

# **Neuroanatomic Point Protocols for Treatment of Joint & Spine Pain**

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# **Pilot Study Results- Metal vs Laser Needles for Shoulder and Knee Pain**

- **30 subjects with refractory joint pain due to severe degenerative changes including post traumatic**
- **failed standard treatment**
- **prior treatment with metal needle acupuncture**
- **Pre-treatment VAS pain 8+/10**

# Bilateral Shoulder Rotator Cuff Complete Tears with Osteoarthritis



Right

Left



WB

# Shoulder Osteoarthritis



EB

# Post-Fracture Osteoarthritis

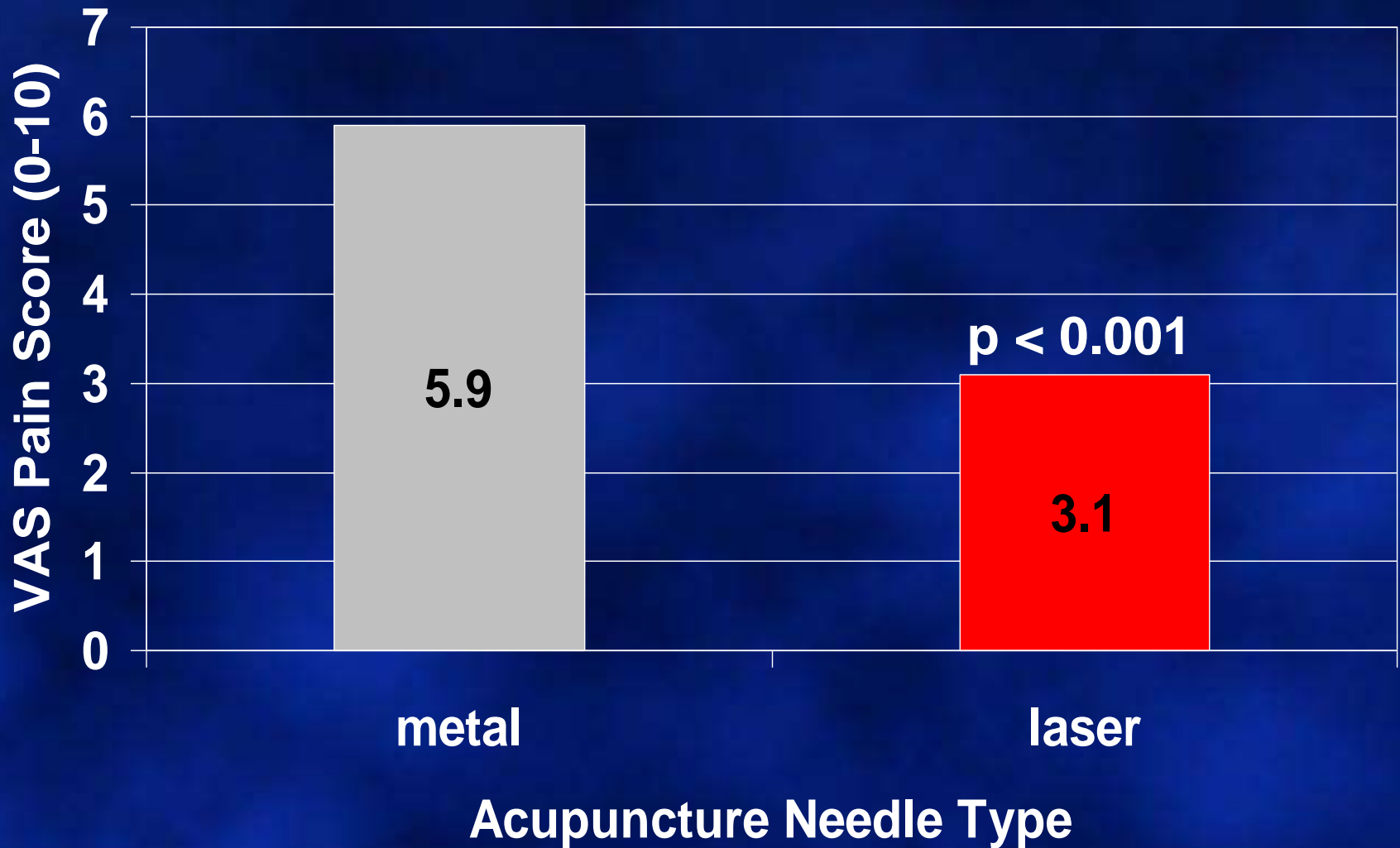


EG

# Bilateral Knee Osteoarthritis



# Results: Knee & Shoulder Arthritis



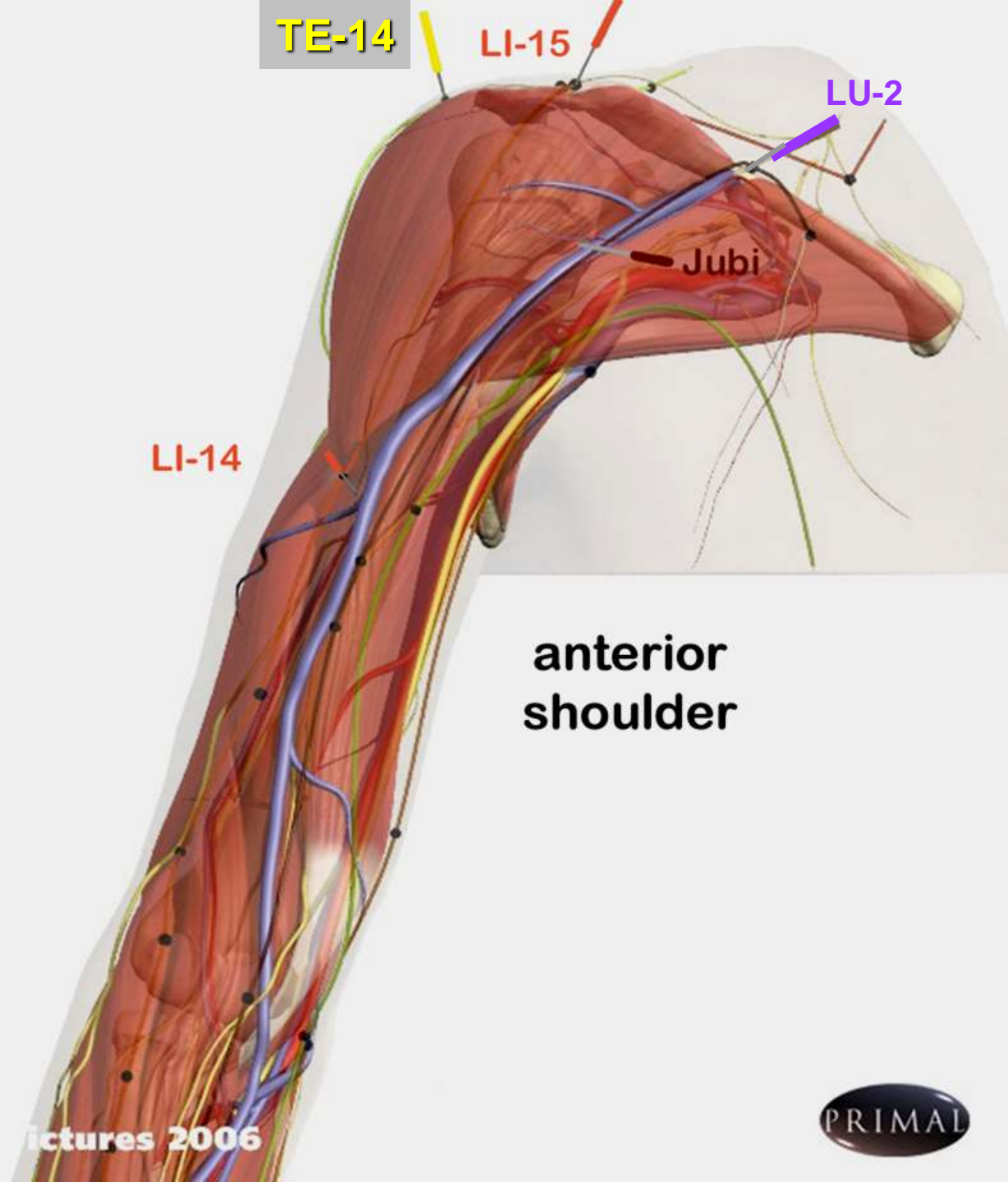
# Shoulder Points to Treat Joint Pain

The Answers (Points) First

*Treat the Nerves to Treat the Pain!*

# Shoulder Acupoint Selections

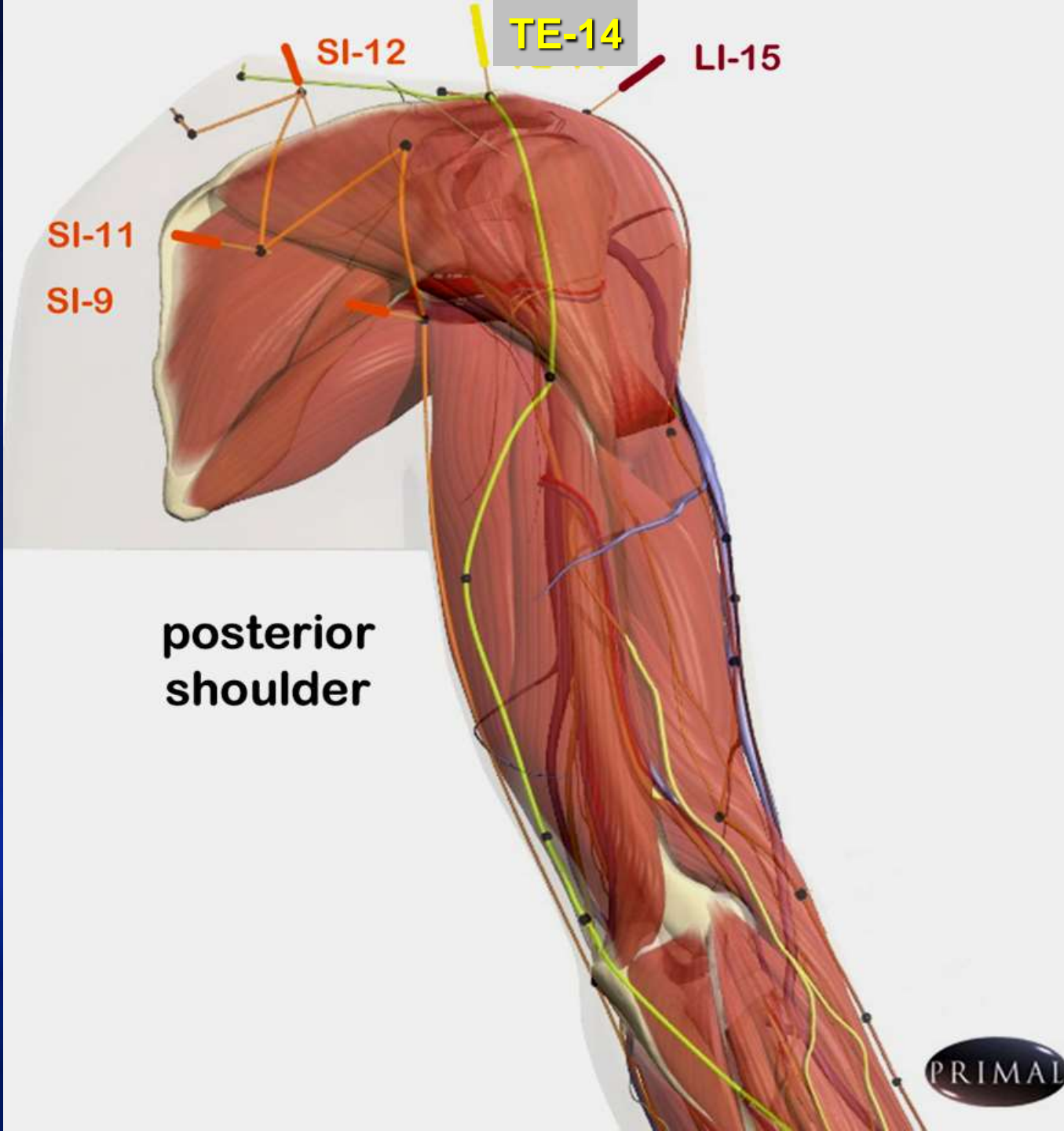
LU-2  
Jubi  
LI-14  
LI-15





# Shoulder Acupoint Selections

**SI-9**  
**SI-11**  
**SI-12**  
**TE-14**



# Why These Points?

*Neuroanatomic Basis*

# Shoulder Joint Innervation

- lateral pectoral nerve- anterior
- suprascapular nerve- posterior
- axillary nerve- inferior

# Lateral Pectoral Nerve

- innervates anterior capsule of shoulder
- one branch crosses the coracoid before the innervation of the pectoralis muscles
- a second small branch originates directly on the origin of the biceps and coracobrachialis muscles
- A third branch arises in the loose fat accompanying the vessels, superficial to the coracoid process

