the Knee; Abducts, laterally Rotates the Thigh; Cross - legged position
<b>ORIGIN:</b>	Anterior Superior Iliac Spine
<b>INSERTION:</b>	Medial aspects of the Knee Medial aspect of the proximal Tibia



**Muscle 32**

**Quadriceps Group:**

**RECTUS FEMORIS**

Location, Action, Origin and Insertion are below.  
Large Model on the right

**Members of the Quadriceps group:**

Rectus Femoris (this box), Vastus medialis (next box), Vastus lateralis (shown but with no number or info box), and lastly, the Vastus intermedius. The *not-shown* Vastus intermedius is hidden behind the Rectus Femoris between the Vastus medialis and the Vastus lateralis on the anterior thigh.

<b>LOCATION:</b>	Part of the Quadriceps group; <u>Thigh:</u> anterior aspect
<b>ACTION:</b>	Flexes Thigh at the Hip; Extends Knee
<b>ORIGIN:</b>	Acetabulum: (superior margin); Anterior Inferior Iliac Spine
<b>INSERTION:</b>	Patellar and Tibial Tuberosity via the Patellar Ligament



**No Number**

**Quadriceps Group:**

**VASTUS MEDIALIS**

Location, Action, Origin and Insertion are below.  
Large Model on the right is identified but no number.

**Members of the Quadriceps group:**

Rectus Femoris (32), Vastus medialis (this box), Vastus lateralis (shown but with no number or info box), and lastly, the Vastus intermedius. The *not-shown* Vastus intermedius is hidden behind the Rectus Femoris between the Vastus medialis and the Vastus lateralis on the anterior thigh.

<b>LOCATION:</b>	Part of the Quadriceps group; <u>Thigh:</u> medial - region
<b>ACTION:</b>	Extends the Knee
<b>ORIGIN:</b>	Linea Aspera
<b>INSERTION:</b>	<i>Same as Rectus Femoris:</i> Patellar and Tibial Tuberosity via the Patellar Ligament



**Quadriceps Group:**


**VASTUS LATERALIS**


Location, Action, Origin and Insertion are below.  
Identified on the Large Model on the right  
(no number)


**Members of the Quadriceps group:**


Rectus Femoris (32), Vastus lateralis (below), Vastus medialis and the Vastus intermedius (intermedius is not labeled). The *not-shown* Vastus intermedius is hidden behind the Rectus Femoris between the Vastus medialis and the Vastus lateralis on the anterior thigh.


<b>LOCATION:</b>	Part of the Quadriceps group; <u>Thigh:</u> lateral - region
<b>ACTION:</b>	Extends and stabilizes the Knee
<b>ORIGIN:</b>	Femur (Greater Trochanter) Linea Aspera
<b>INSERTION:</b>	<i>Same as Rectus Femoris:</i> Patellar and Tibial Tuberosity via the Patellar Ligament

 <b>Muscle 33</b> <b>PECTINEAL</b> Large Model on the right	
<b>LOCATION:</b>	Short/flat; overlies adductor brevis
<b>ACTION:</b>	Adducts, flexes and medially rotates the Thigh
<b>ORIGIN:</b>	Pubis and Superior Ramus
<b>INSERTION:</b>	Femur (posterior aspect); Runs inferiorly from the Lesser Trochanter to the Linea Aspera

 <b>Muscle 36</b> <b>Hamstring Group:</b> <b>BICEPS FEMORIS</b> Smaller Model on the Left (36) <u>Members of the HAMSTRING group:</u> Biceps Femoris, Semitendinosus/us and the Semimembranosus/us (last is not labeled)	
<b>LOCATION:</b>	Most lateral muscle of the <i>hamstrings</i> group. This group also includes the Semitendinosus (37) and the Semimembranosus (not labeled)
<b>ACTIONS:</b>	Extends thighs Flexes knee Laterally rotates the leg, especially when the knee is flexed
<b>ORIGINS:</b>	<u>Long Head:</u> Ischial Tuberosity <u>Short Head:</u> Distal Femur and Linea Aspera
<b>INSERTION:</b>	A common tendon inserts into the Fibula (head) and the Tibia (lateral condyle)

