

Median Nerve

Sensory Distribution

Palmar side of thumb and first 2 1/2 fingers

Dorsal side of distal 2nd and 3rd finger

Innervated area is pink



Motor Distribution

Pronator teres
Flexor carpi radialis
Palmaris longus
Flexor digitorum superficialis
Flexor digitorum profundus - lateral half
Flexor pollicis longus
Pronator quadratus
First and Second Lumbrical muscles
Muscles of the Thenar Eminence

Nerve Path

Originates C5 to T1

Inferior to teres major

Between biceps brachii and brachialis

Through cubital fossa medial to brachial artery

Through pronator teres, deep to bicipital aponeurosis

Between flexor digitorum superficialis and flexor digitorum profundus

Under flexor retinaculum to thumb and first 2 1/2 fingers

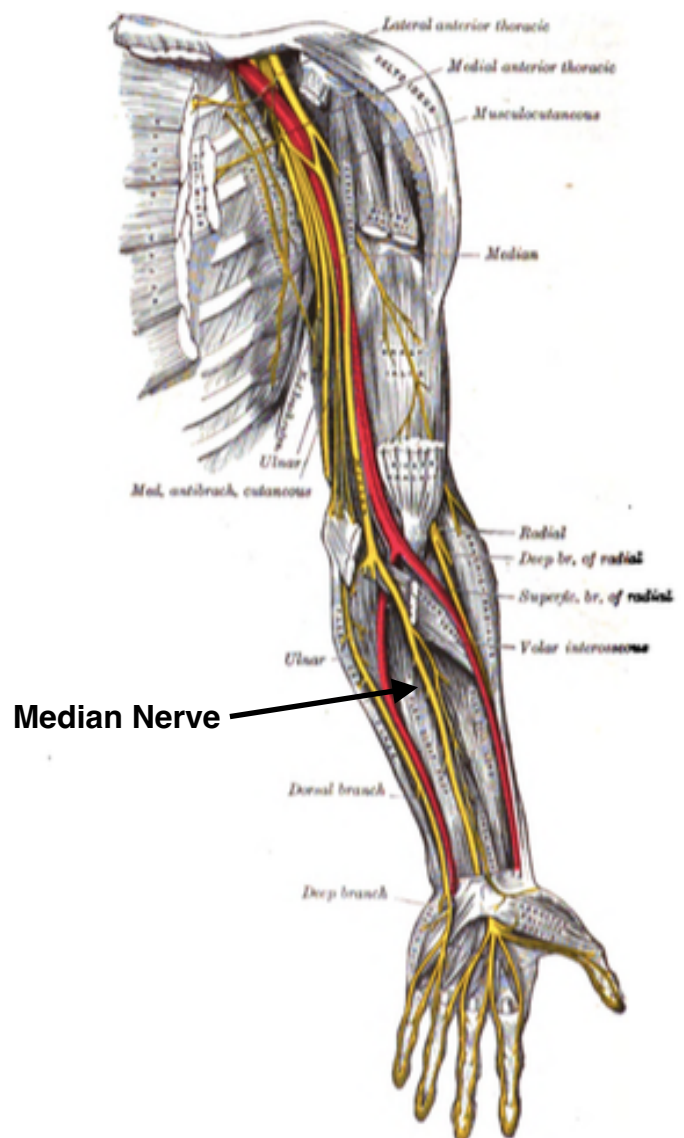


FIG. 816.—Nerves of the left upper extremity.

Median Nerve



Nerve Stretch

Head and Neck flexed and rotated away from affected side
Shoulder depressed
Elbow extended
Arm abducted to 90 degrees
Externally rotate arm, supinate forearm
Extend thumb, index and middle fingers while supinating wrist

Nerve Glides

Proximal

Head and neck flexed and rotated away
Elbow, wrist and fingers flexed

Distal

Head and neck back to midline
Elbow, wrist and fingers extended

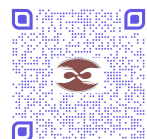
Impingement Areas

Nerve Roots C5 - T1
Scalenes
First Rib and Clavicle
Pectoralis minor
Bicipital Aponeurosis
Pronator teres
Flexor Retinaculum

Cup Placement

Medial side of Biceps brachii
Pronator teres
Wrist and Finger Flexors
Flexor Retinaculum
Palm

Videos of nerve glide techniques are at <https://bit.ly/nerveglide>



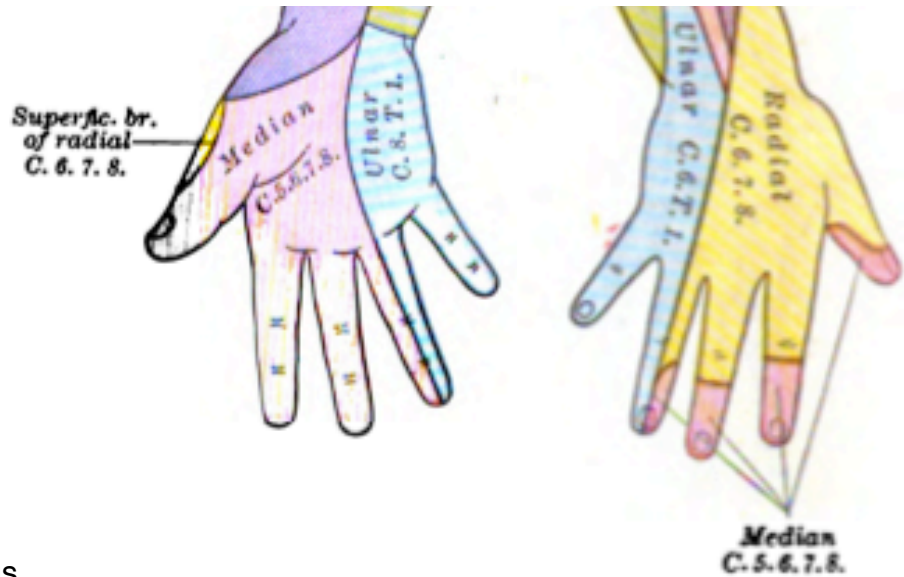
Ulnar Nerve

Sensory Distribution

Palmar and dorsal side of little finger and adjacent side of ring finger

Lateral side of the hand, both palmar and dorsal sides

Innervated area is blue



Motor Distribution

Flexor carpi ulnaris
Flexor digitorum profundus
Opponens digiti minimi
Abductor digiti minimi
Flexor digiti minimi brevis
3rd and 4th lumbrical muscles
Dorsal interossei
Adductor pollicis
Flexor pollicis brevis
Palmaris brevis