lateral pectoral nerve

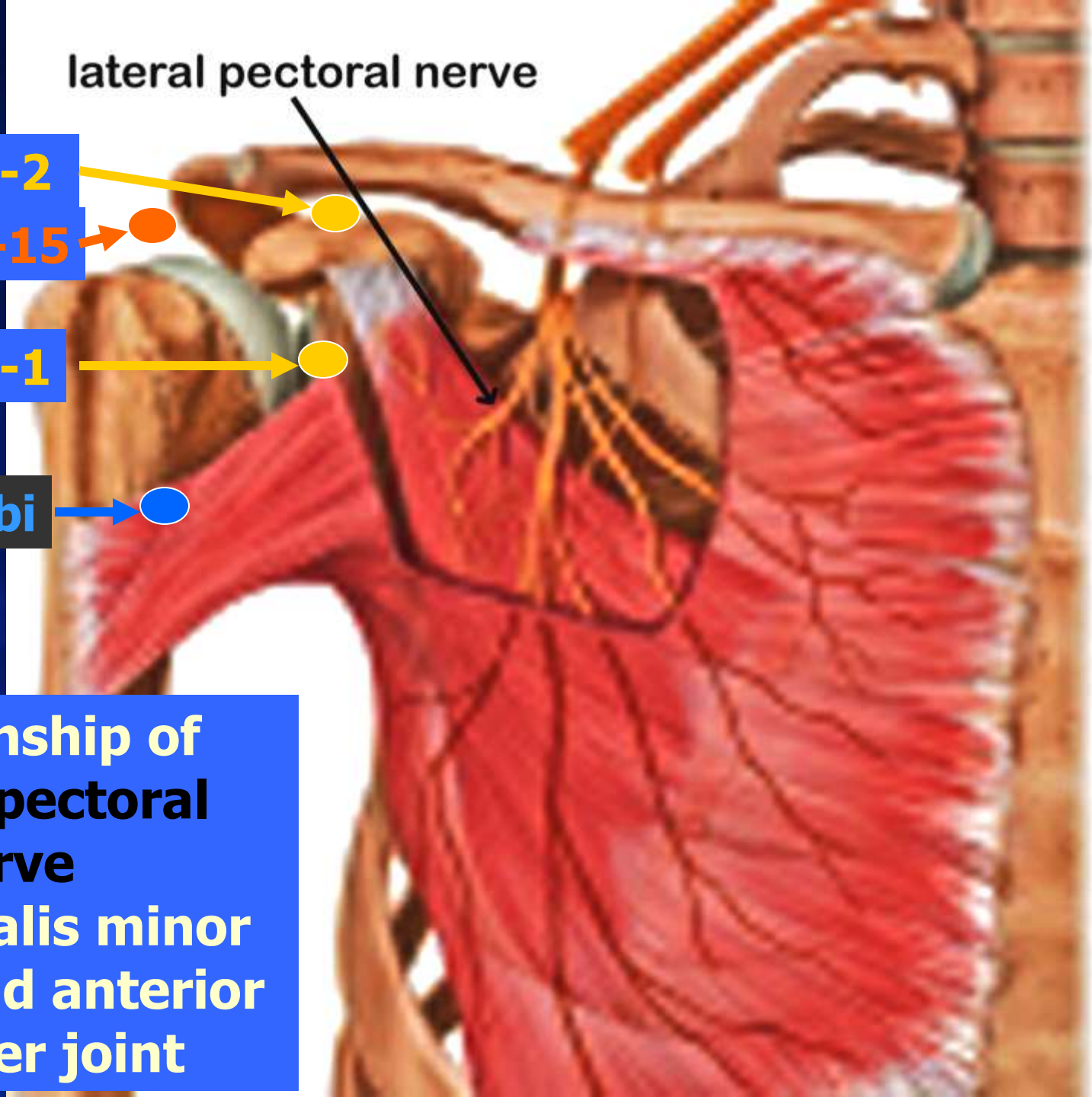
LU-2

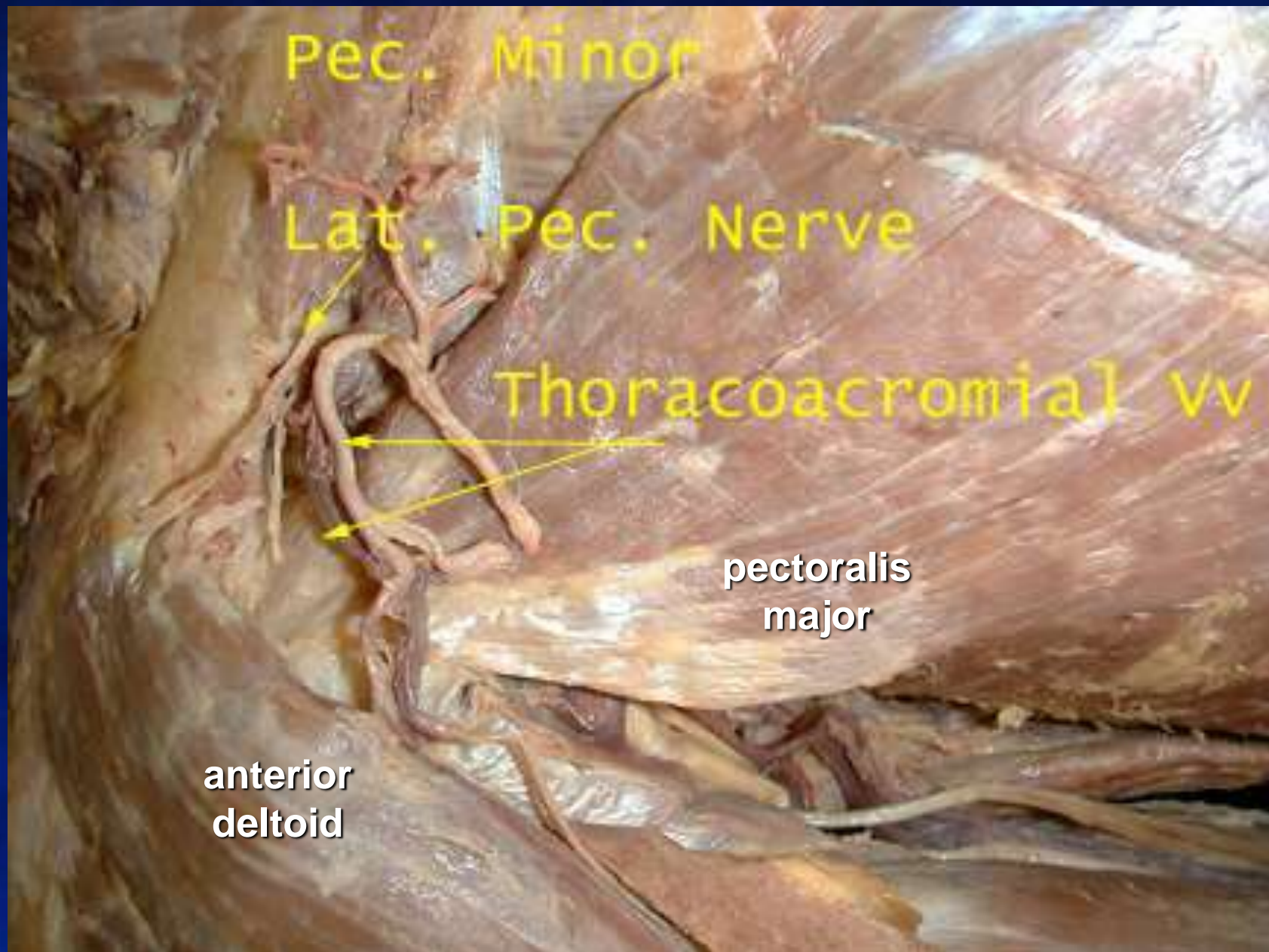
LI-15

LU-1

Jubi

**Relationship of  
lateral pectoral  
nerve  
to pectoralis minor  
muscle and anterior  
shoulder joint**





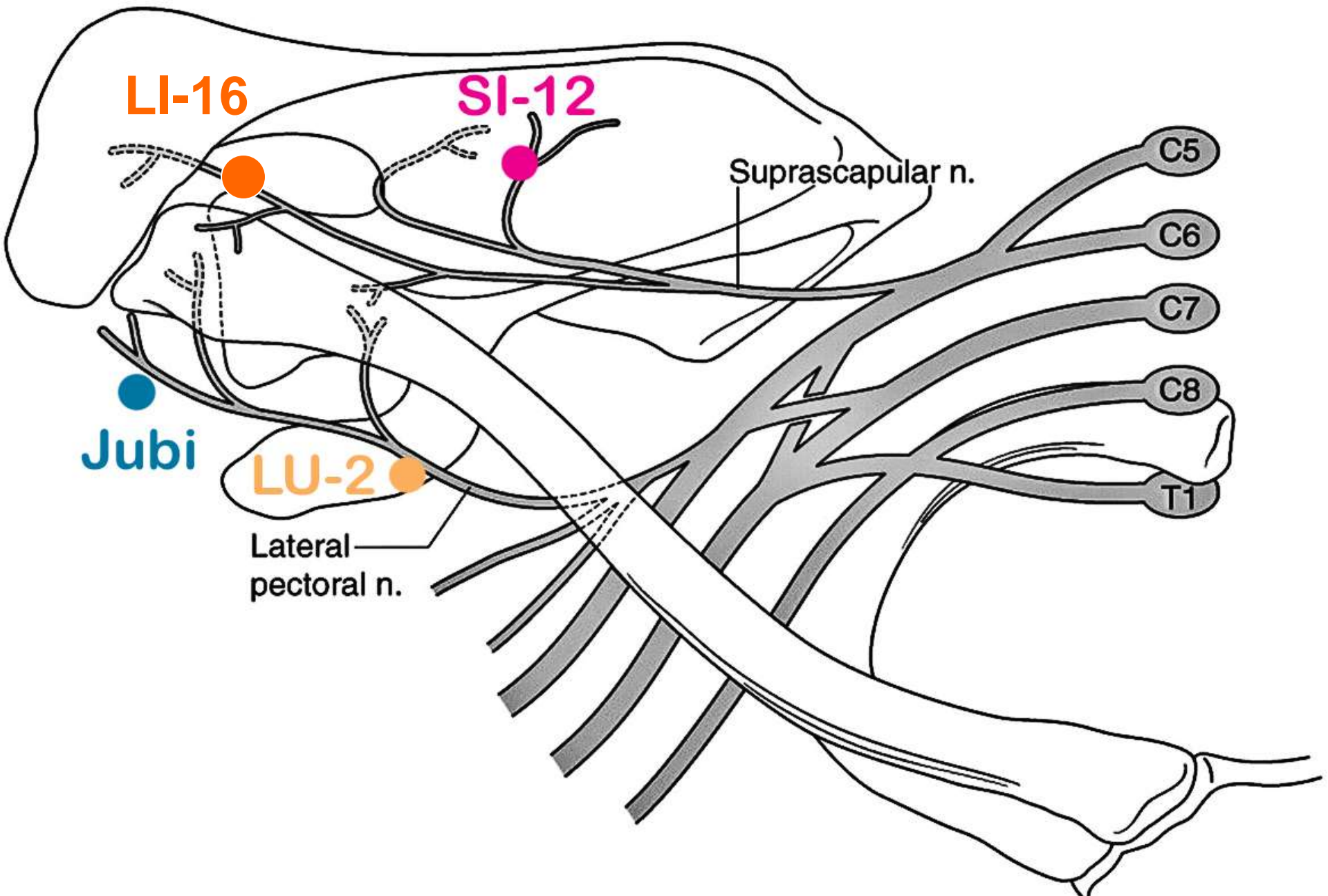
Pec. Minor

Lat. Pec. Nerve

Thoracoacromial vv

pectoralis  
major

anterior  
deltoid



**Superior View- Shoulder Joint Innervation**

# Suprascapular Nerve

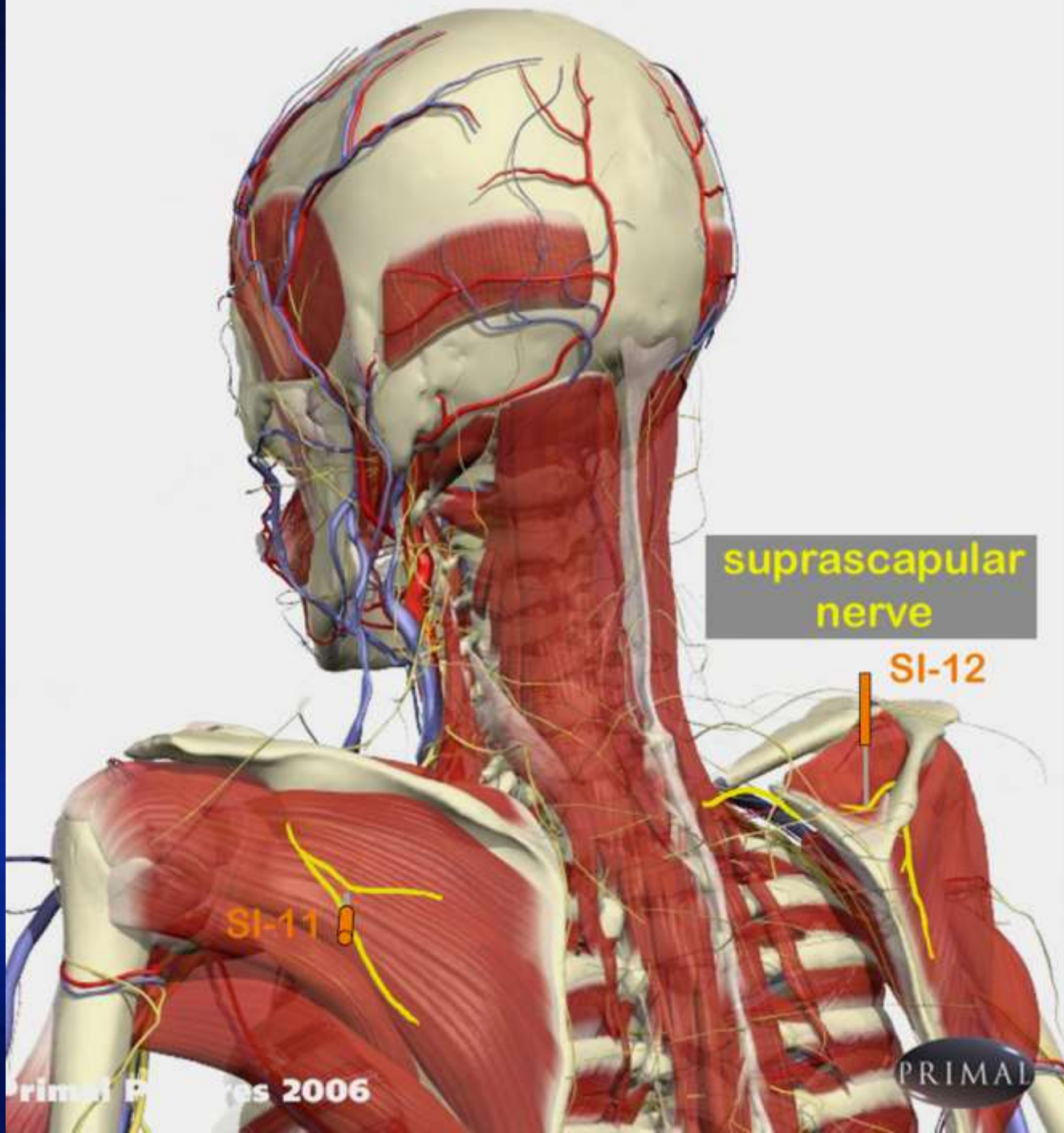
- innervates posterior capsule of shoulder
- “rarely clinical pain source” (?)

Aszmann OC, Dellon AL, Birely B, McFarland E. Innervation of the human shoulder joint and its implications for surgery. *Clin Orthop Rel Res.* 1996;330:202–207

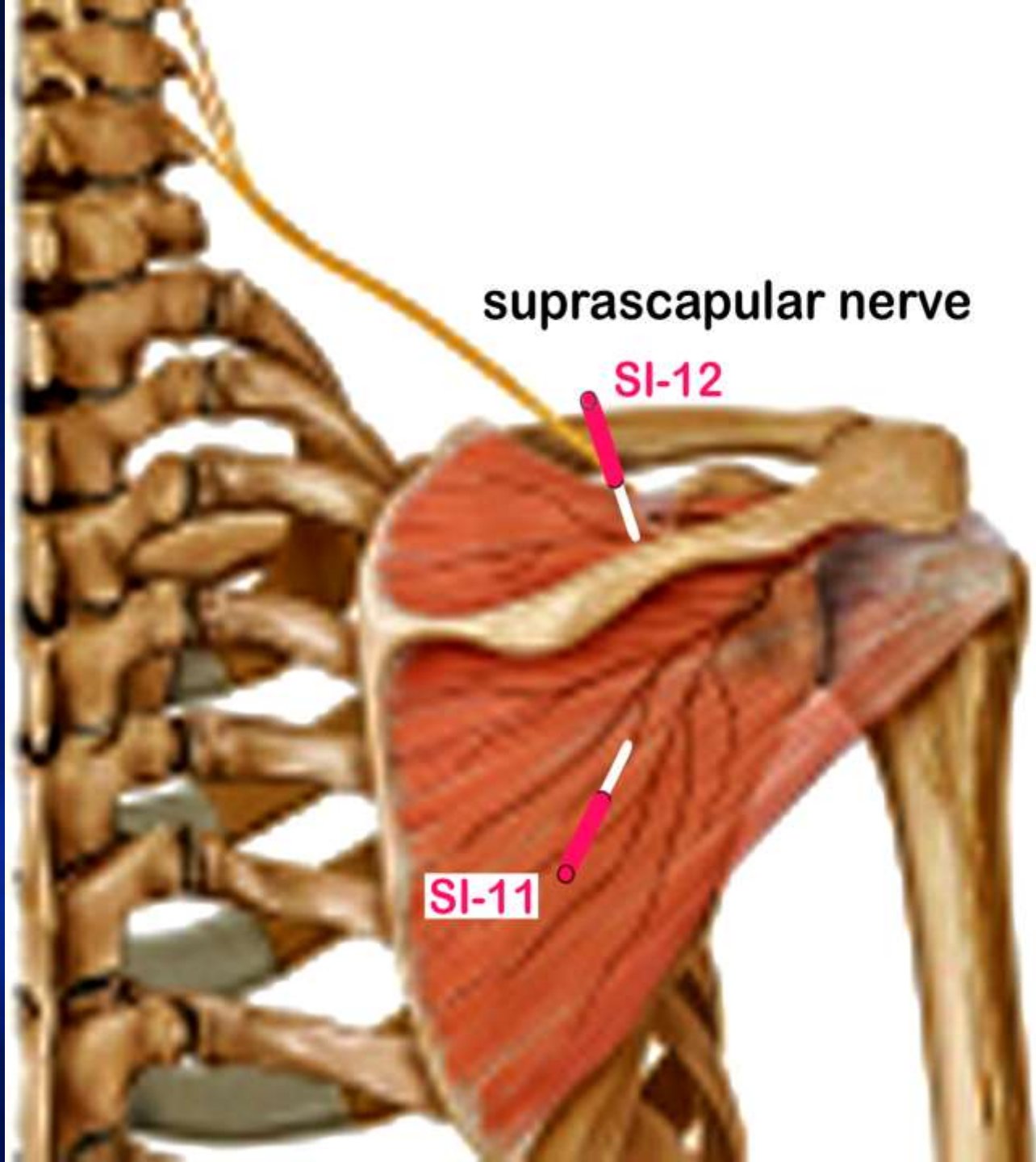
- “typically, posterior capsular pain requires a neurolysis of an entrapped suprascapular nerve and not a denervation”

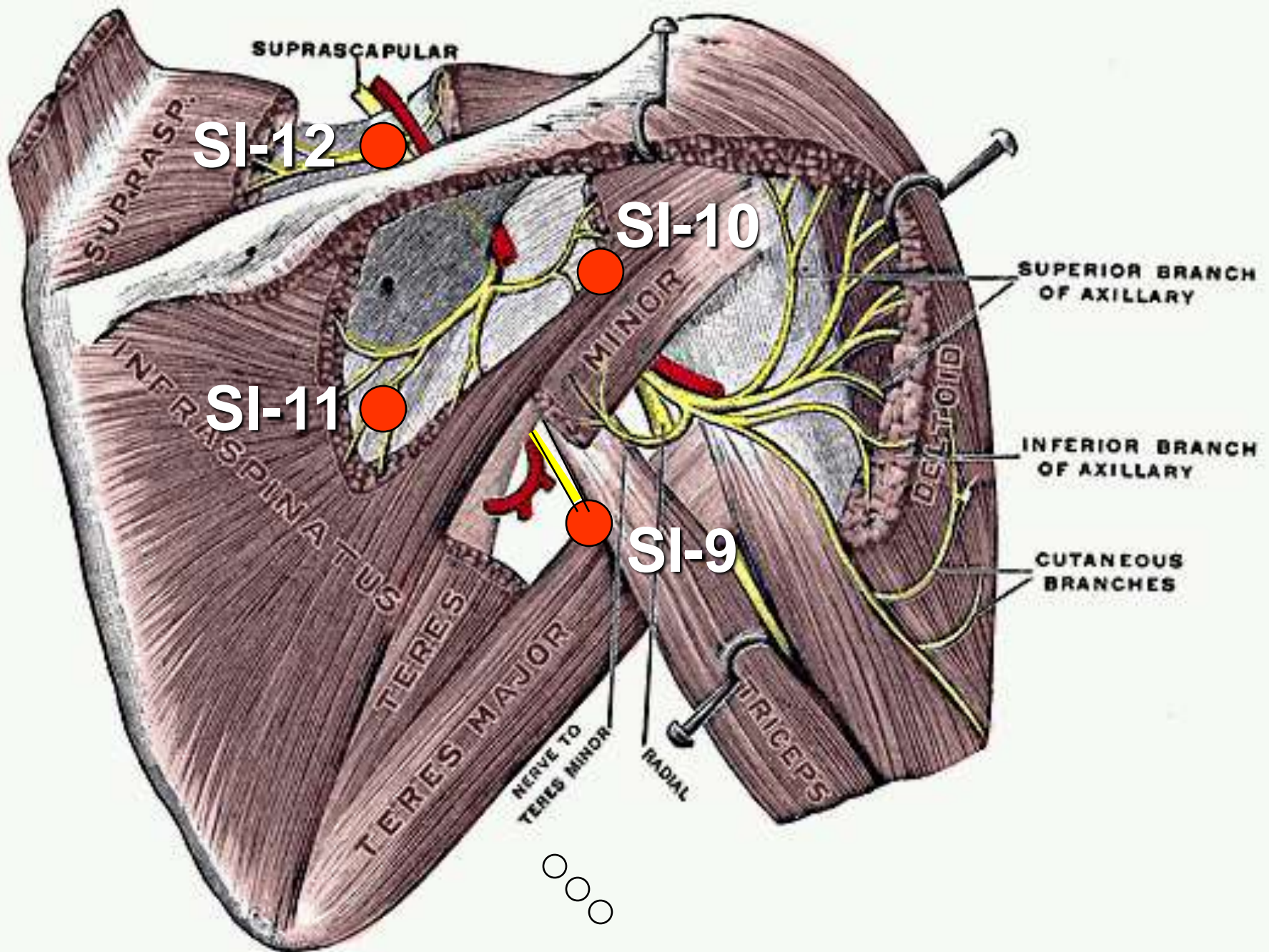


**Suprascapular  
Nerve  
Relationship  
To  
Supraspinatus  
And  
Infraspinatus  
Muscles**



# Suprascapular Nerve Relationship To Supraspinatus And Infraspinatus Muscles





# Axillary Nerve

- innervates the inferior capsule of the shoulder

- “rarely a clinical source of pain” (?)