 <b>Muscle 34</b> <b>GRACILIS</b> Large Model on the right	
<b>LOCATION:</b>	Long/thin on the Thigh (medial)
<b>ACTION:</b>	Adducts the Thigh; Flexes and Medially Rotates the Leg
<b>ORIGIN:</b>	Pubis (body and Inferior Ramus)
<b>INSERTION:</b>	Tibia (Medial surface) Inferior to the Medial Condyle

 <b>Muscle 37</b> <b>Hamstring Group:</b> <b>SEMITENDINOSIS/US</b> Smaller Model on the Left <u>Members of the HAMSTRING group:</u> Biceps Femoris, Semitendinosus/us and the Semimembranosus/us (last is not labeled)	
<b>LOCATION:</b>	Medial to the Biceps Femoris Long, slender tendon begins approximately two-thirds of the way down the thigh
<b>ACTION:</b>	Extends the thigh and flexes the knee Along with the Semimembranosus, medially rotates the leg
<b>ORIGIN:</b>	Ischial Tuberosity which is also shared with the long head of the Biceps Femoris
<b>INSERTION:</b>	Medial region of the upper tibial shaft

 <b>Muscle 35</b> <b>ADDUCTOR LONGUS</b> Large Model on the right	
<b>LOCATION:</b>	Medial aspect of the Thigh
<b>ACTION:</b>	Flexes the Thigh; Adducts the Thigh; <i>Medially</i> Rotates the Thigh
<b>ORIGIN:</b>	Pubis (near Pubis Symphysis)
<b>INSERTION:</b>	Linea Aspera

<b>Number 38</b>	Semimembranosus (not shown)
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**Muscle 39  
GASTROCNEMIUS  
Smaller Model on the Left**

<b>LOCATION:</b>	Posterior leg (calf) Superficial pair of bellies
<b>ACTION:</b>	Flexes the foot when the knee is extended Since it crosses the knee joint, it can flex the knee when the foot is dorsiflexed
<b>ORIGIN:</b>	By two heads from lateral and medial condyles of the Femur
<b>INSERTION:</b>	Posterior Calcaneous via the Calcaneal tendon



**Muscle 40  
SOLEUS  
Smaller Model on the Left**

<b>LOCATION:</b>	Flat, broad muscle of the calf just below the Gastrocnemius
<b>ACTION:</b>	Plantar flexes foot
<b>ORIGIN:</b>	Fibula and Tibia; Popliteal fascia
<b>INSERTION:</b>	Calcaneus by the Achilles tendon



**Tendon 41  
CALCANEAL TENDON  
(Achilles tendon)  
Smaller Model on the Left**

**This tendon is an extension of the Gastrocnemius and Soleus muscles. It is believed to be the thickest and strongest tendon in the human body and is approximately 6 inches in length. It is inserted into the middle part of the posterior region of the Calcaneous (heel bone).**



**No Number  
TENSOR FASCIA LATA  
Smaller Model on the Left**

<b>LOCATION:</b>	Anterolateral aspect of the thigh
<b>ACTION:</b>	Flexes, rotates the thigh medially
<b>ORIGIN:</b>	Anterior region of the Iliac crest and the anterior superior Iliac spine
<b>INSERTION:</b>	Iliotibial (IT) band of the Fascia Lata

**Muscle 42  
EXTENSOR DIGITORUM LONGUS  
Large Model on the right**

<b>LOCATION:</b>	Anterolateral surface of the Leg
<b>ACTION:</b>	Toe extension; dorsiflexes Foot
<b>ORIGIN:</b>	Tibia (Later Condyle); Fibula (Proximal Shaft)
<b>INSERTION:</b>	Middle/Distal Phalanges; Toes 2 - 5



**IT Grey Box, No Number  
"IT" ILIOTIBIAL TRACT (or band)  
Smaller Model on the Left**

**This is a thickened lateral portion of the Fascia Lata (fascia that ensheathes all the muscles of the thigh). Extends as a tendinous band from the iliac crest to the knee; Extension of the Tensor Fascia Lata muscle**