Nerve Path

C7 - T1 nerve roots
under coracobrachialis
posterior compartment of arm
posteromedial aspect of humerus
behind medial epicondyle (cubital tunnel)
between two heads of flexor carpi ulnaris
between flexor carpi ulnaris and flexor digitorum superficialis
Guyon's canal - superficial to flexor retinaculum and lateral to the pisiform bone

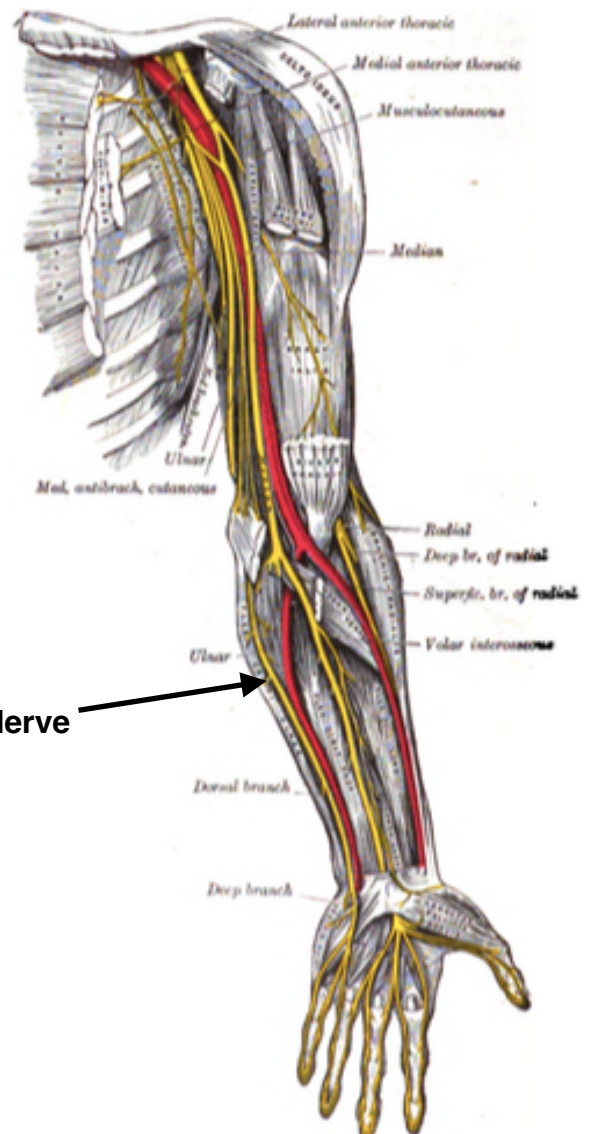


FIG. 816.—Nerve of the left upper extremity.

Ulnar Nerve



Nerve Stretch

Head and Neck flexed and rotated away from affected side
Shoulder depressed
Arm abducted to 90 degrees
Elbow flexed
Forearm pronated
Wrist extended and radial deviated
Fingers extended

Nerve Glides

Proximal

Head and neck flexed and rotated away
Decrease elbow flexion, wrist extension

Distal

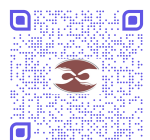
Head and neck back to midline
Increase elbow flexion, wrist extension

Impingement Areas

Nerve Roots C8 - T1
Scalenes
First Rib and Clavicle
Pectoralis minor
Posterior medial aspect of humerus
Cubital tunnel
Flexor carpi ulnaris
Between flexor digitorum superficialis and flexor digitorum profundus
Guyon's canal

Cup Placement

Proximal to cubital tunnel
Over flexor carpi ulnaris
Proximal to Guyon's canal



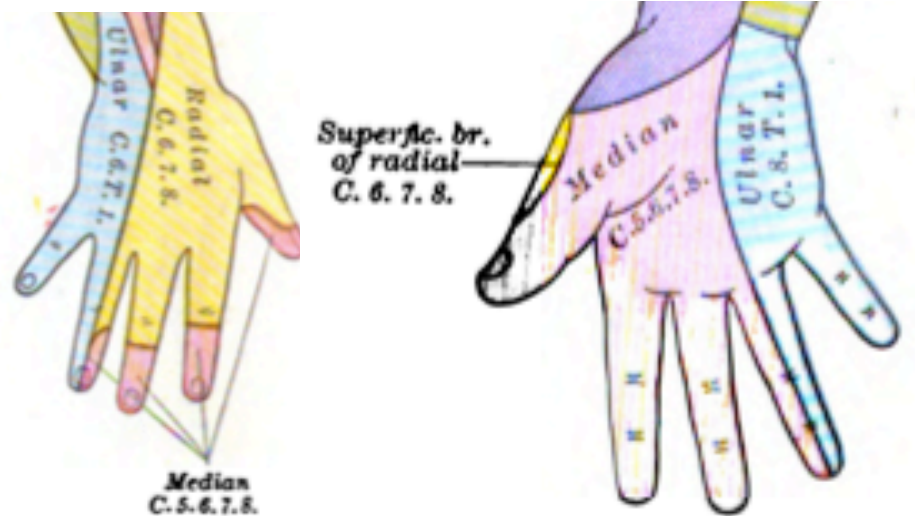
Radial Nerve

Sensory Distribution

Dorsal aspect of the radial side of the hand.

Dorsal aspect of the thumb, and proximal index and middle fingers.

Innervated area is yellow



Motor Distribution

Triceps brachii
Anconeus
Brachioradialis
Supinator
Wrist and finger extensors
Abductor pollicis longus