Aszmann OC, Dellon AL, Birely B, McFarland E. Innervation of the human shoulder joint and its implications for surgery. *Clin Orthop Rel Res.* 1996;330:202–207

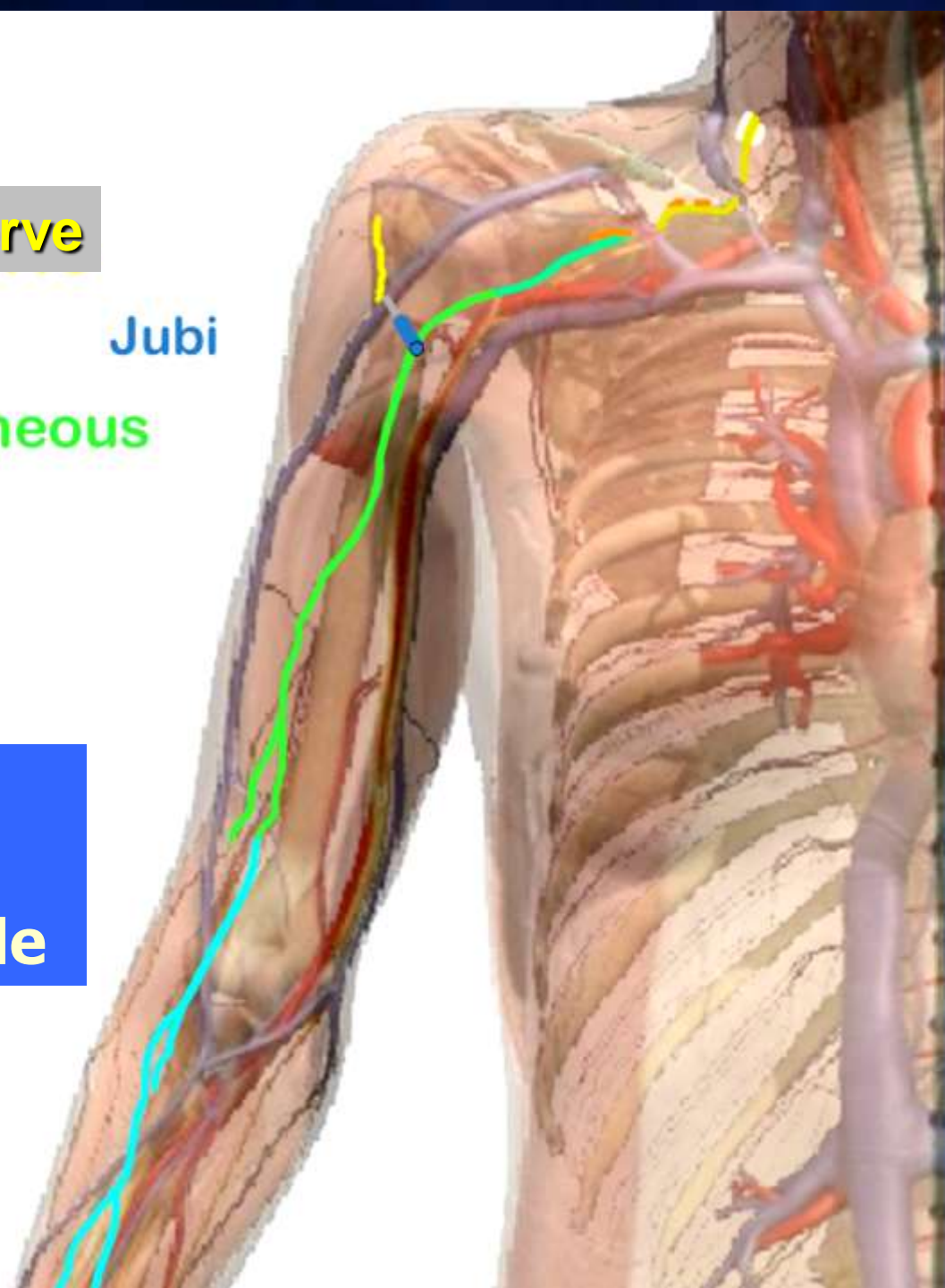
- acupuncture allows stimulation of the axillary nerve

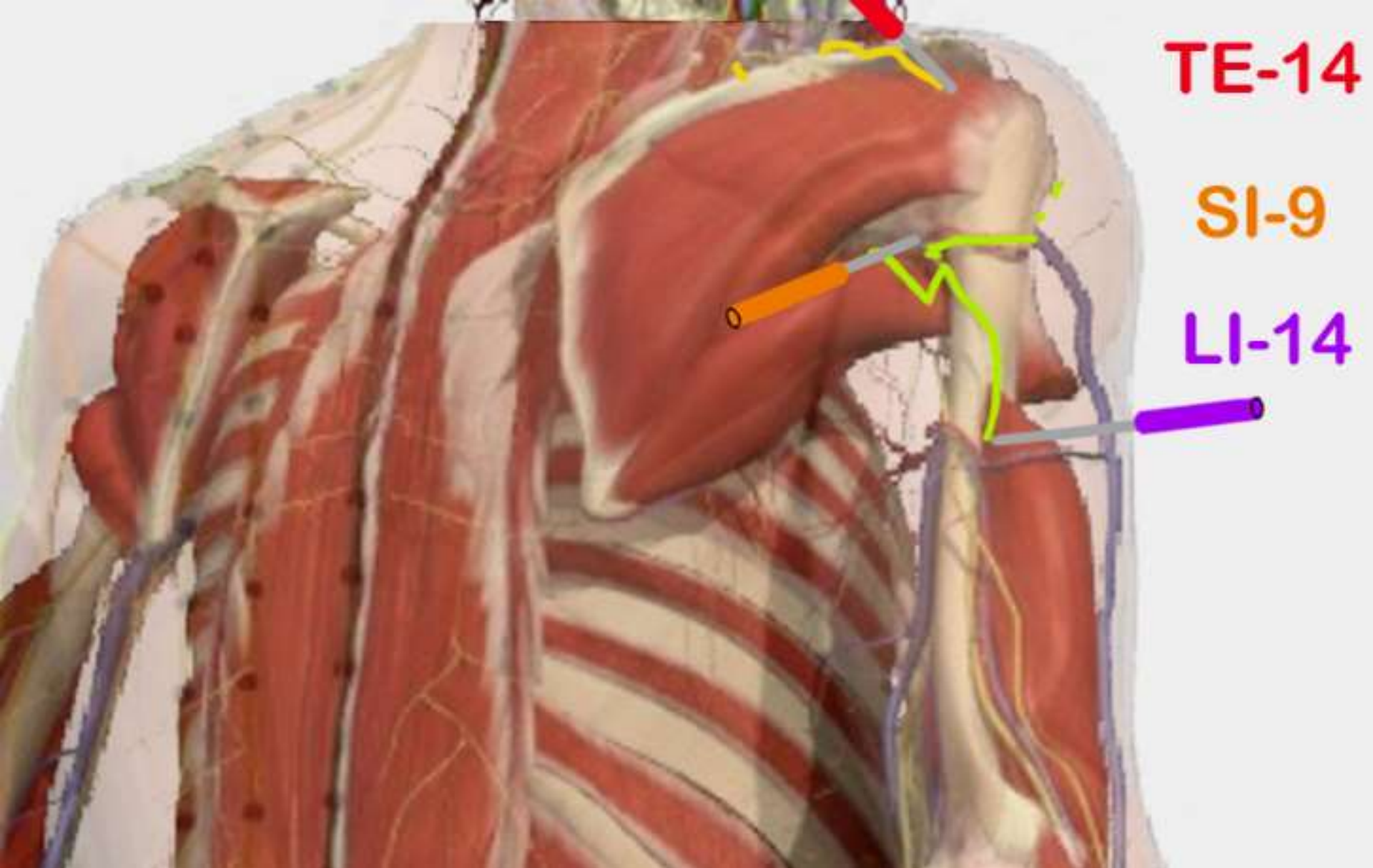
**axillary nerve**

Jubi

**musculocutaneous  
nerve**

**Relationship of  
axillary nerve to  
anterior deltoid muscle**





TE-14

SI-9

LI-14

relationship of **axillary nerve** & **supraclavicular nerve** to teres major & deltoid muscles

# Shoulder Acupoint Selections

<b>Muscle Trigger Point</b>	<b>Corresponding Acupoint</b>	<b>Nerve Influenced</b>
anterior deltoid	Jubi	axillary branch of lateral pectoral +/- axillary
anterior deltoid	LI-15	supraclavicular
lateral deltoid	LI-14	axillary
posterior deltoid	TE-14	supraclavicular
posterior deltoid, teres major	SI-9	axillary
supraspinatus	SI-12	suprascapular
infraspinatus	SI-11	suprascapular

# Shoulder Acupoint Indications

<b>Acupoint</b>	<b>Actions</b>	<b>Indications</b>
<b>Jubi</b>	<b>“raise arm”</b>	
<b>LI-14</b>	<b>Meeting point of LI, SI&amp; BL channels</b>	<b>shoulder pain, arm pain</b>
<b>LI-15</b>	<b>Meeting point of LI with SI &amp; TE channels</b>	<b>shoulder pain, arm pain</b>
<b>TE-14</b>	<b>Meeting point of TE channel with Yang linking vessel</b>	<b>shoulder joint soft tissue diseases/pain</b>
<b>SI-9</b>	<b>“true shoulder”, activates the SI channel, alleviates pain, benefits the shoulder</b>	<b>shoulder or scapular pain, shoulder disorders</b>
<b>SI-12</b>	<b>Meeting point of SI and LI, TE, and GB channels</b>	<b>benefits the shoulder and scapula</b>
<b>SI-11</b>	<b>“celestial gathering”, activates the channel, moves qi, relieves pain</b>	<b>shoulder or scapular pain</b>



# Demonstration

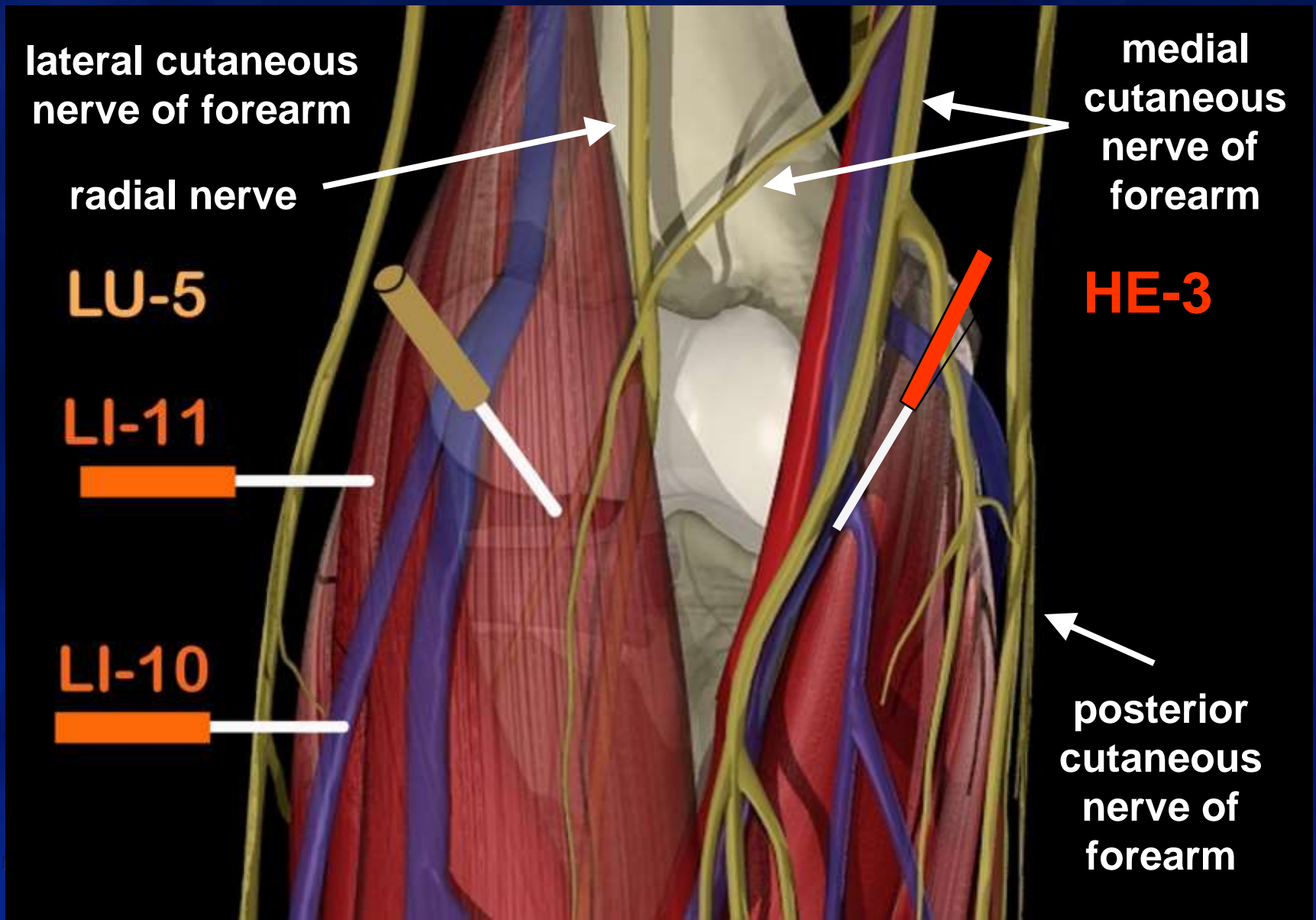
<b>Shoulder Points</b>	<b>Point Location Descriptions</b>
<b>Jubi</b>	<b>3 cun below anterior end of acromion</b>
<b>LI-15</b>	<b>In depression on anterior corner of acromion with arm abducted</b>
<b>LI-14</b>	<b>In lateral brachium, depression anterior to the insertion of the deltoid on the humerus</b>
<b>SI-9</b>	<b>In the posterior shoulder region, 1 cun above axillary fold</b>
<b>SI-10</b>	<b>In the posterior shoulder region, in the depression inferior and lateral to scapular spine 1 cun above SI-9</b>
<b>SI-11</b>	<b>In the inferior scapular fossa, 2/3 of the distance from the inferior angle of the scapula to the midpoint of the scapular spine</b>
<b>SI-12</b>	<b>In the posterior shoulder in middle of supraspinatus fossa</b>
<b>TE-14</b>	<b>In the lateral brachium, in depression on posterior corner of acromion with arm abducted</b>

# Elbow Points to Treat Joint Pain

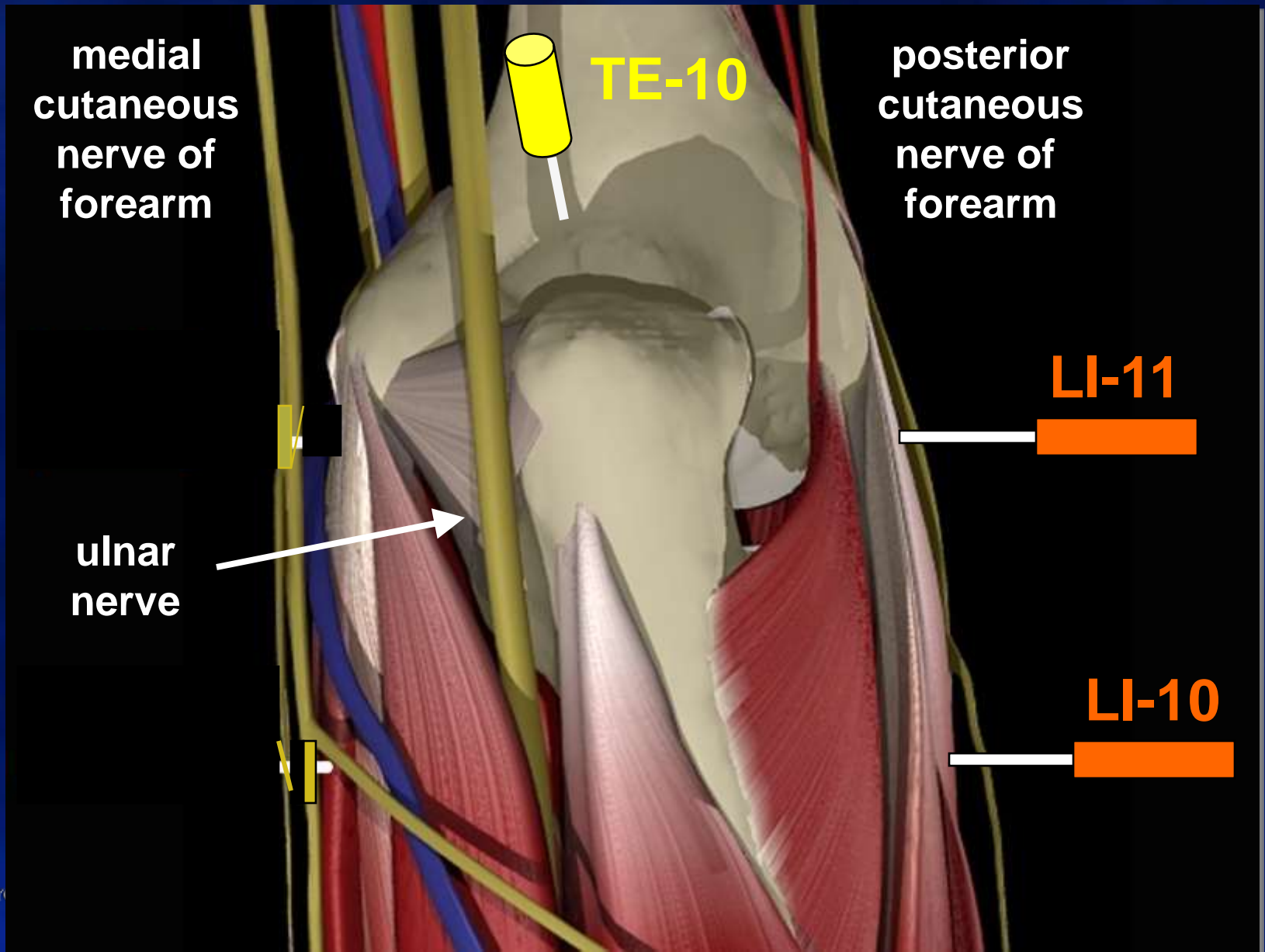
**The Answers (Points) First**

***Treat the Nerves to Treat the Pain!***

# Elbow Acupoints - Anterior View



# Elbow Acupoints- Posterior View



# Why These Points?

*Neuroanatomic Basis*

# Elbow Joint Innervation

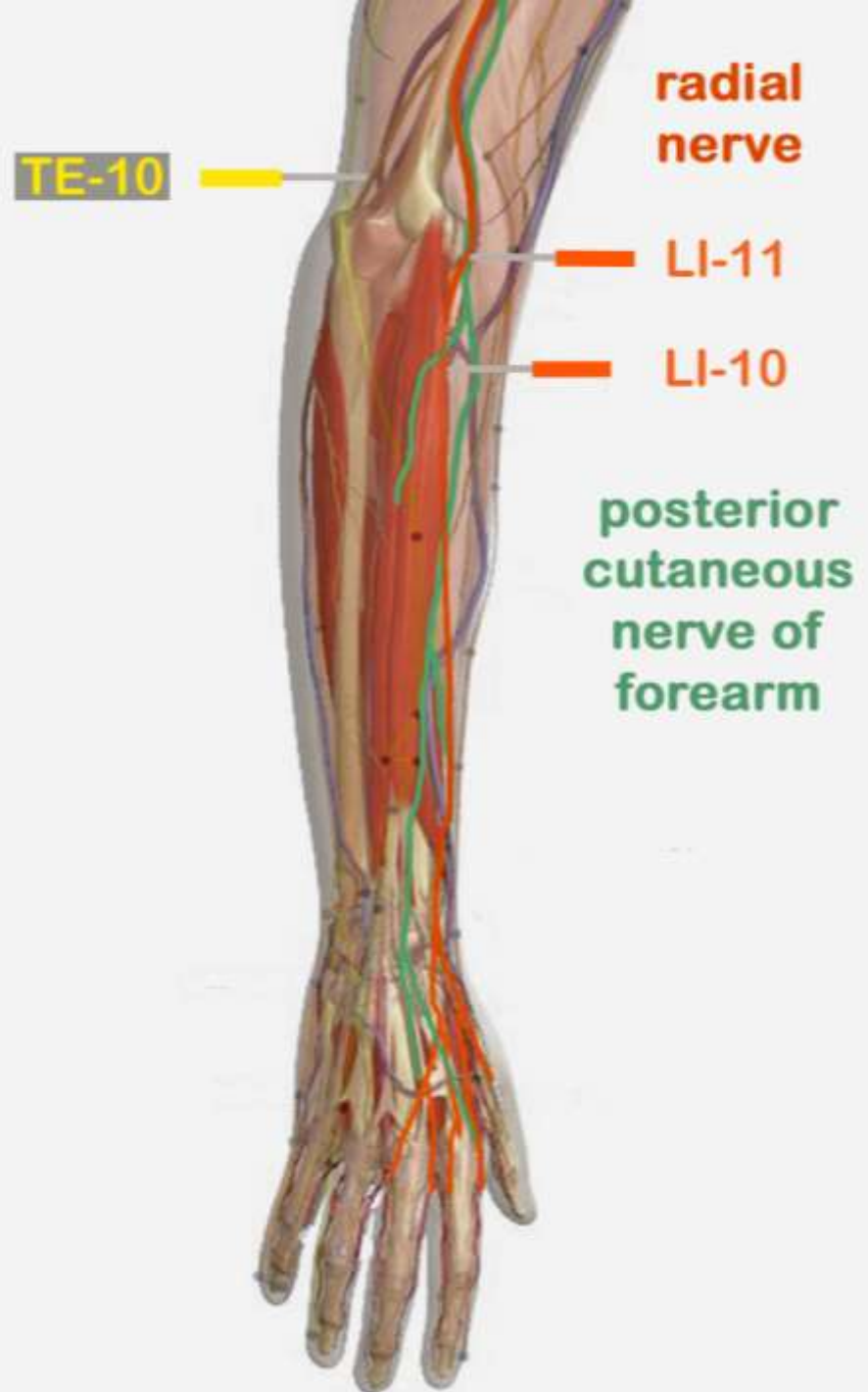
- **Posterior cutaneous nerve of forearm and radial nerve- lateral**
- **Branch of radial nerve- medial**
- **Not the median nerve!**

# Elbow Innervation- Lateral Epicondyle

- branch of posterior cutaneous nerve of forearm
- branch from the radial nerve to the brachioradialis continues through this muscle to innervate the lateral humeral epicondyle (sensory function only)
- posterior interosseus nerve & radial sensory nerve may be involved as well (2<sup>o</sup> chronic use of epicondylar brace?)



# Dorsal Forearm Innervation and Relevant Acupoints



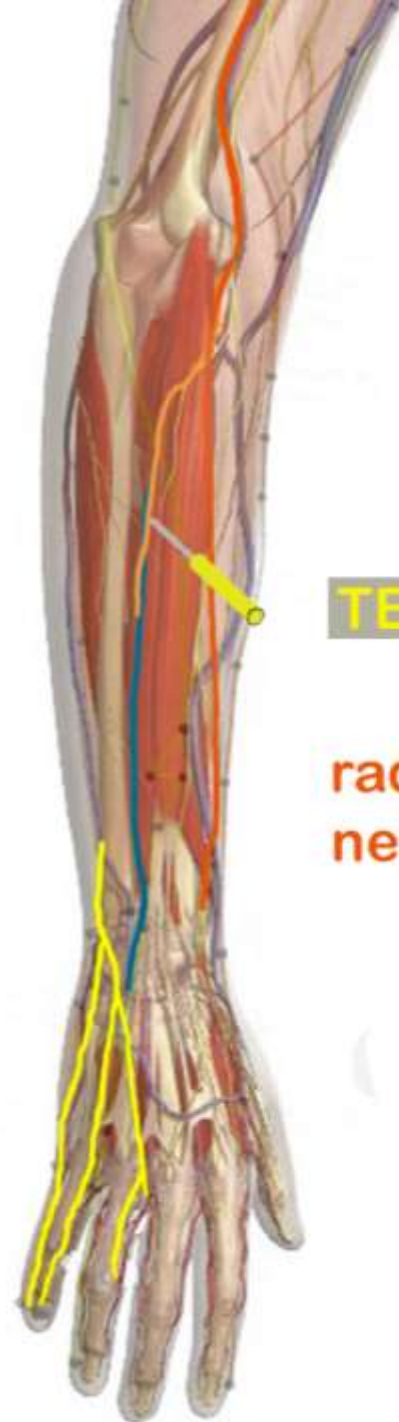
# Dorsal Forearm With Posterior Interosseus Nerve