Nerve Path

C5 - T1

Between lateral and medial heads of Triceps brachii

Crosses lateral epicondyle of Humerus

Superficial branch under Brachioradialis

Deep branch pierces Supinator muscle

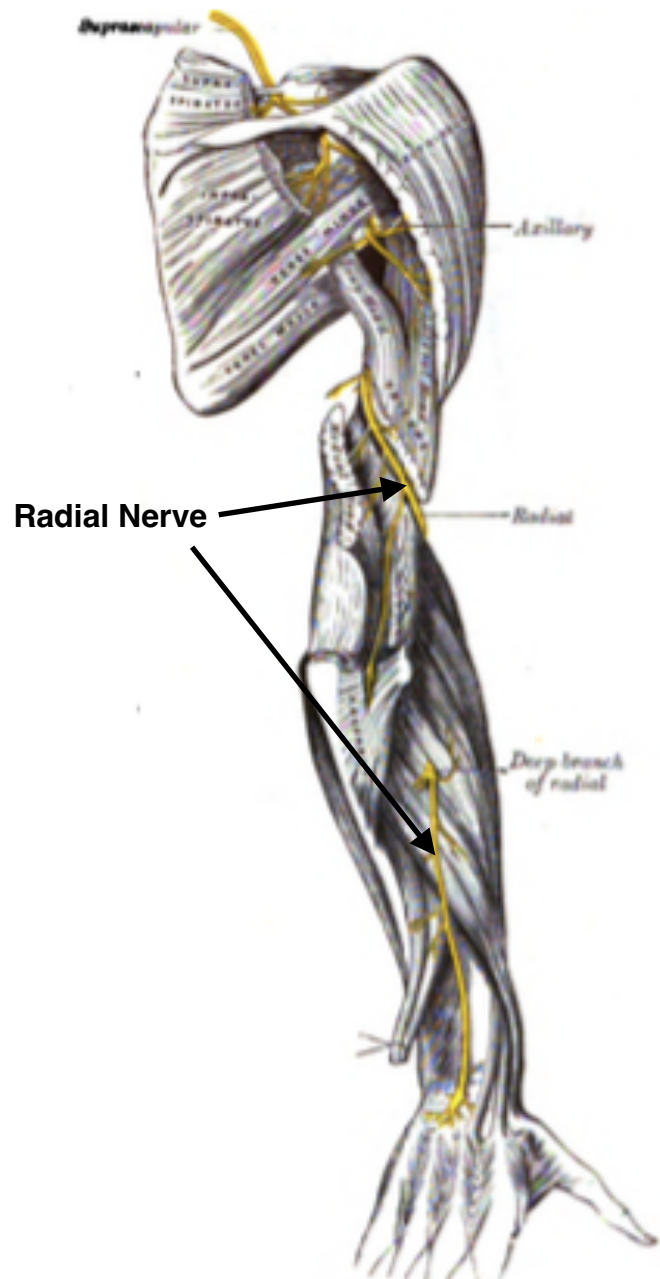


FIG. 818.—The suprascapular, axillary, and radial nerves.

Radial Nerve



Nerve Stretch

Head and Neck flexed and rotated away from affected side
Shoulder depressed
Humerus internally rotated
Elbow extended
Forearm pronated
Wrist and fingers flexed
Wrist deviated to ulnar side

Nerve Glides

Proximal

Head and neck flexed and rotated away
Decrease wrist flexion, forearm pronation

Distal

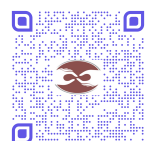
Head and neck back to midline
Increase wrist flexion, forearm pronation

Impingement Areas

Nerve Roots C8 - T1
Scalenes
First Rib and Clavicle
Pectoralis minor
Triceps
Supinator
Extensors

Cup Placement

Triceps
Supinator
Wrist and finger extensors



Sciatic Nerve

Sensory Distribution

Calf - except for medial side

Skin of the foot - except for medial side

Motor Distribution

Hamstrings

Adductor Magnus (partial)

Tibial n. - muscles in the posterior compartment of leg and sole of the foot

Common Peroneal n. - muscles in the anterior and lateral compartments of the calf

Nerve Path

L4 to S3

Greater Sciatic notch

Under Piriformis muscle

Over other deep 6 muscles

Between Adductor magnus and Biceps femoris

Splits in two at Popliteal fossa
Tibial nerve
Common Peroneal nerve

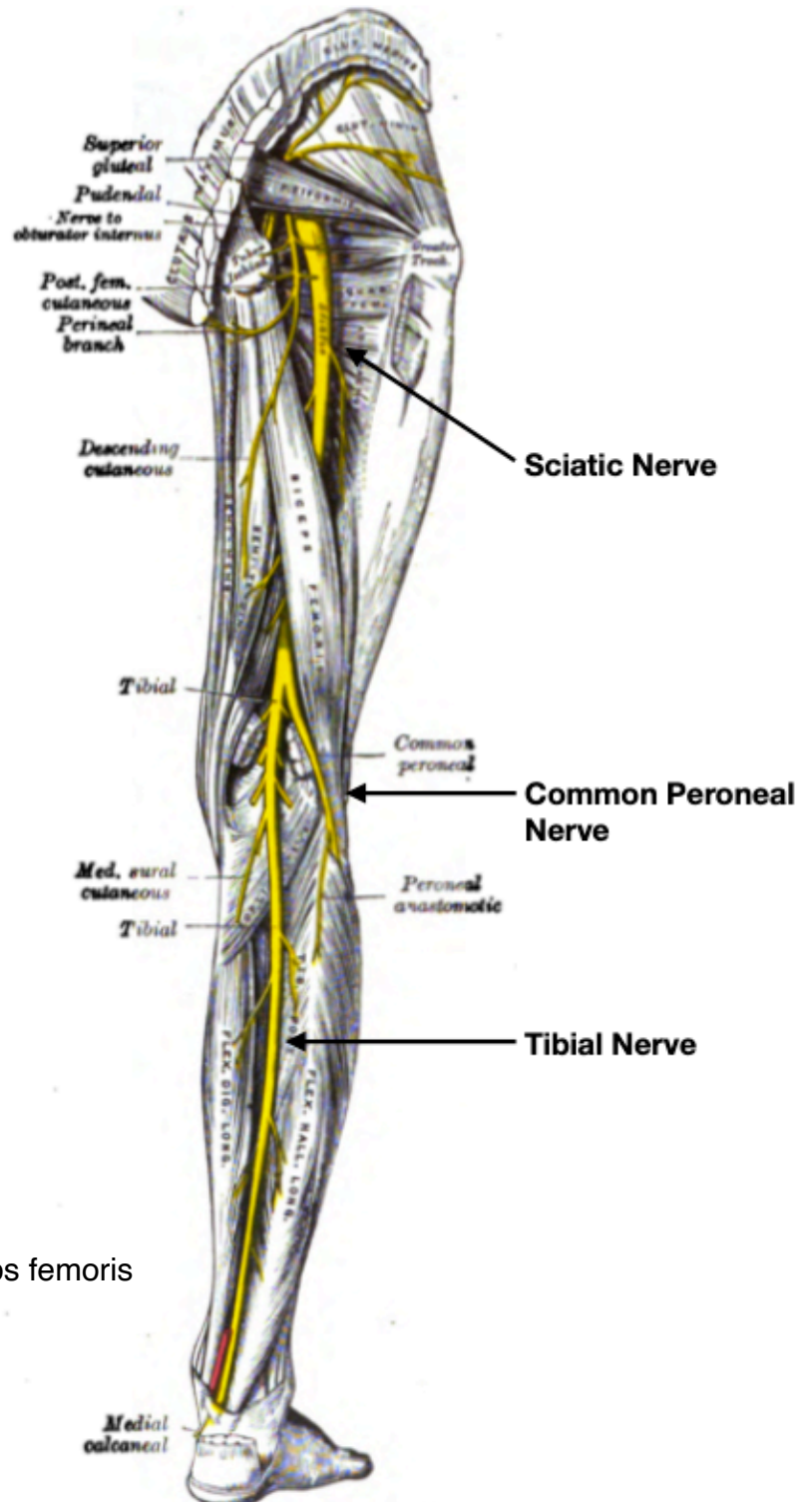


FIG. 832.—Nerves of the right lower extremity
Posterior view.

Sciatic Nerve



Nerve Stretch

Hip and knee flexed

Slowly extend knee and dorsiflex ankle.

Client tucks chin

Nerve Glides

Proximal

Client tucks chin,
therapist allows knee to flex and
ankle to plantarflex.

Distal

Client release chin tuck,
therapist extends knee and
dorsiflexes ankle

Impingement Areas

Foramen - L4 to S3

Piriformis

Quadratus femoris

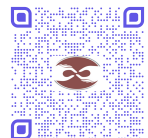
Long head of Biceps femoris

Cup Placement

Over piriformis, deep 6 muscles

Over biceps femoris

Videos of nerve glide techniques are at <https://bit.ly/nerveglide>



Sciatic Nerve

Sensory Distribution

Calf - except for medial side

Skin of the foot - except for medial side

Motor Distribution

Hamstrings

Adductor Magnus (partial)

Tibial n. - muscles in the posterior compartment of leg and sole of the foot

Common Peroneal n. - muscles in the anterior and lateral compartments of the calf

Nerve Path

L4 to S3

Greater Sciatic notch

Under Piriformis muscle

Over other deep 6 muscles

Between Adductor magnus and Biceps femoris

Splits in two at Popliteal fossa
Tibial nerve
Common Peroneal nerve

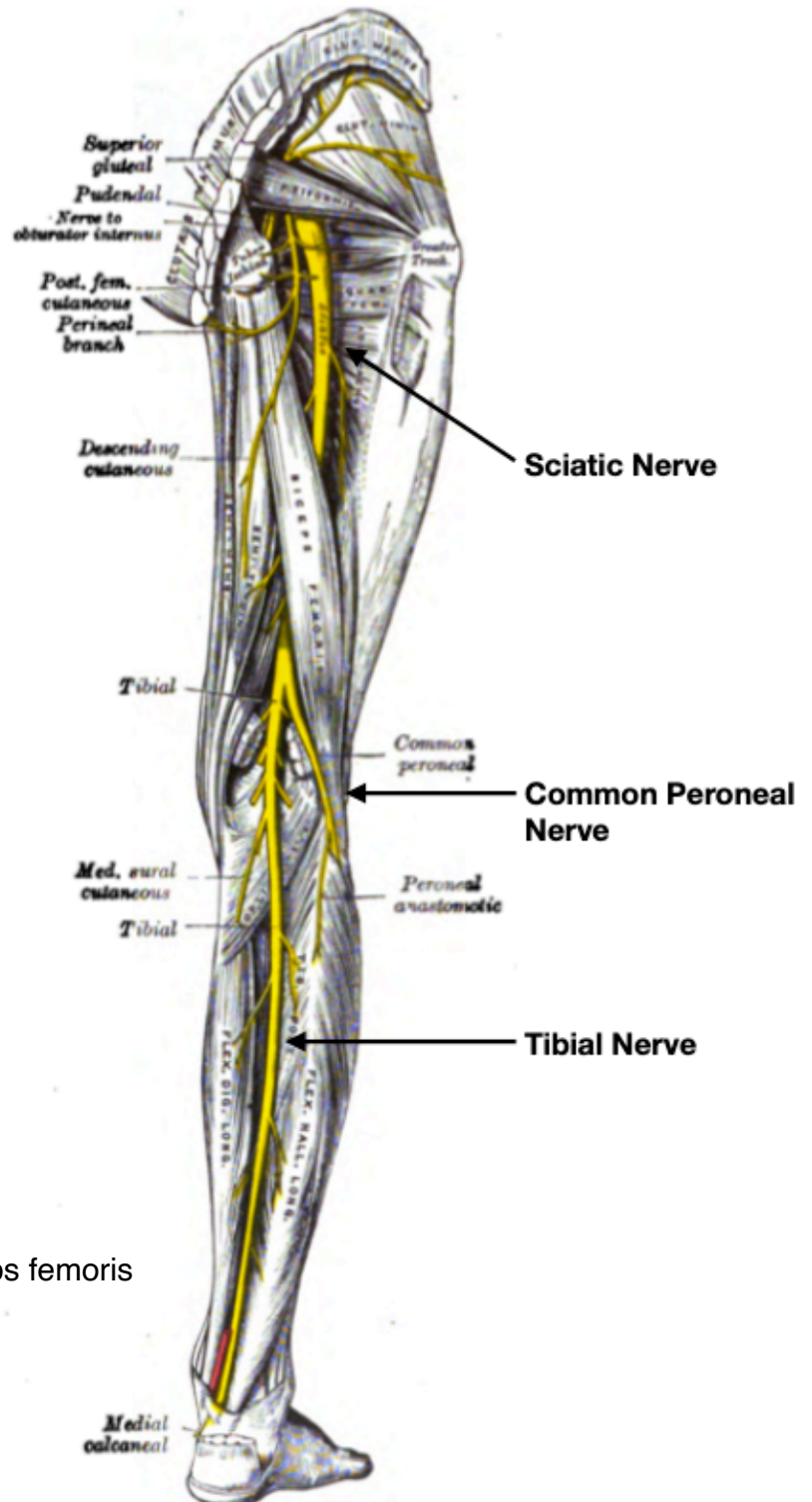


FIG. 832.—Nerves of the right lower extremity
Posterior view.