posterior interosseus nerve

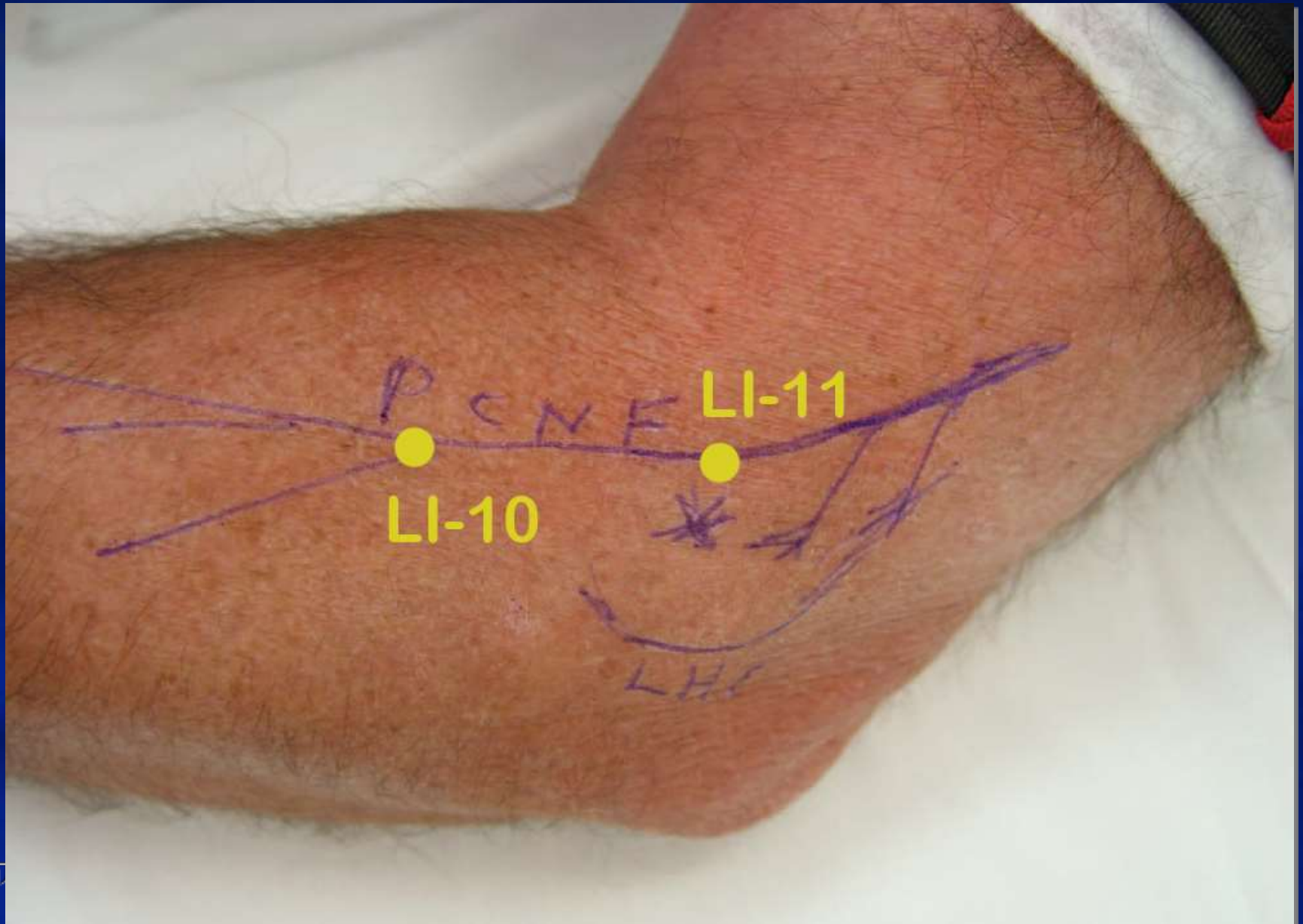
posterior interosseus vein

TE-9

radial nerve



# Lateral Epicondyle



# Lateral Epicondyle

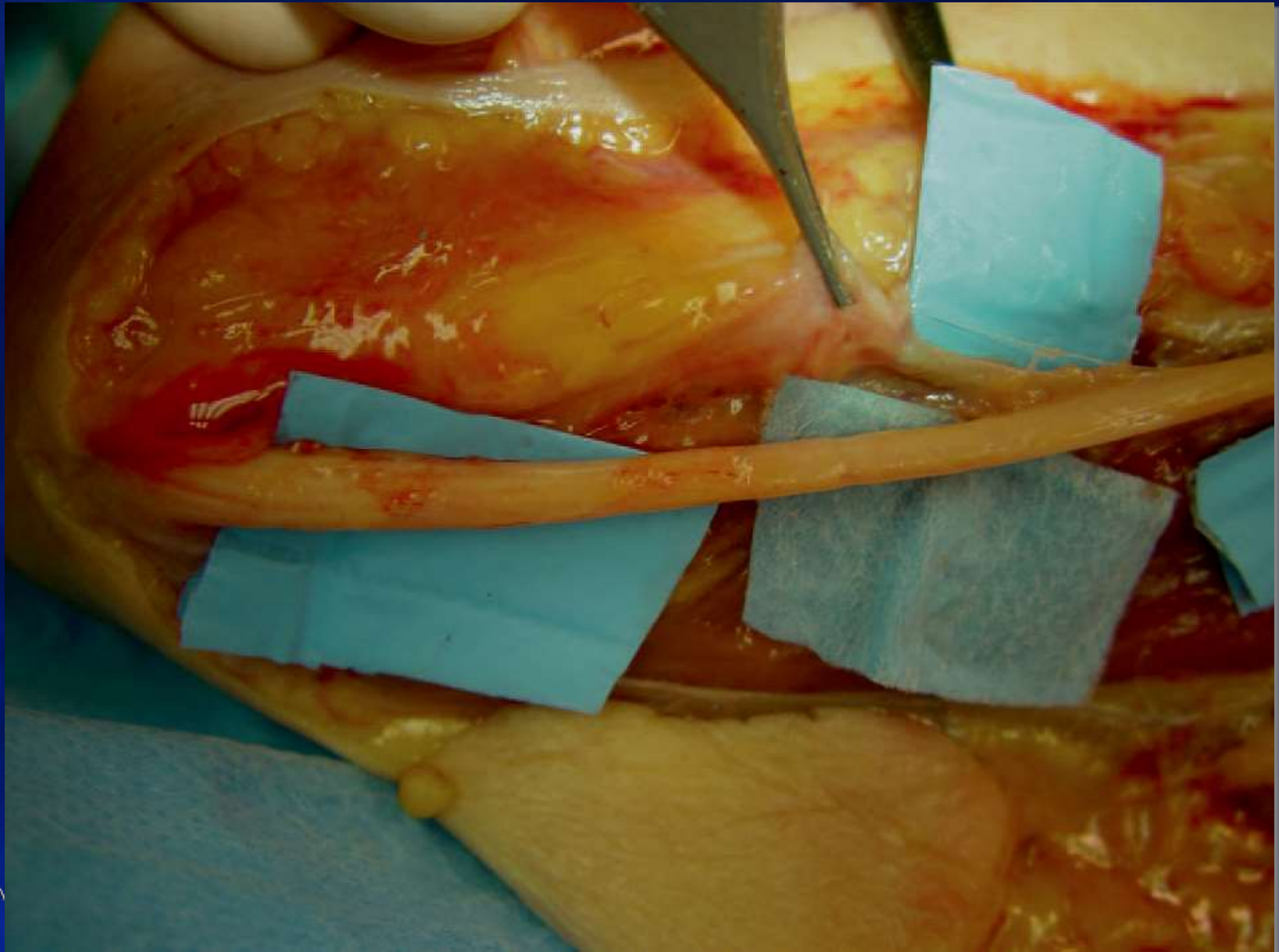


# **Elbow Innervation- Medial Epicondyle**

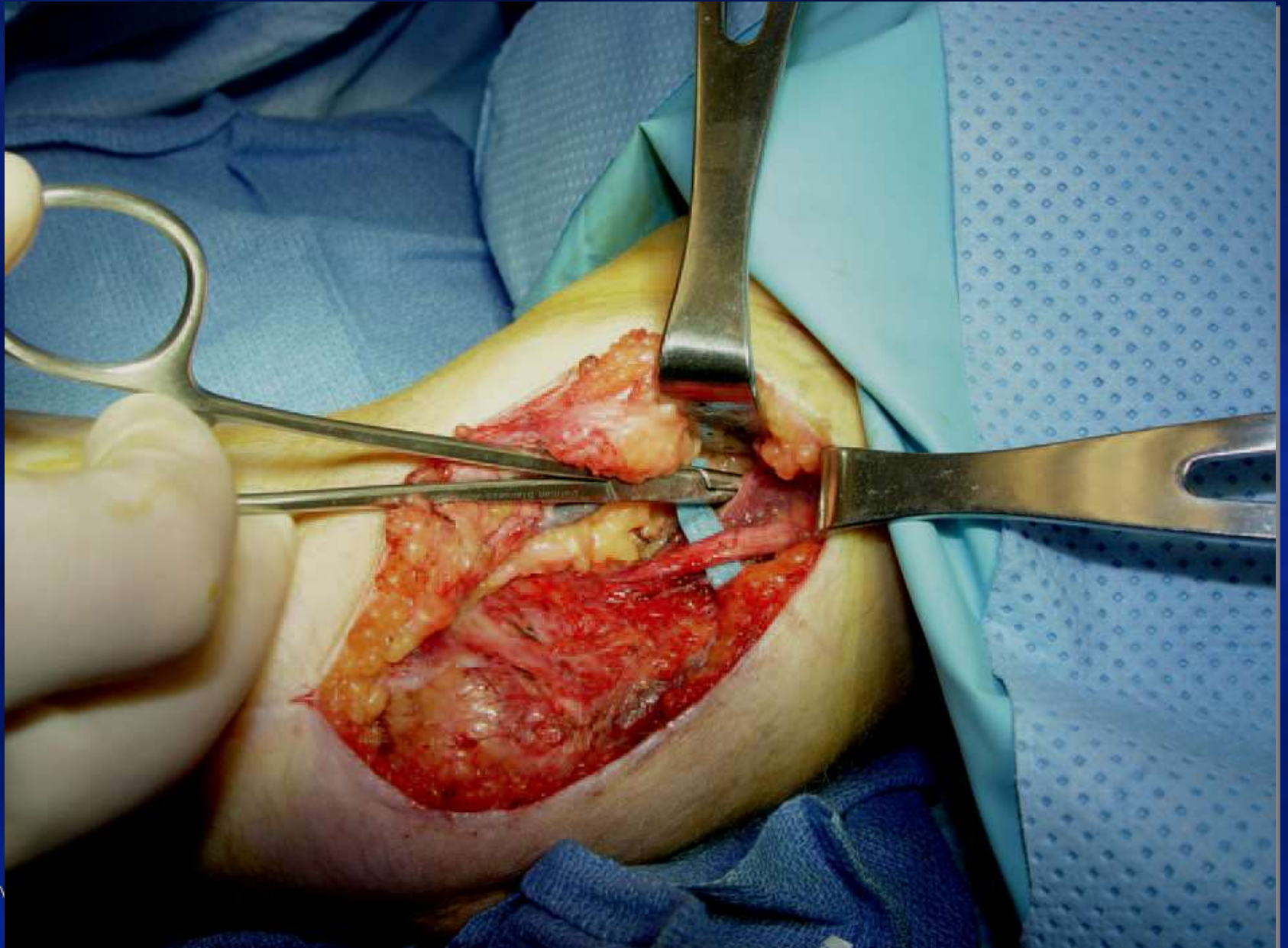
**a branch arises from the radial nerve in the axilla, which then travels in relationship to the ulnar nerve to finally pass along the medial inter-muscular septum and into the medial humeral epicondyle**

**Dellon AL, Ducic I, DeJesus RA. Innervation of the medial humeral epicondyle: Implications for medial epicondylar pain. *J Hand Surg (Br)*. 2006;31:331–333**

# Medial Epicondyle



# Medial Epicondyle



# Medial Epicondyle Innervation

HT-3

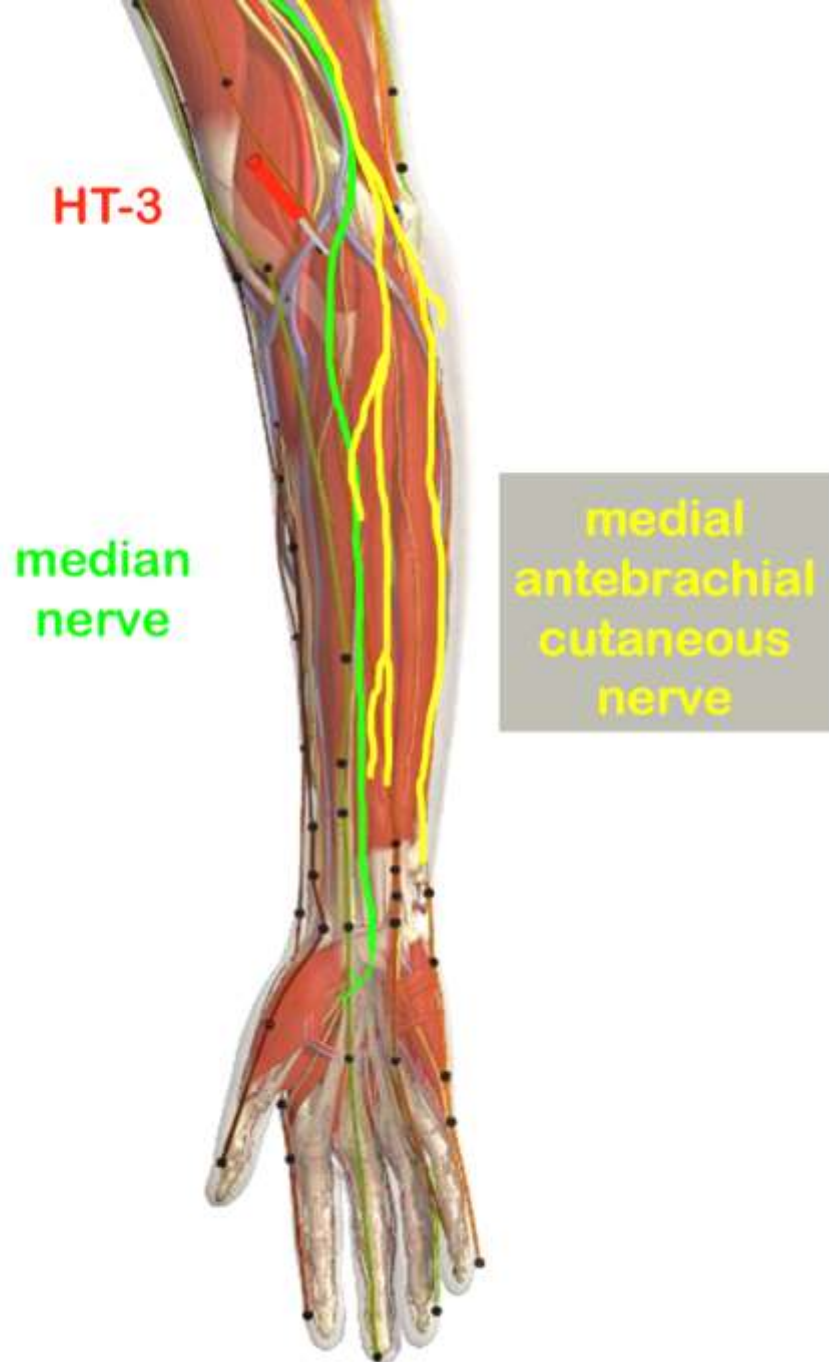
radial nerve branch  
to medial epicondyle

ulnar nerve





# No Elbow Joint Innervation From The Median Nerve?!!?



# Elbow Acupoint Selections

<b>Muscle Trigger Point</b>	<b>Corresponding Acupoint</b>	<b>Nerve Influenced</b>
<b>pronator teres (?)</b>	<b>HT-3</b>	<b>radial</b>
<b>brachioradialis ext digitorum communis</b>	<b>LI-10</b>	<b>radial, posterior cutaneous nerve forearm</b>
<b>extensor carpi radialis longus</b>	<b>LI-11</b>	<b>radial, posterior cutaneous nerve forearm</b>
<b>brachialis</b>	<b>LU-5</b>	<b>radial</b>
<b>extensor carpi ulnaris</b>	<b>TE-9</b>	<b>posterior interosseus nerve</b>
<b>triceps tendon</b>	<b>TE-10</b>	<b>radial</b>

# Elbow Acupoint Indications

<b>Acupoint</b>	<b>Actions</b>	<b>Indications</b>
<b>HT-3</b>	<b>Activates the Heart channel, benefits the arm</b>	<b>elbow problems, arm numbness, arm pain</b>
<b>LI-10</b>	<b>Activates the Large Intestine channel, alleviates pain</b>	<b>arm pain, arm paralysis</b>
<b>LI-11</b>	<b>Activates the Large Intestine channel, alleviates pain</b>	<b>elbow problems, arm pain, arm paralysis</b>
<b>LU-5</b>	<b>Activate the Lung channel, alleviates pain</b>	<b>elbow problems</b>
<b>TE-9</b>	<b>“four rivers”, benefits throat &amp; ears</b>	<b>forearm pain</b>
<b>TE-10</b>	<b>Activates the Triple Energizer channel, alleviates pain</b>	<b>elbow problems</b>

<b>Elbow Points</b>	<b>Point Descriptions</b>
<b>HT-3</b>	<b>At medial end of elbow crease, with elbow flexed</b>
<b>LI-10</b>	<b>2 cun distal to cubital crease on the line connecting LI-5 at wrist and LI-11 at elbow lateral cubital crease</b>
<b>LI-11</b>	<b>On lateral side of cubital crease when elbow fully flexed</b>
<b>LU-5</b>	<b>In the elbow crease in the depression lateral to the biceps tendon</b>
<b>TE-9</b>	<b>On the dorsal forearm between the radius and ulna, 7 cun above TE-4 at the dorsal wrist crease</b>
<b>TE-10</b>	<b>In the posterior elbow region in the depression 1 cun above olecranon when elbow is flexed</b>

# Wrist Joint

**The Answers (Points) First**

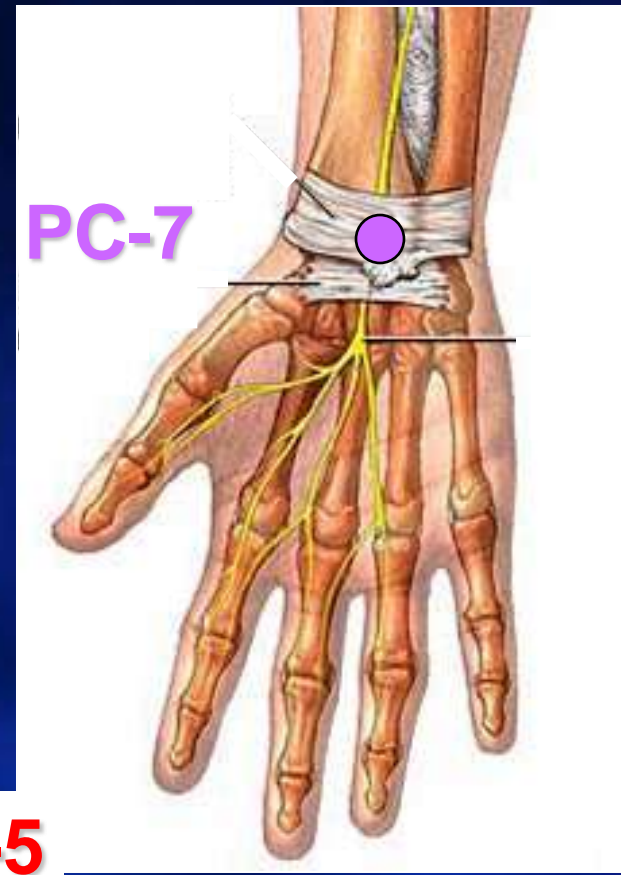
***Treat the Nerves to Treat the Pain!***

# Wrist Acupoint Selections

**PC-7**  
**TE-4**  
**LI-5**



**PC-7**



# Why These Points?

*Neuroanatomic Basis*

# Nerves Innervating Wrist Joint

- posterior interosseous nerve
- anterior interosseous nerve
- superficial radial sensory branches to wrist joint
- palmar cutaneous of the median nerve
- volar branches of the median nerve to wrist joint
- lateral cutaneous nerve of the forearm
- medial cutaneous nerve of the forearm
- posterior cutaneous nerve of the forearm
- dorsal cutaneous branch of ulnar nerve to wrist joint
- branches from ulnar nerve's motor branch to wrist

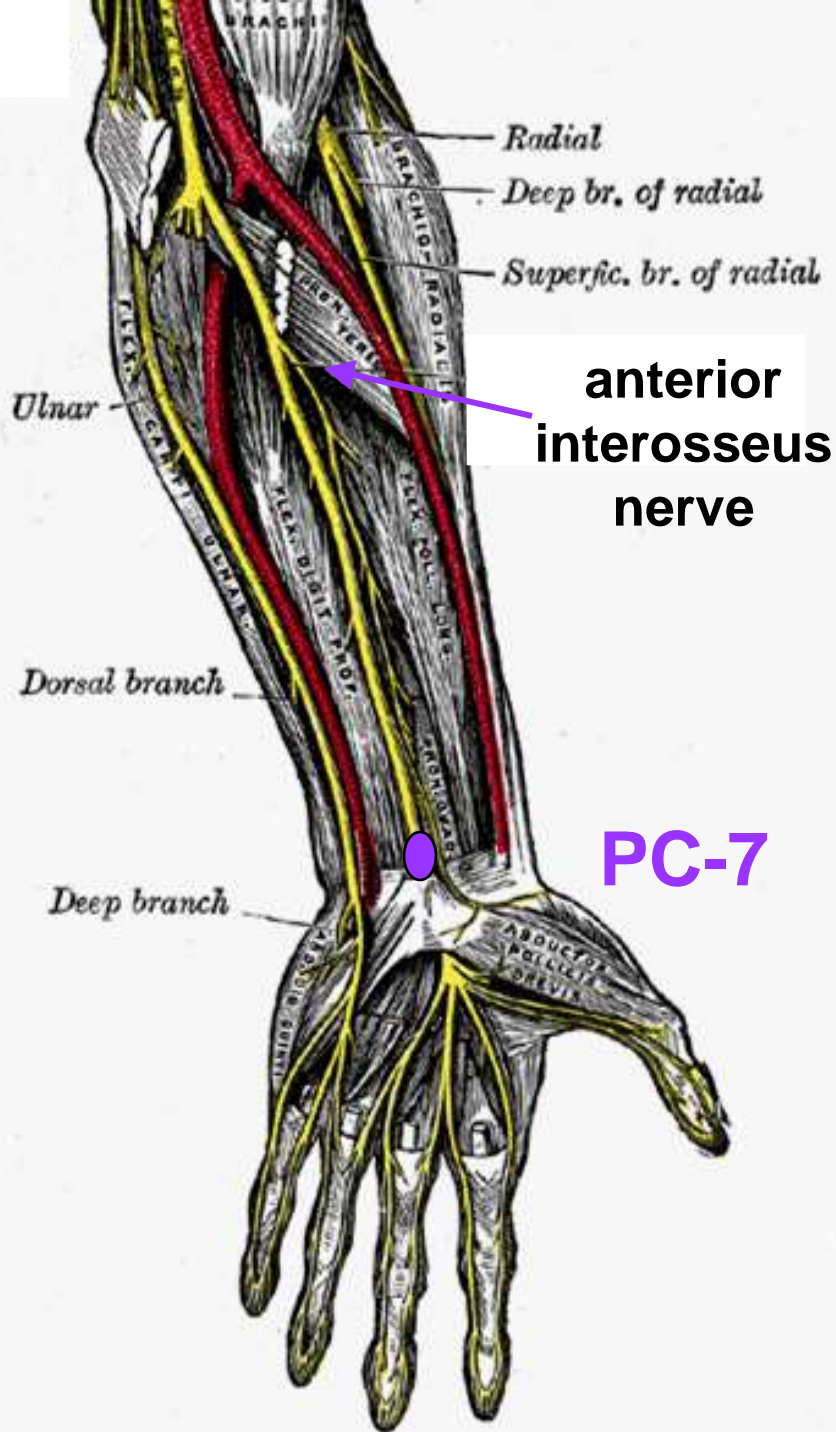
\*Derived from Wilhelm, A. Articular denervation and its anatomical foundation: A new therapeutic principle in hand surgery. On the treatment of the later stages of lunatomalacia & navicular pseudarthrosis (German). *Hefte Unfallheilkd.* 86: 1,1966.