Sciatic Nerve - Sitting



Nerve Glide - Proximal

Client tucks chin and slumps
Therapist plantarflexes ankle



Nerve Glide - Distal

Client releases chin tuck, sits up straight
Therapist dorsiflexes ankle

Nerve Stretch

Client sitting, hands clasped behind back
Client flexes neck
Client flexes trunk if pain free
Client dorsiflexes ankle
Client extends knee

For a Deeper Stretch

Medial rotation and adduction of femur
Contralateral lateral flexion of the spine

Impingement Areas

Foramen - L4 to S3

Piriformis

Quadratus femoris

Long head of Biceps femoris

Tibial and Peroneal Nerves

Sensory Distribution - Tibial Nerve

Skin of the lower half of the back of the calf and the lateral border of the foot to the tip of the little toe.

Tibial Nerve Stretch

Add eversion and pronation of the foot

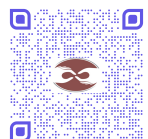
Sensory Distribution - Peroneal Nerve

Skin of the upper third of the lateral aspect of the calf.

Peroneal Nerve Stretch

Add inversion and supination of the foot

Videos of nerve glide techniques are at <https://bit.ly/nerveglide>



Tibial and Peroneal Nerves

Nerve Path - Tibial Nerve

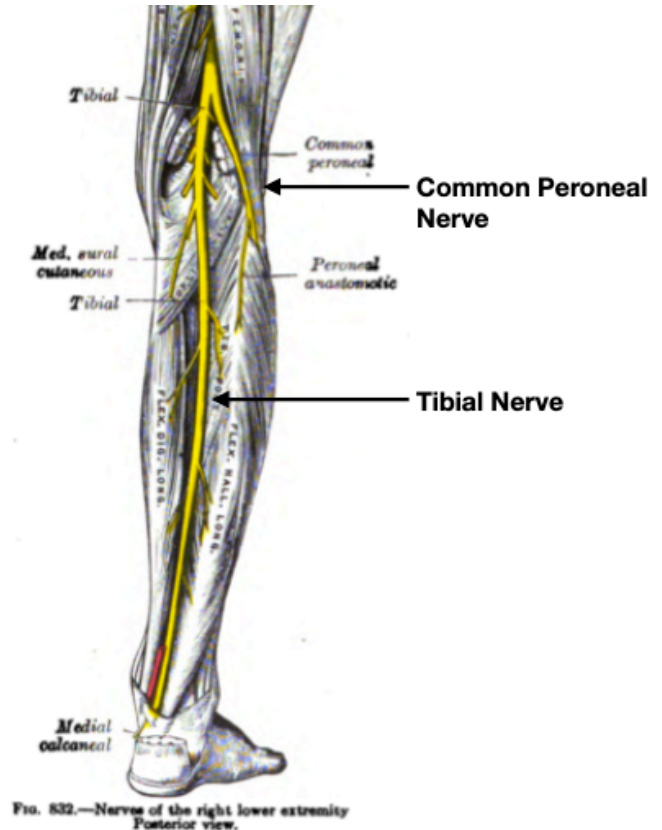
The Tibial nerve goes deep to the tendinous arch of the soleus then around the medial malleolus to become medial and lateral plantar nerves.

Sensory Distribution - Tibial Nerve

Skin of the lower half of the back of the calf and the lateral border of the foot to the tip of the little toe.

Motor Distribution - Tibial Nerve

Gastrocnemius, Soleus, Plantaris and Popliteal muscles. Also Tibialis posterior, Flexor digitorum longus, and Flexor Hallicis longus.



Nerve Path - Peroneal Nerve

The Peroneal nerve passes through the proximal part of peroneus longus and goes down the front of the calf.

Sensory Distribution - Peroneal Nerve

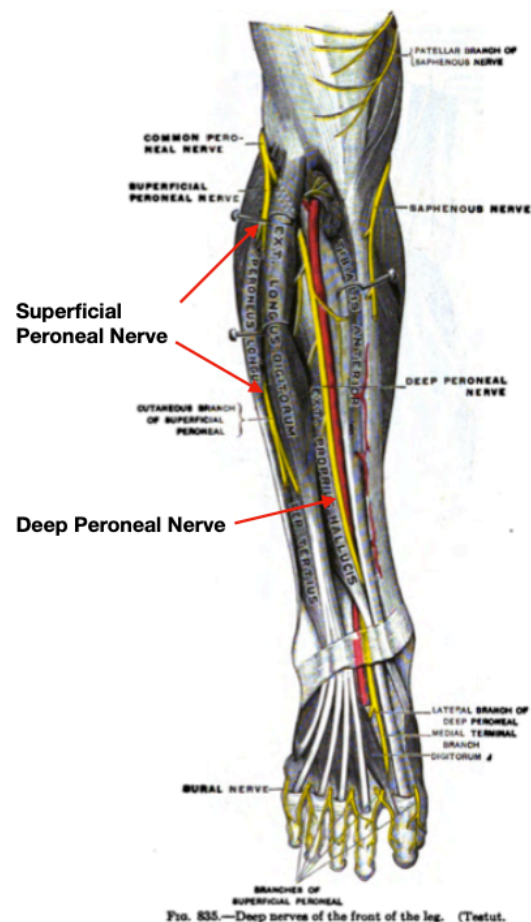
Skin of the upper third of the lateral aspect of the calf.

Motor Distribution - Peroneal Nerve

Common Peroneal nerve - short head of biceps femoris

Superficial Peroneal nerve - Peroneus longus and Peroneus brevis.

Deep Peroneal nerve - Tibialis anterior, Extensor digitorum longus, Extensor hallucis longus.



Tibial and Peroneal Nerves



Tibial Nerve Stretch

Nerve Stretch - Tibial Nerve

Hip flexed, knee extended, ankle dorsiflexed.

Foot pronation
(eversion, abduction, and dorsiflexion)

Nerve Glide - Tibial Nerve

Proximal

client tucks chin as therapist flexes knee.

Distal

release chin tuck, extend knee, dorsiflex and evert ankle

Impingement Areas - Tibial Nerve

Tendinous Arch of Soleus
Tarsal Tunnel

Cup Placement - Tibial Nerve

over piriformis
proximal and distal to popliteal fossa
over gastrocnemius



Peroneal Nerve Stretch

Nerve Stretch - Peroneal Nerve

Hip flexed, knee extended, ankle dorsiflexed.

Foot supination
(inversion, adduction, and plantarflexion)

Nerve Glide - Peroneal Nerve

Proximal

client tucks chin as therapist flexes knee.

Distal

release chin tuck, extend knee, dorsiflex and invert ankle

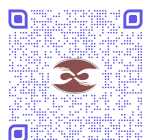
Impingement Areas - Peroneal Nerve

Distal Biceps Femoris
Proximal Peroneus Longus

Cup Placement - Peroneal Nerve

over piriformis
proximal and distal to popliteal fossa
over proximal peroneus

Videos of nerve glide techniques are at <https://bit.ly/nerveglide>



Obturator Nerve

Sensory Distribution

Skin on the medial aspect of the thigh

Motor Distribution

Adductors except Pectineus (femoral nerve)

Nerve Path

From L2 - L4 nerves
through Psoas major
through Obturator foramen

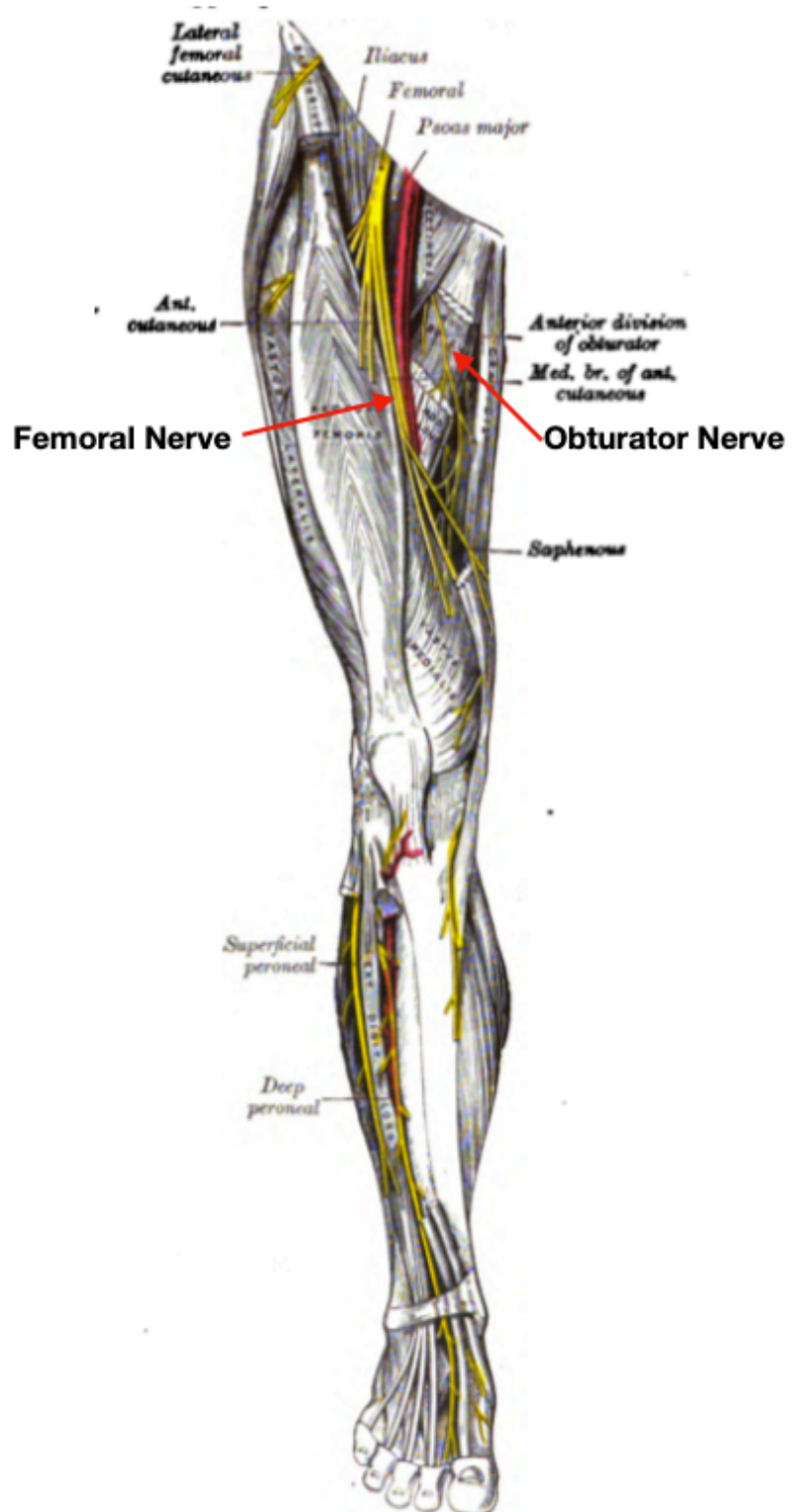


FIG. 827.—Nerves of the right lower extremity. Front view.

Obturator Nerve



Nerve Tensioning

Neck flexed
Femur abducted

Nerve Glides

Distal

Neck extended
Femur abducted

Proximal

Neck flexed
Femur adducted

Impingement Areas

Psoas major
Femoral triangle

Cup Placement

Over adductor muscles
Do not place cups over the femoral triangle!

Videos of nerve glide techniques are at <https://bit.ly/nerveglide>



Femoral Nerve

Sensory Distribution

The skin on the upper thigh

The medial side of the calf and foot
(Saphenous nerve)