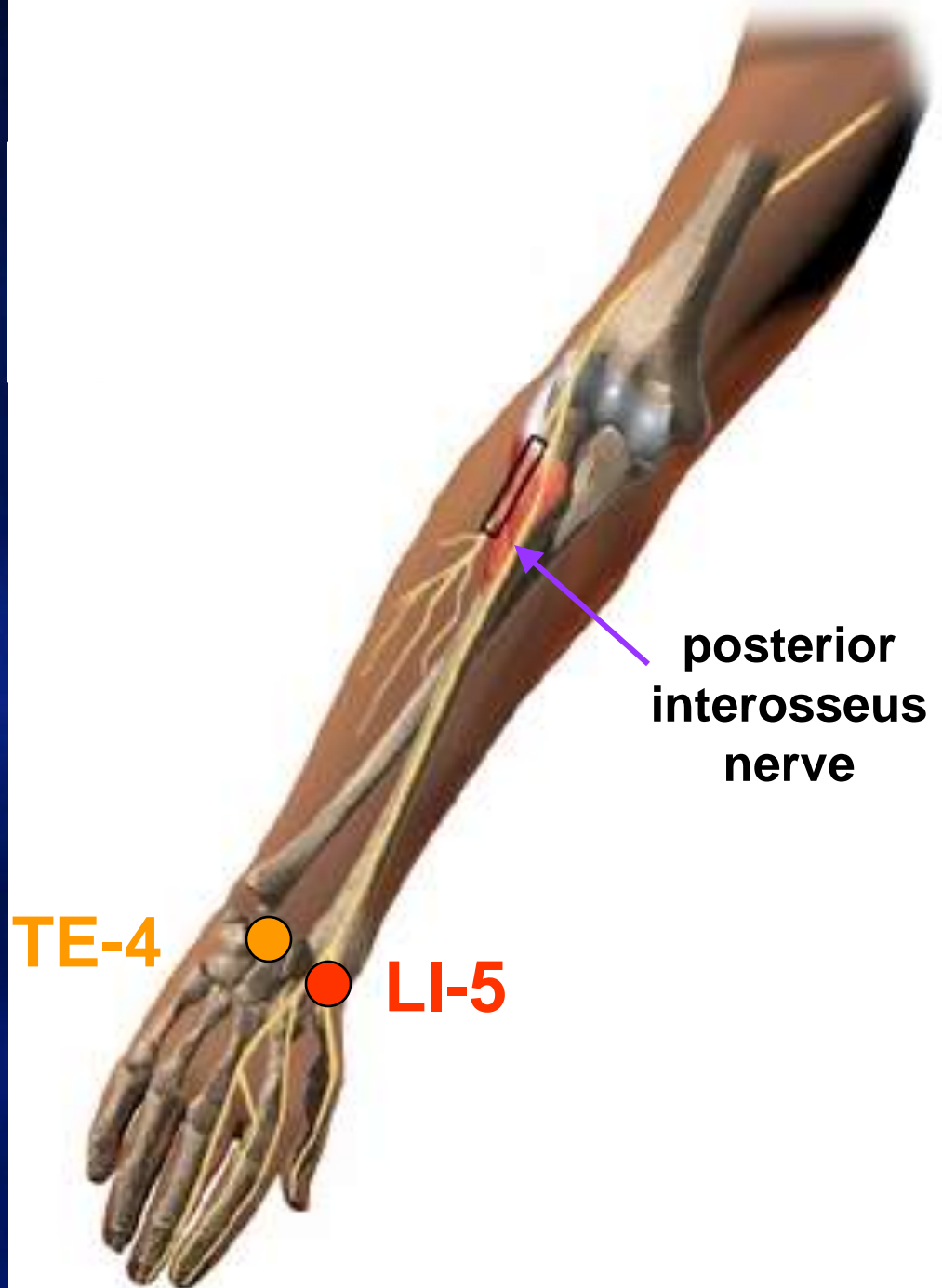
# Wrist Joint Innervation

- the dorsal wrist capsule is innervated by the posterior interosseous nerve
- the volar wrist capsule is innervated by the anterior interosseous nerve
- denervation of wrist leads to a reduction of at least 5 on the visual analogue scale (if no carpal instability)

# Volar Wrist Joint Innervation



# Dorsal Wrist Joint Joint Innervation



# Wrist Joint Innervation

- Partial wrist joint denervation results  $\geq$  than those reported for total wrist denervation
- if pain relief is obtained by nerve block, the patient with a painful but stable wrist joint can expect an up to 90% chance of good to excellent pain relief by partial wrist denervation (anterior and posterior interosseus nerves), and not need a joint fusion or replacement.

Dellon, AL. Partial Joint Denervation I: Wrist, Shoulder, and Elbow *Plastic and Reconstructive Surgery* 123:197-207, January 2009

# Wrist Acupoints Selections

<b>Muscle Trigger Point</b>	<b>Corresponding Acupoint</b>	<b>Nerve Influenced</b>
n/a	PC-5	median, anterior interosseus nerve
n/a	TE-4	posterior interosseous nerve
n/a	LI-5	radial, posterior cutaneous nerve forearm

# Wrist Acupoint Indications

<b>Acupoint</b>	<b>Actions</b>	<b>Indications</b>
<b>PC-7</b>	<b>Clears heat from heart, calms the spirit</b>	<b>Wrist pain, palm heat</b>
<b>TE-4</b>	<b>Relaxes the tendons, relieves pain</b>	<b>Wrist pain, soft tissue diseases of wrist</b>
<b>LI-5</b>	<b>Benefits the wrist joint, alleviates pain</b>	<b>Soft tissue diseases of the wrist</b>

<b>Wrist Points</b>	<b>Point Descriptions</b>
<b>PC-7</b>	<b>At volar wrist crease between tendons of palmaris longus and flexor carpi radialis muscles</b>
<b>TE-4</b>	<b>On dorsal wrist crease between tendons of extensor digitorum and extensor digiti minimi</b>
<b>LI-5</b>	<b>On dorsoradial wrist, in the depression between the tendons of the extensor pollicis longus and brevis</b>

# Hip Joint

**The Answers (Points) First**

***Treat the Nerves to Treat the Pain!***



# Anterior Hip Point Selections

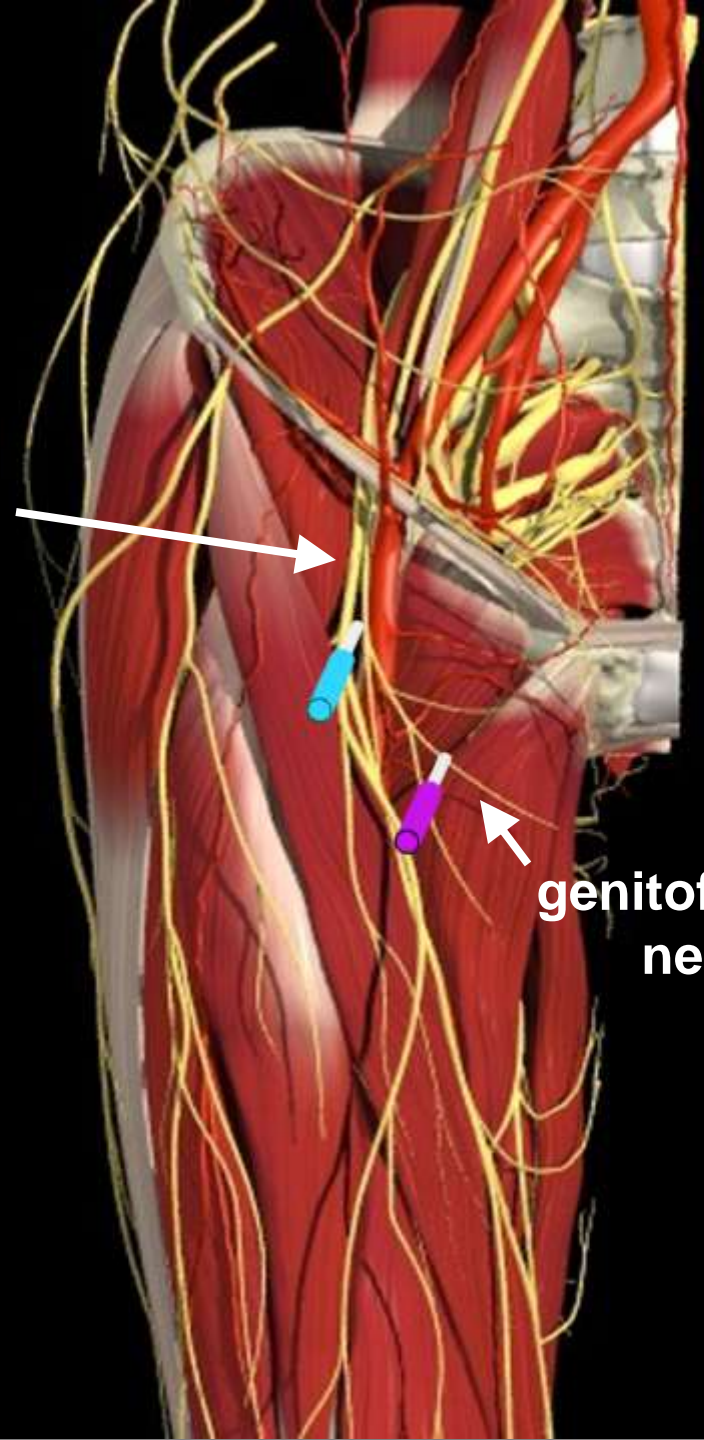
SP-12  
LR-11

femoral  
nerve

SP-12

LR-11

genitofemoral  
nerve



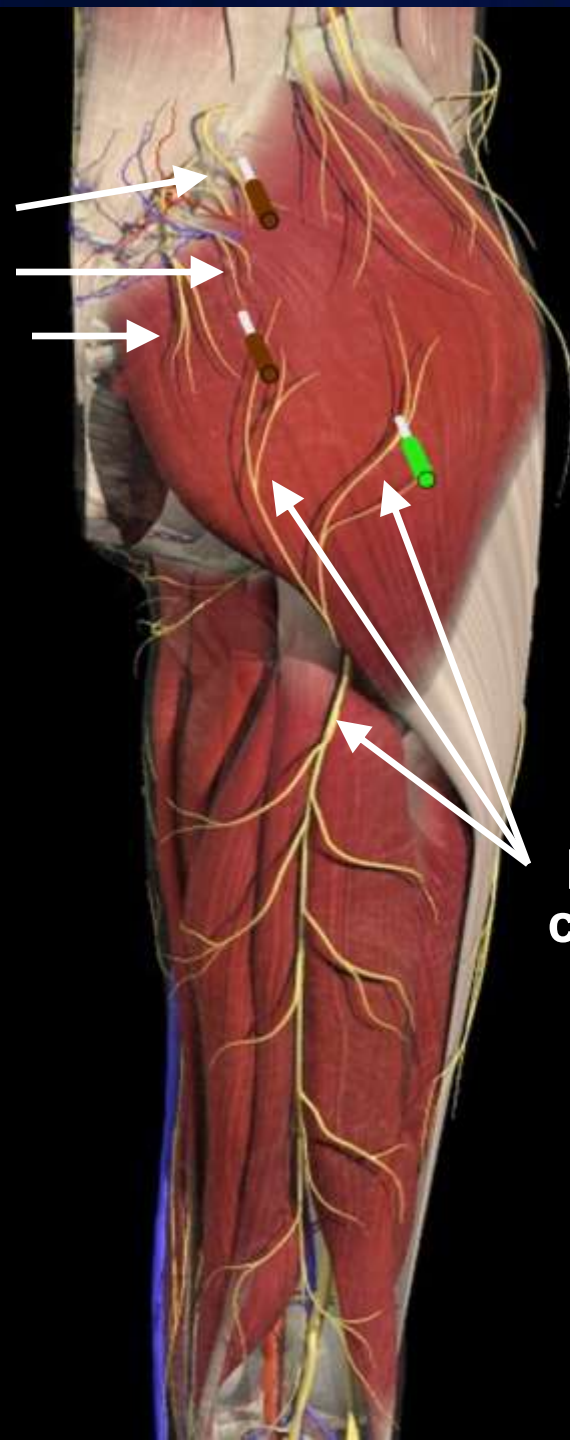
# Posterior Hip Point Selections

**BL-53**  
**BL-54**  
**GB-30**

S1  
S2  
S3

**BL-53**  
**BL-54**  
**GB-30**

posterior  
cutaneous  
nerve of  
thigh



# Hip Joint Innervation

**Articular branch**

**Innervation region of  
the hip joint capsule**

---

**femoral nerve**

**anterolateral**

**obturator nerve**

**anteromedial**

**superior gluteal nerve**

**posterolateral**

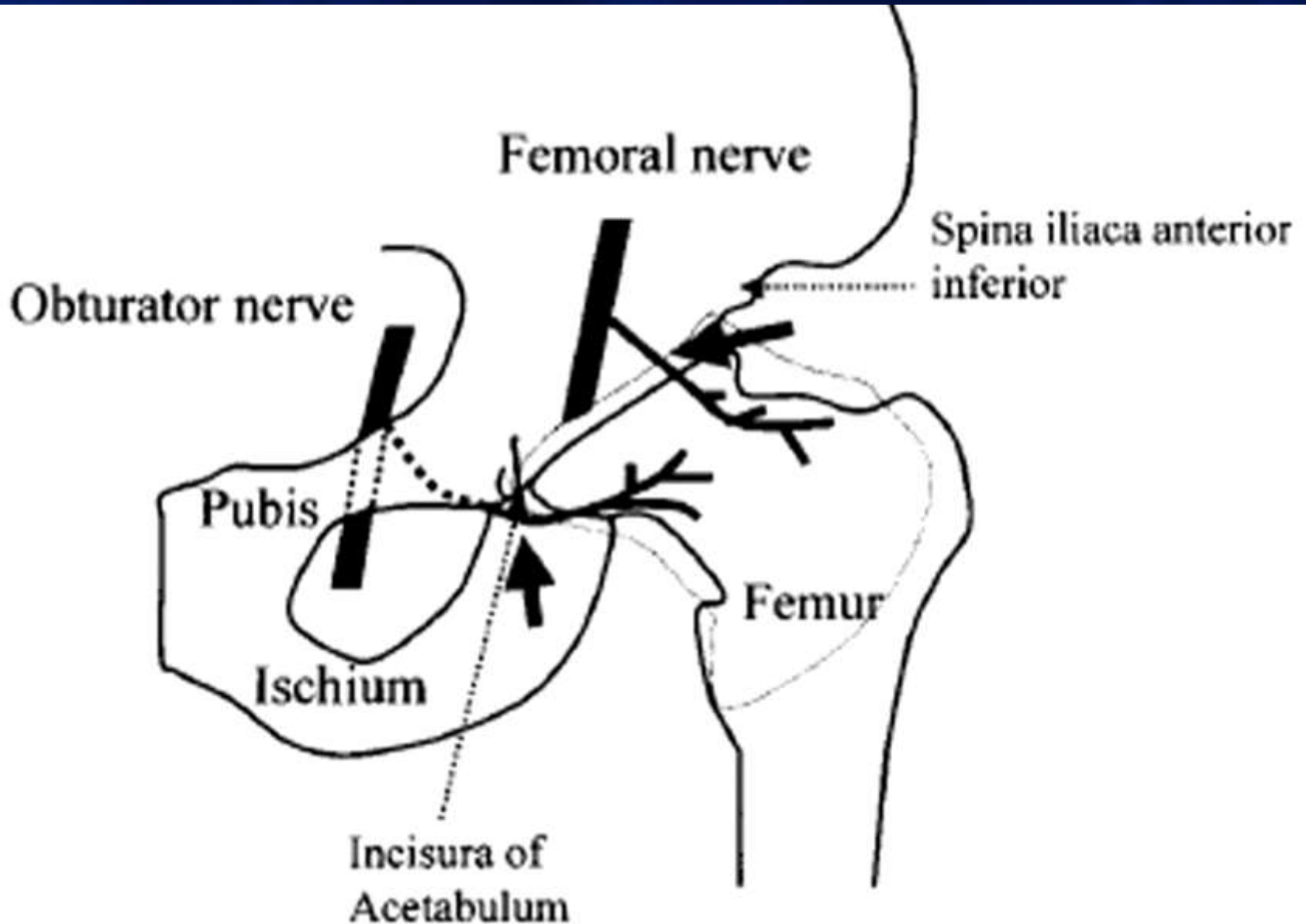
**nerve to the quadratus  
femoris muscle**

**posteroinferior**

**sciatic nerve**

**posterosuperior**

# Anterior Hip Innervation



# Hip Joint Innervation- Anterior

## Articular branches of femoral nerve

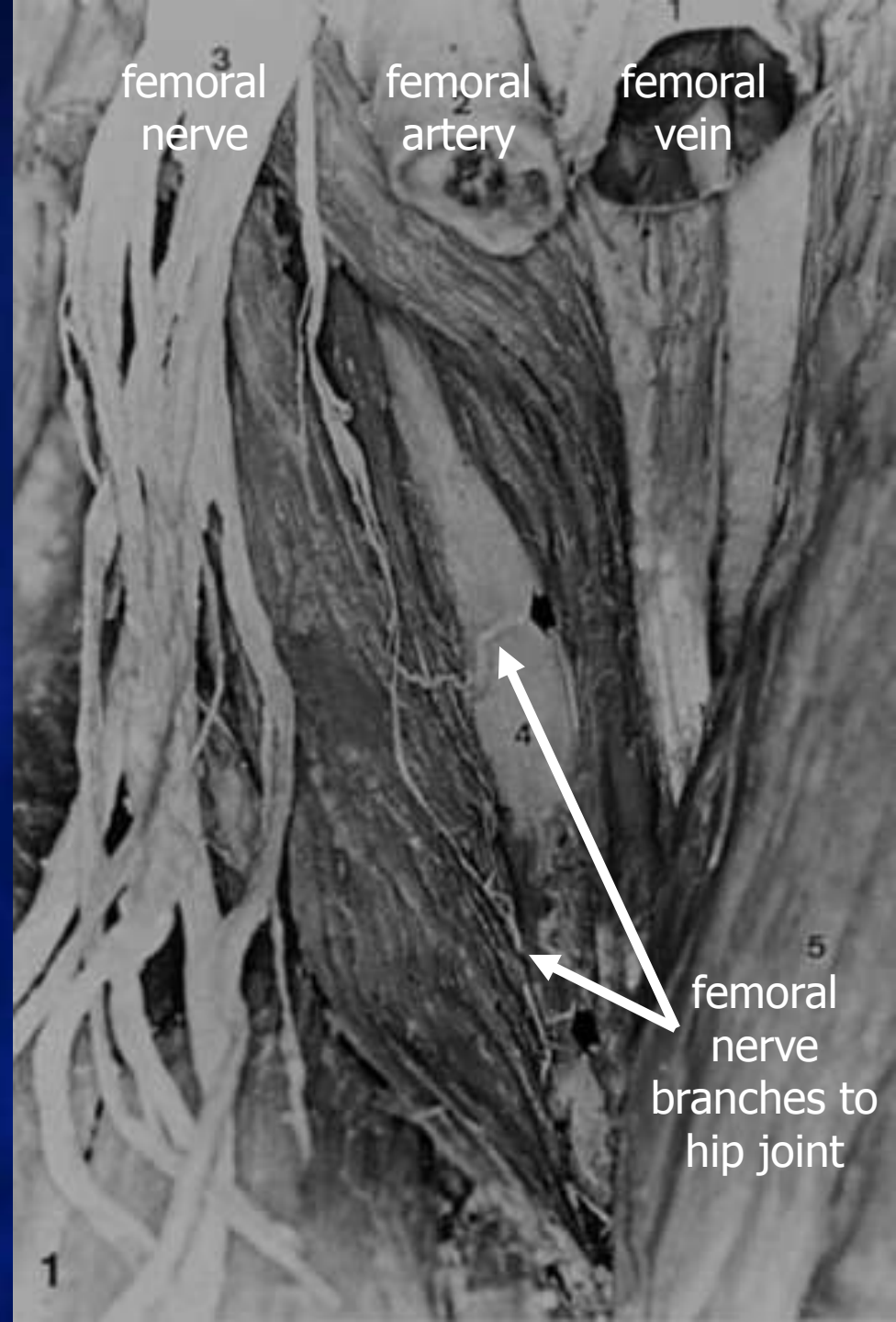
- a major articular branch enters the iliopsoas muscle, gives several branches to that muscle, and sends a side branch vertically through the muscle fibers to innervate the anterior aspect of the hip joint capsule.
- a second major articular branch passes at a lateral angle across the iliopsoas muscle to innervate the lateral margin of the hip joint capsule and may have an additional branch to the hip joint capsule below the iliopsoas muscle

# Hip Joint Innervation- Anterior

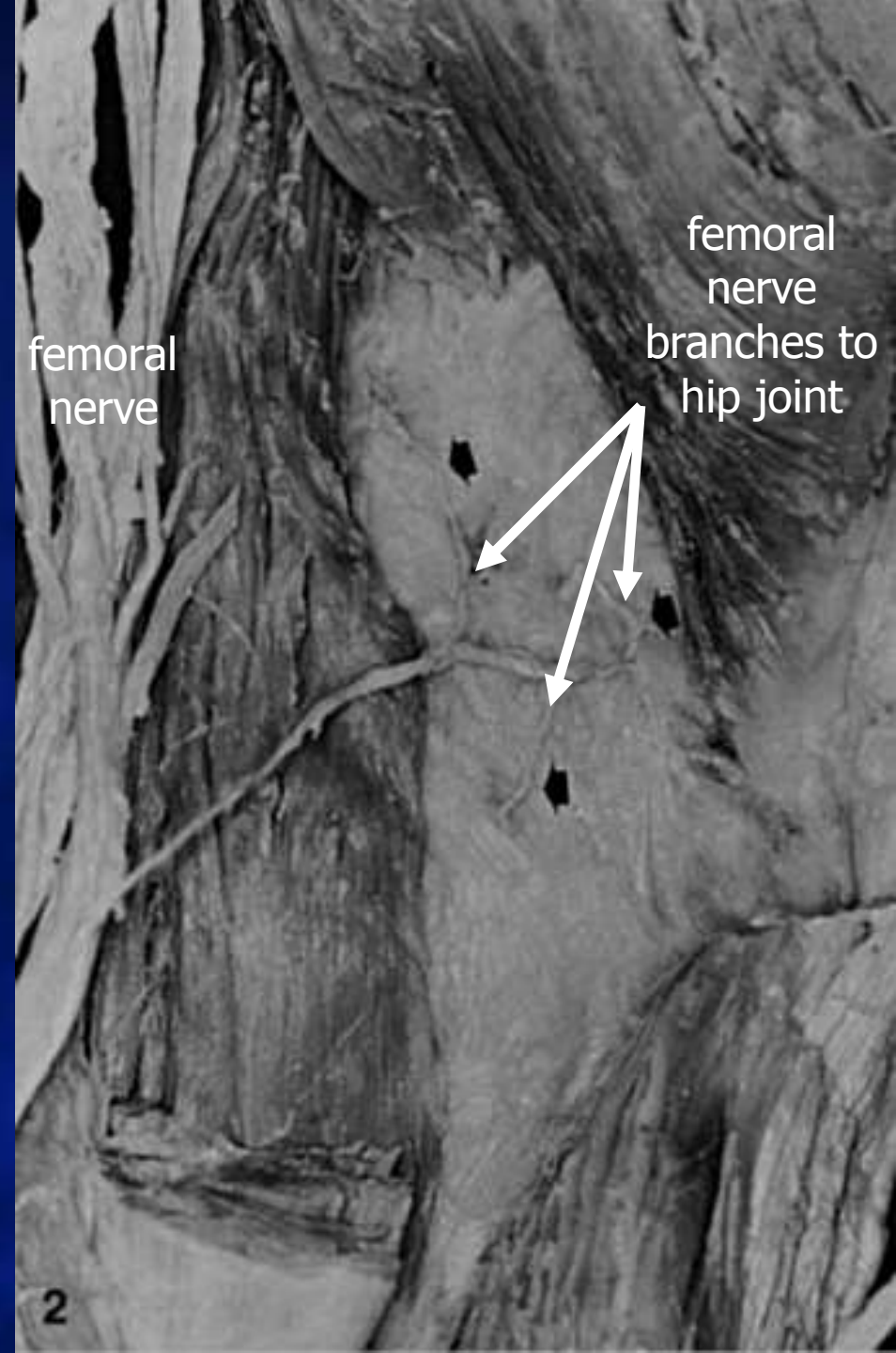
## Articular branches of femoral nerve

- to some extent, the femoral nerve gives articular branches to the hip joint capsule accompanied by its vasculature
- less commonly, an accessory femoral nerve also provides sensory innervation of the anterior hip joint

# Anterior Hip Joint Innervation (2 branches of femoral nerve)

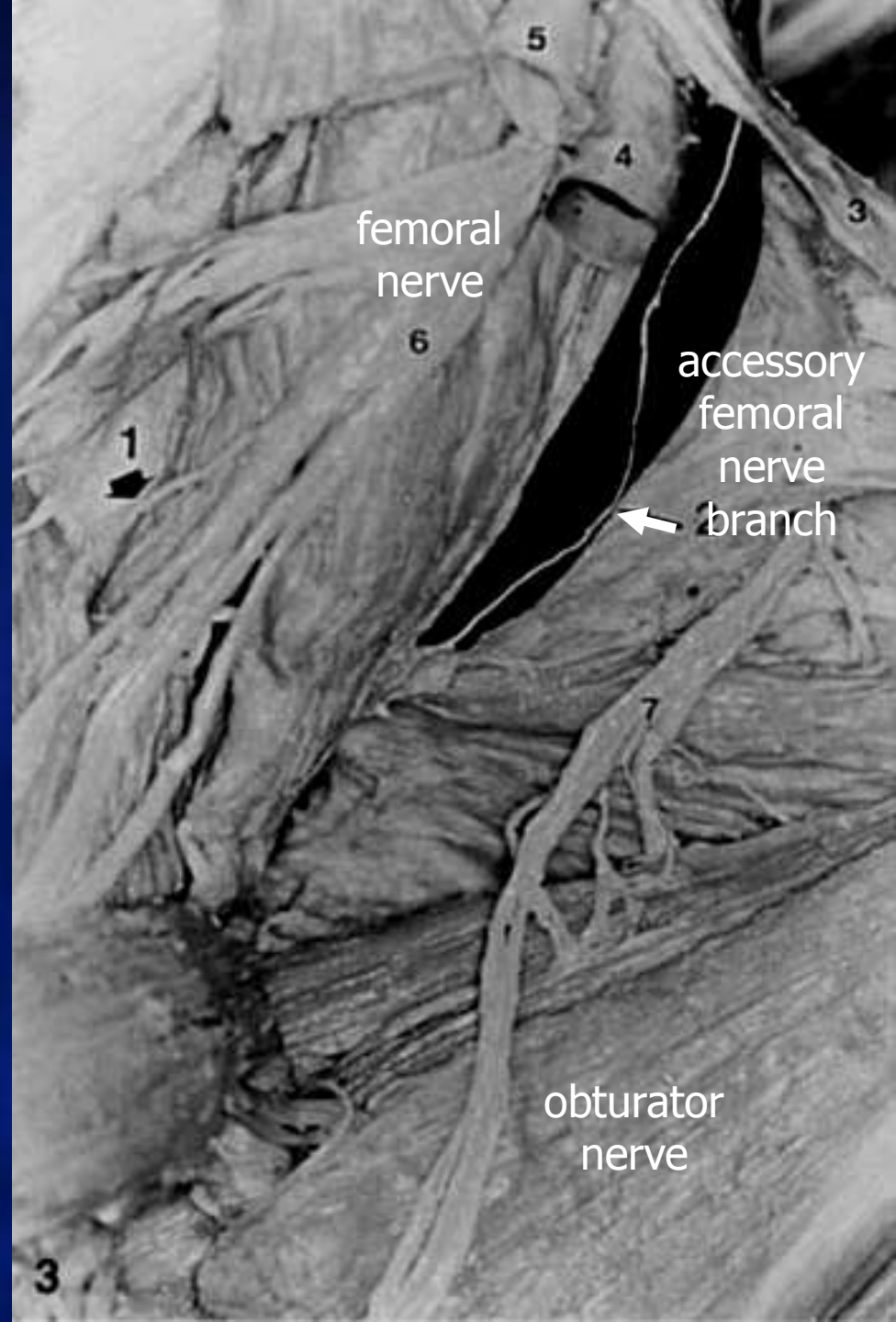


# Anterior Hip Joint Innervation (3 branches of femoral nerve)





# Anterior Hip Joint Innervation (accessory femoral nerve)



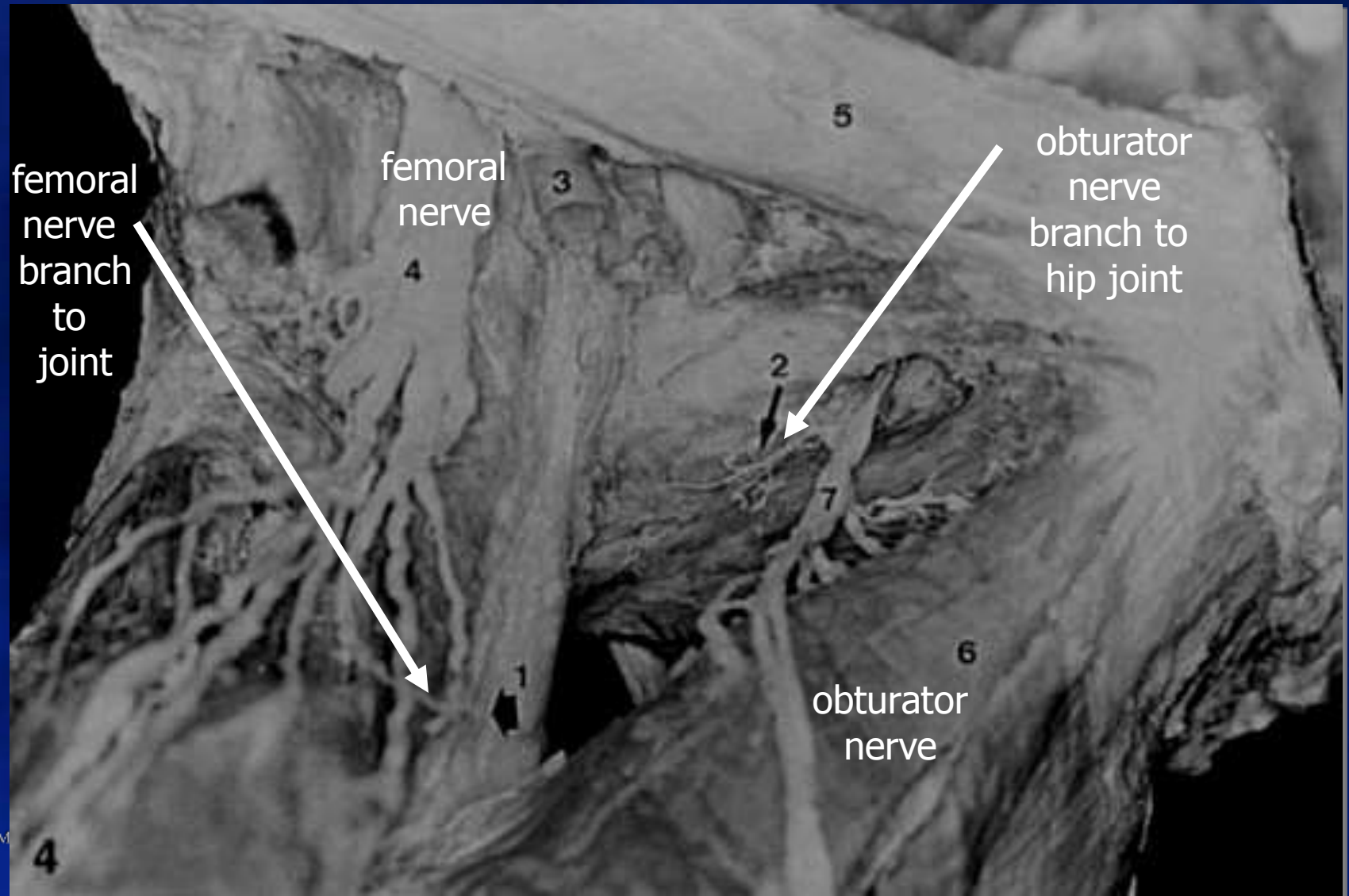
# Hip Joint Innervation- Anterior

## Articular branches of **obturator nerve**

- the obturator nerve innervates the anteromedial hip joint capsule
- its articular branches derive from its trunk or its anterior and posterior branches
- one articular branch of the obturator nerve passes posterolaterally over the external obturator muscle and runs between the adductor brevis & magnus muscles
- often femoral & obturator nerve innervation of the anterior hip joint capsule is present

# Anterior Hip Joint Innervation

*(2 femoral nerve branches & 1 obturator nerve branch)*



# Hip Joint Innervation-Posterior

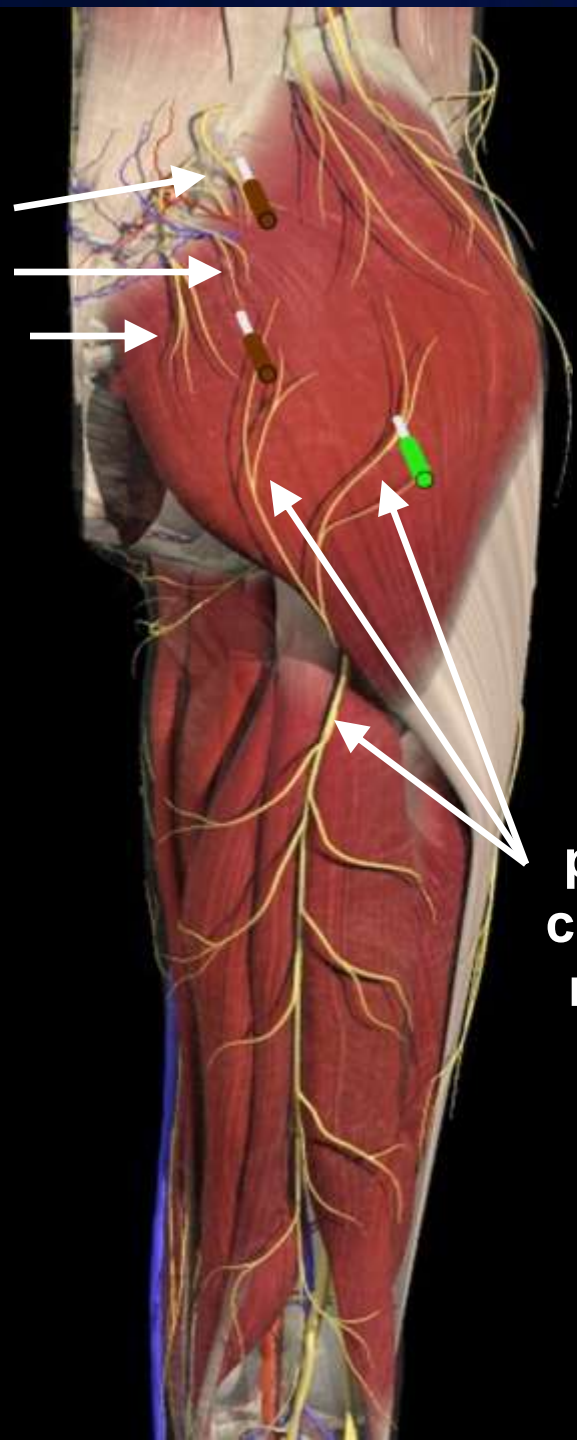
- the inferior portion of the posterior hip joint capsule is supplied by the articular branches (1-5) from the nerve to quadratus femoris muscle which arise at the level of the piriformis muscle
- the lateral portion of the of posterior hip joint capsule is supplied by articular branches from the superior gluteal nerve
- the superior portion of the posterior hip joint capsule may also be directly innervated by the sciatic nerve