Motor Distribution

Quadriceps
Pectineus
Sartorius

Nerve Path

Originates on the ventral rami of L2, 3, & 4 nerves

Goes in between Psoas and Iliacus

Passes under Inguinal ligament lateral to Femoral artery

Goes under Rectus femoris on the medial side

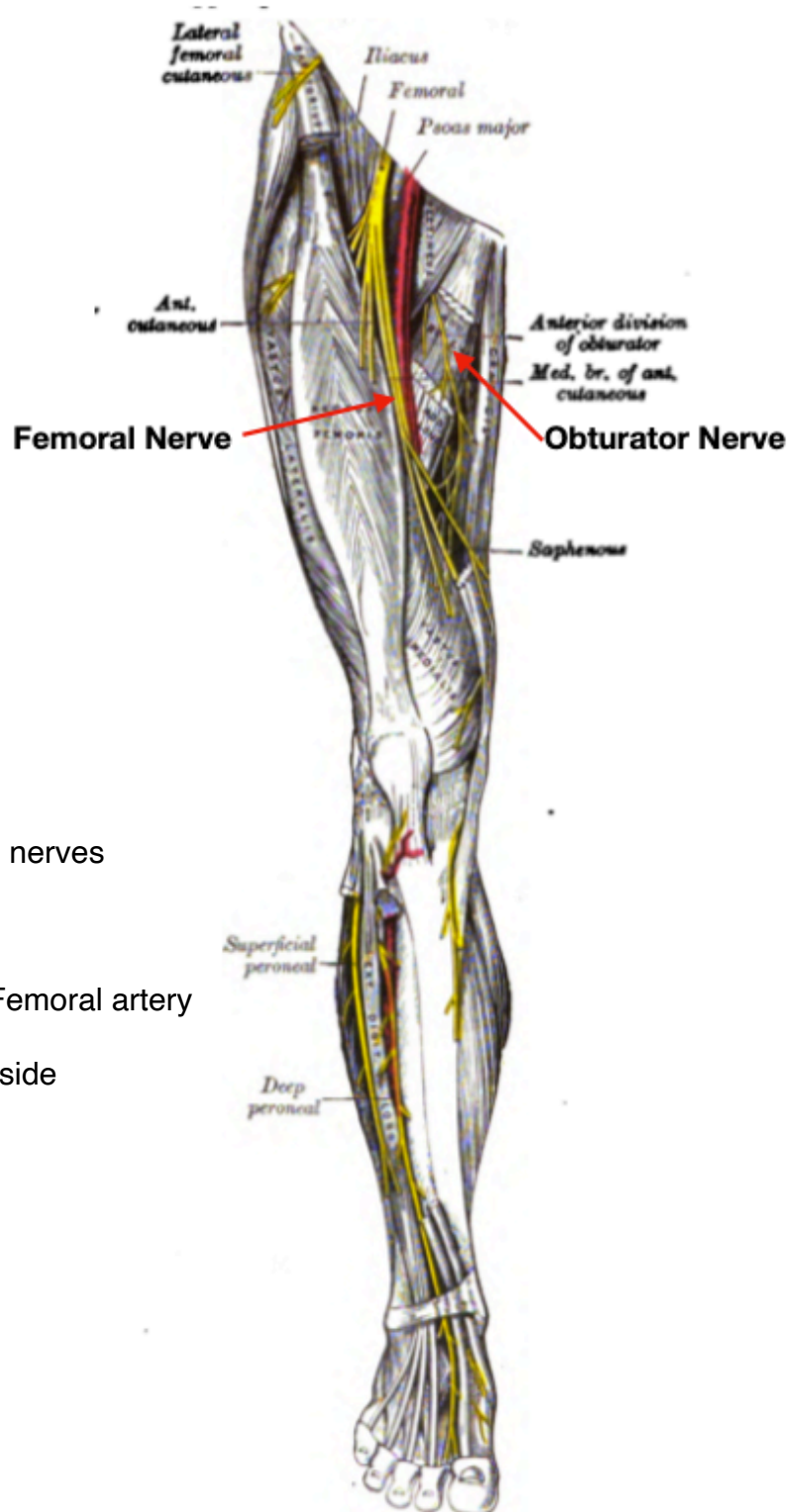


FIG. 827.—Nerves of the right lower extremity. Front view.

Femoral Nerve



Nerve Stretch

Hip extended, knee flexed.
Chin tucked.
Bottom knee toward chest.

Alternate Stretch

Client in Cobra position
Neck Extension, Knee Flexion

Impingement Areas

Foramen of Lumbar Vertebrae
Between iliacus and Psoas
Sartorius, Gracilis
Rectus Femoris

Nerve Glides

Proximal

Chin tuck, back off of knee flexion

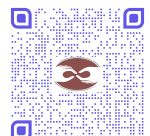
Distal

Release chin tuck, flex knee

Cup Placement

Medial side of Rectus femoris

Videos of nerve glide techniques are at <https://bit.ly/nerveglide>



Lateral Femoral Cutaneous Nerve

Meralgia Paresthetica

Sensory Distribution

The skin on the lateral thigh

Symptoms

Pain, tingling, numbness, burning in lateral thigh, pocket area

Motor Distribution

This is a sensory nerve, so there is no motor distribution.

Nerve Path

L2 - L3 nerve roots

In between Psoas and Iliacus toward ASIS

Under inguinal ligament and over Sartorius

Divides into two branches

Anterior branch superficial 10 cm below inguinal ligament to skin of anterior and lateral thigh

Posterior branch pierces fascia lata to lateral and posterior thigh

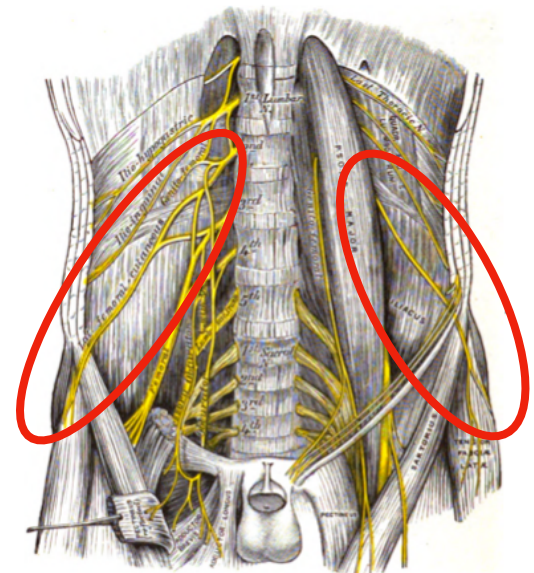
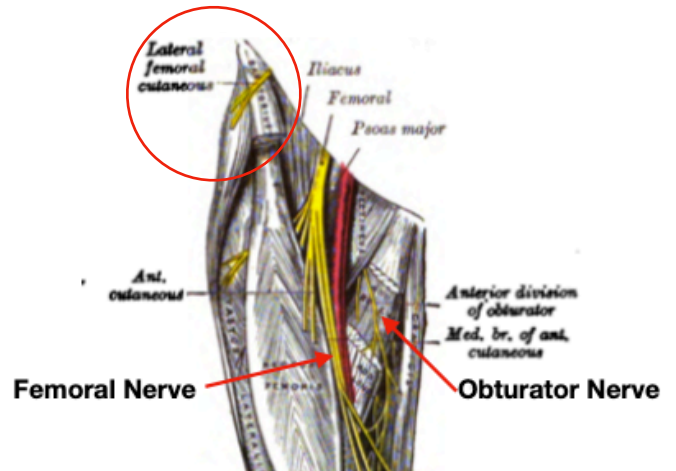
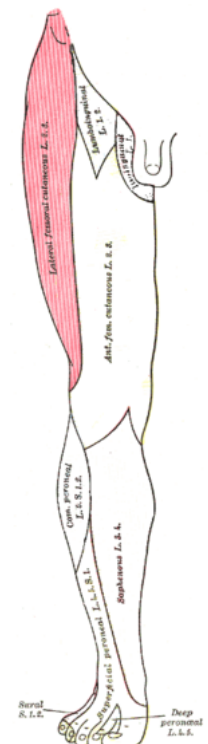


FIG. 823.—The lumbar plexus and its branches.



Lateral Femoral Cutaneous Nerve

Meralgia Paresthetica



Assessment

Pelvic compression test

Client sidelying, hip and knee flexed

Press and hold on the crest of the ilium

This relaxes the inguinal ligament and will cause a reduction in symptoms

Nerve Glides

Proximal

head down, knee extended

Distal

head up, knee flexed

Nerve Tensioning

head down, knee flexed

Impingement Areas

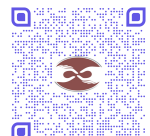
Foramen of Lumbar Vertebrae
Between Iliacus and Psoas
Inguinal Ligament at ASIS
Sartorius

Cup Placement

Inguinal ligament near ASIS
Sartorius

Do not put cups over femoral triangle!

Videos of nerve glide techniques are at <https://bit.ly/nerveglide>



Cluneal Nerves

Sensory Distribution

Low back (lateral to spine)
Buttock area
May radiate to lower extremity

Pain may be mistaken for sciatic pain

Nerve Path

L2 - S1 nerve roots

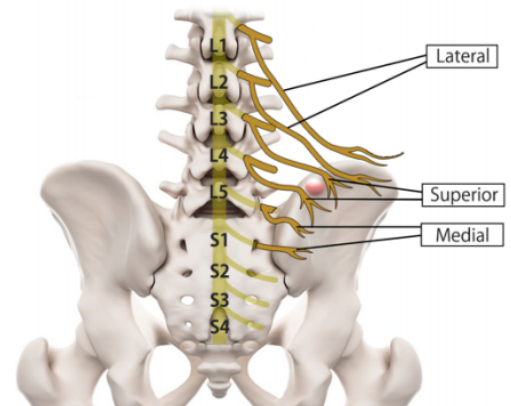
Over iliac crest to buttock area

Impingement Areas

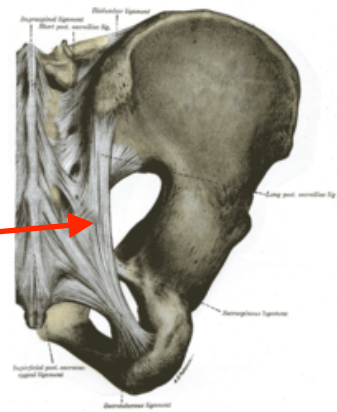
In between thoracolumbar fascia and iliac crest

Middle cluneal nerve passes under
long posterior sacroiliac ligament

Anatomy of Cluneal Nerves



L1, L2, Lateral Cluneal Nerves
L3, L4 Superior Cluneal Nerves
L5 & S1 Medial Nerves

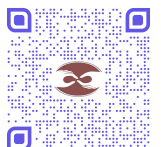


Cupping in child's pose

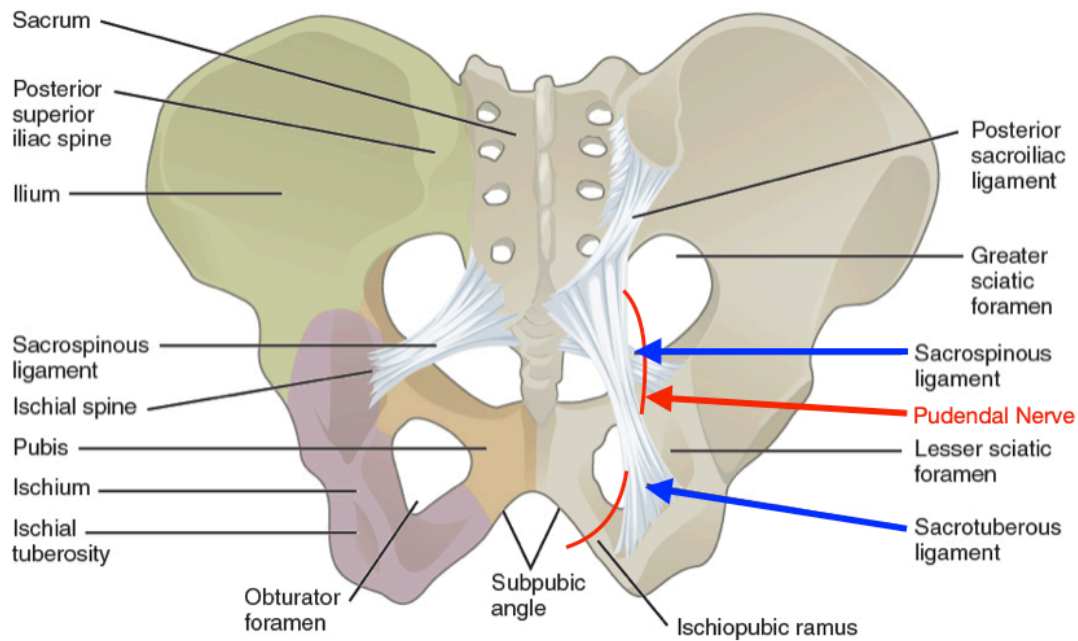


Skin rolling or cupping with lumbar extension
or cat cow movement

Videos of nerve glide techniques are at <https://bit.ly/nerveglide>



Pudendal Nerve



Sensory Distribution

External Genitalia (male and female)
Skin around anus and perineum

Impingement Areas

In between sacrospinous and sacrotuberous ligaments

Nerve Path

S2 - S4 nerve roots
Through greater sciatic foramen
Over sacrospinous ligament
Under sacrotuberous ligament
Through lesser sciatic foramen

Pudendal Neuralgia Symptoms

Painful Sitting
Genital Pain
Perineal Pain
Rectal Pain
Painful Sex
Dull Ache
Burning

Treatment

Opposite side - place thumbs under medial side of the sacrotuberous ligament then lift and traction the ligament lateral and superior.

Same side - hook fingers around the medial side of the sacrotuberous ligament and pull laterally while rocking the sacrum.



Videos of nerve glide techniques are at <https://bit.ly/nerveglide>