# Posterior Hip Points

S1  
S2  
S3

BL-53  
BL-54  
GB-30

posterior  
cutaneous  
nerve of  
thigh



# Posterior Hip Points (deeper muscles)

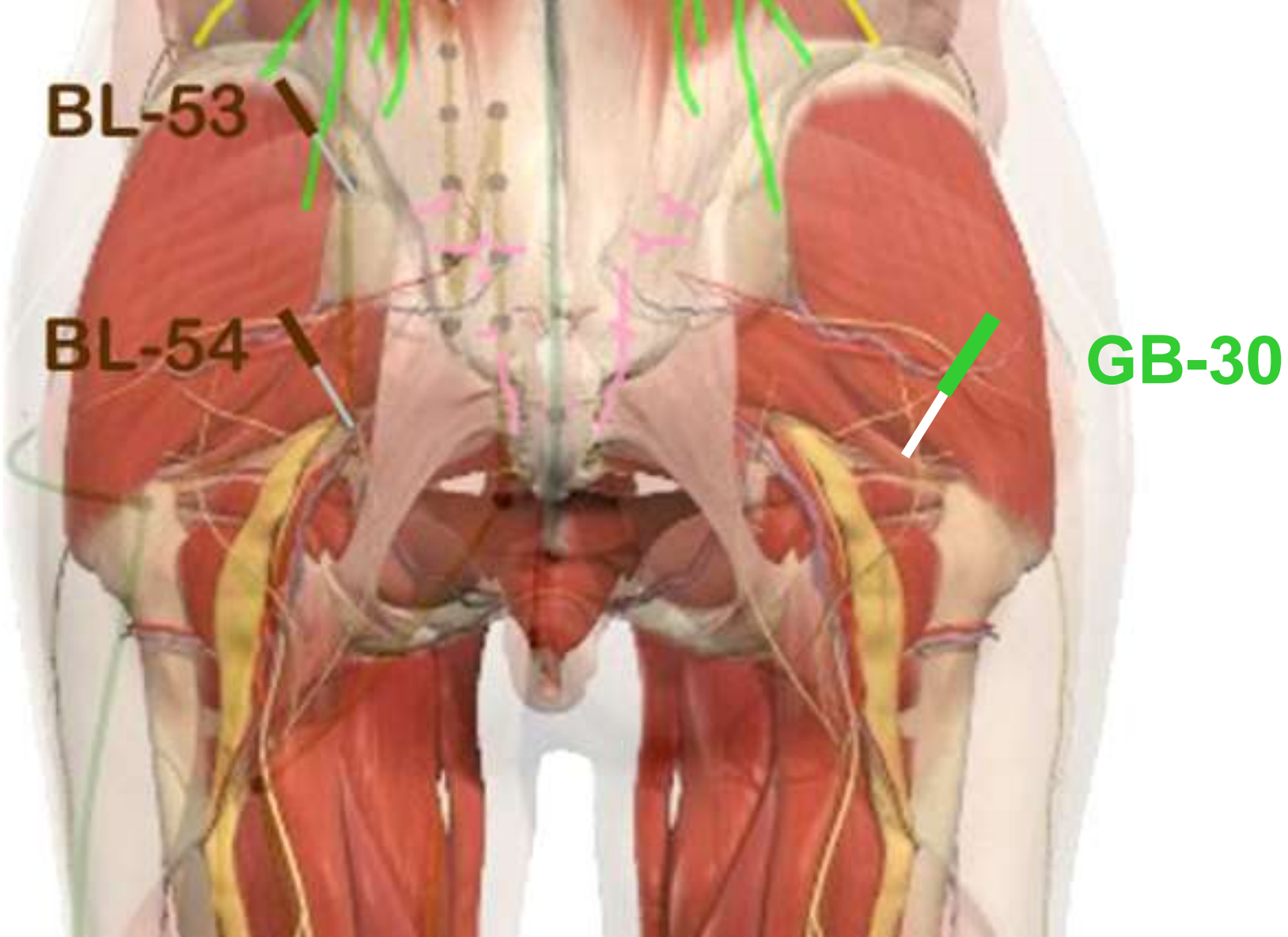


**BL-53**

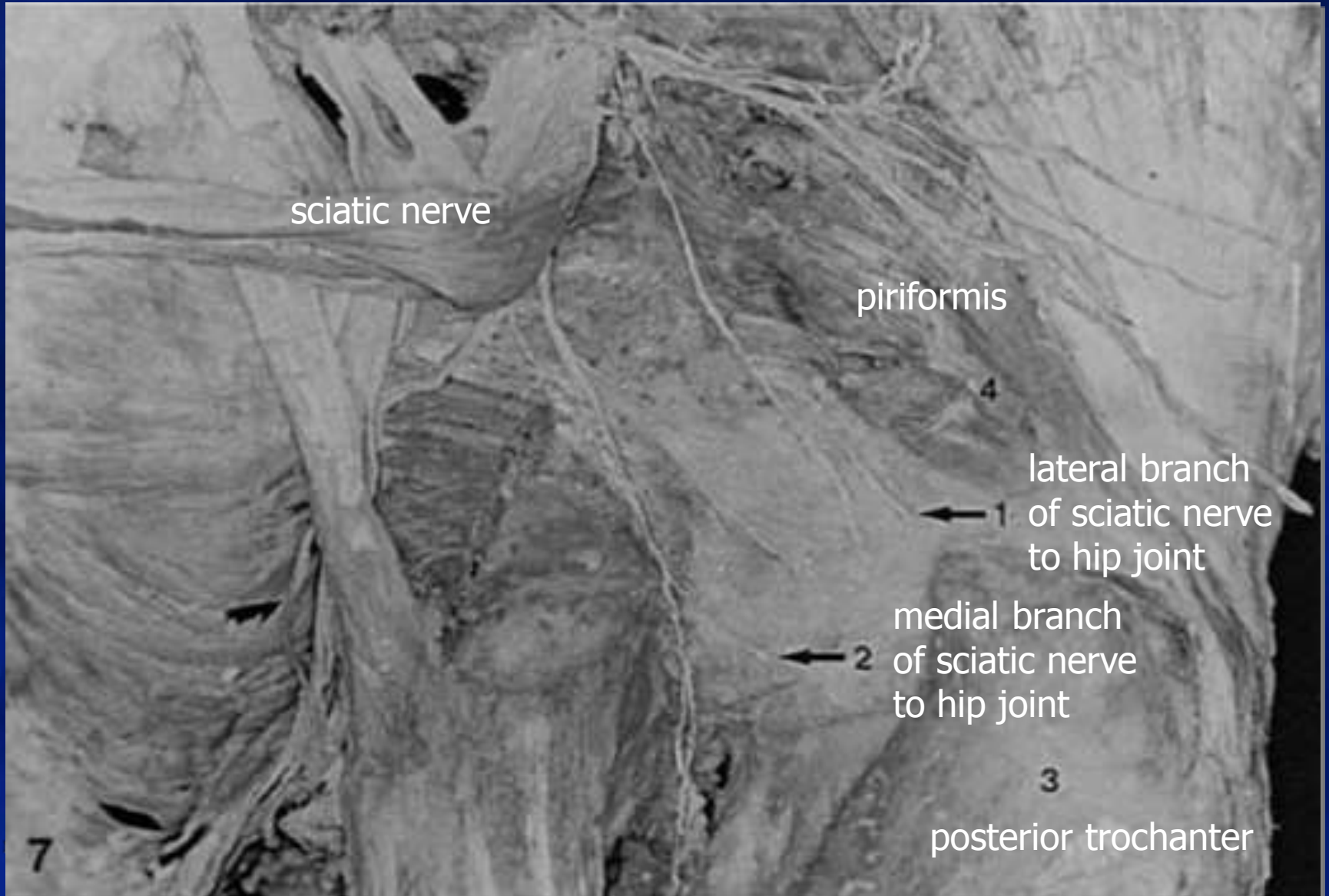
**BL-54**

**GB-30**

# Posterior Hip Pain Point Selections



# Posterior Hip Joint Innervation





# Hip Acupoint Selections

<b>Muscle Trigger Point</b>	<b>Corresponding Acupoint</b>	<b>Nerve Influenced</b>
<b>Gluteus medius, gluteus minimus</b>	<b>BL-53</b>	<b>cluneal S1-2 dorsal roots</b>
<b>Gluteus maximus, piriformis</b>	<b>BL-54</b>	<b>sciatic, cluneal S2-3 dorsal roots</b>
<b>Gluteus maximus, piriformis</b>	<b>GB-30</b>	<b>sciatic, posterior cutaneous nerve of thigh</b>
<b>Adductor longus and brevis</b>	<b>LR-11</b>	<b>obturator, genitofemoral</b>
<b>Iliopsoas, distal</b>	<b>SP-12</b>	<b>femoral</b>

# Hip Acupoint Indications

<b>Acupoint</b>	<b>Actions</b>	<b>Indications</b>
<b>BL-53</b>	<b>Activates the Bladder channel, alleviates pain</b>	<b>hip movement decreased, sciatica</b>
<b>BL-54</b>	<b>Activates the Bladder channel, alleviates pain</b>	<b>gluteal muscle pain, sciatica</b>
<b>GB-30</b>	<b>Meeting point Gallbladder and Bladder channel, activates the channel, alleviates pain</b>	<b>groin pain, hip pain, sciatica</b>
<b>LR-11</b>	<b>Yin Corner, benefits the uterus</b>	<b>hip movement decreased</b>
<b>SP-12</b>	<b>Regulates Qi, alleviates pain</b>	<b>hernia pain, hip movement inhibited</b>

<b>Hip Points</b>	<b>Point Descriptions</b>
<b>BL-53</b>	<b>In the buttocks in the depression 3 cun lateral to second sacral foramen</b>
<b>BL-54</b>	<b>In the buttock in the depression 3 cun lateral to fourth sacral foramen</b>
<b>GB-30</b>	<b>In the buttock region 1/3 the distance from the greater trochanter to the sacral sulcus</b>
<b>LR-11</b>	<b>In the proximal anterior thigh, on the lateral border of the adductor longus muscle 1 cun from its attachment on the pubic symphysis and 2 cun inferior to ST-30</b>
<b>SP-12</b>	<b>In the inguinal area 3.5 cun lateral to midline of the superior border of pubic symphysis lateral to femoral artery</b>

# Knee Joint

**The Answers (Points) First**

***Treat the Nerves to Treat the Pain!***

# Knee Acupoint Selections - Anterior

**GB-34**  
**infrapatellar  
point**  
**SP-10**  
**ST-34**

intermediate  
cutaneous  
nerve of thigh

**ST-34**

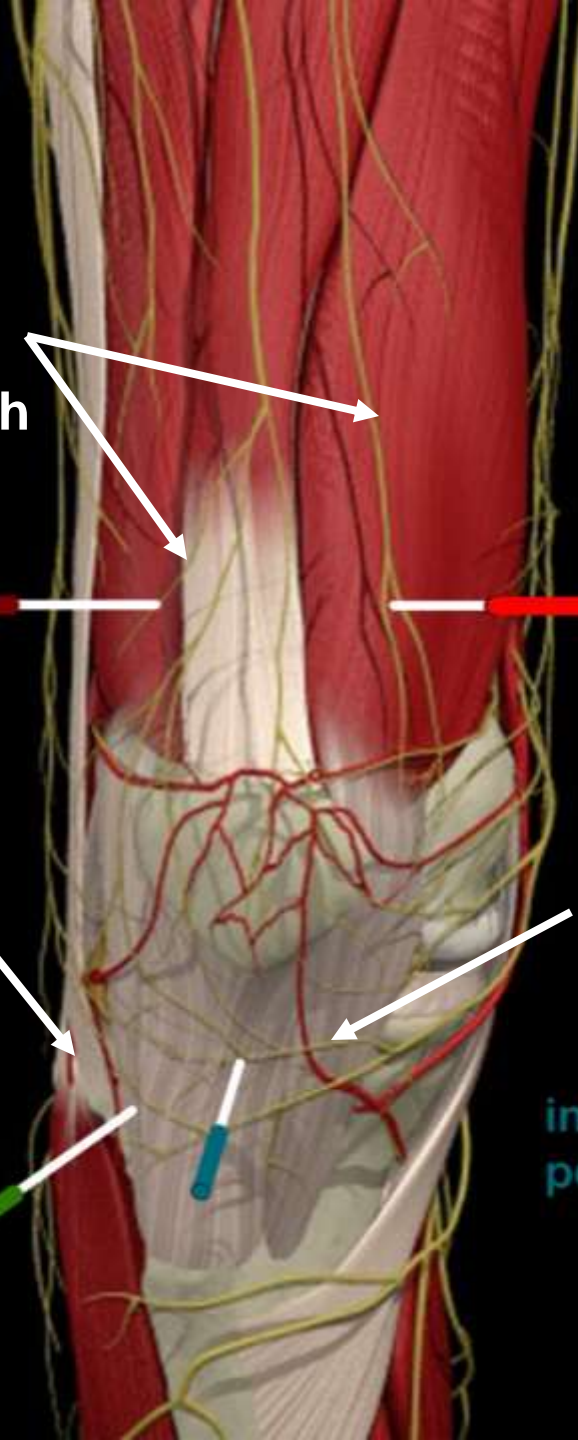
**SP-10**

lateral  
cutaneous  
nerve of  
thigh

infrapatellar  
branch of  
saphenous  
nerve

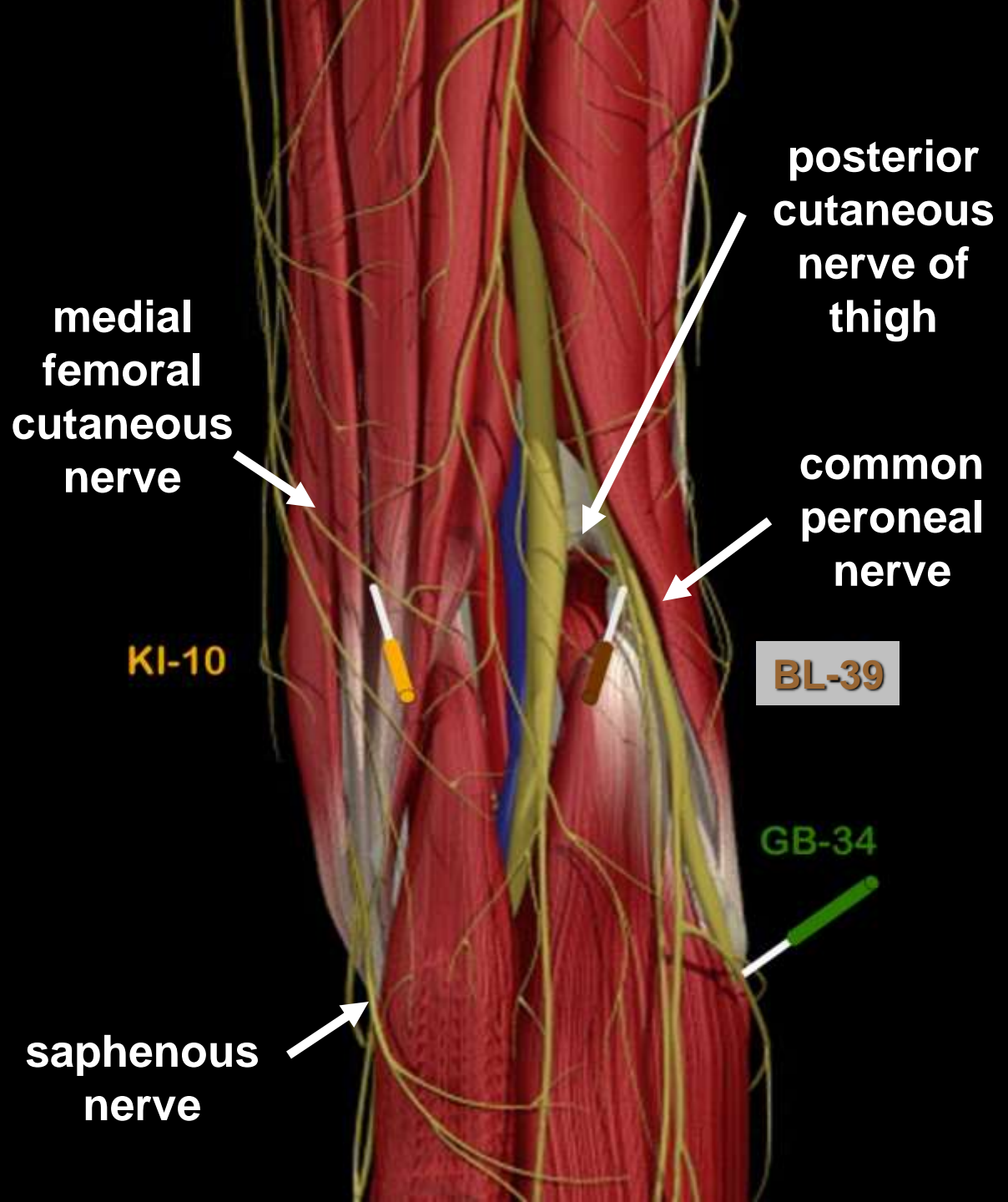
**GB-34**

infrapatellar  
point



# Knee Acupoint Selections - Posterior

BL-39  
GB-34  
KI-10



# Why These Points?

*Neuroanatomic Basis*

# Knee Joint

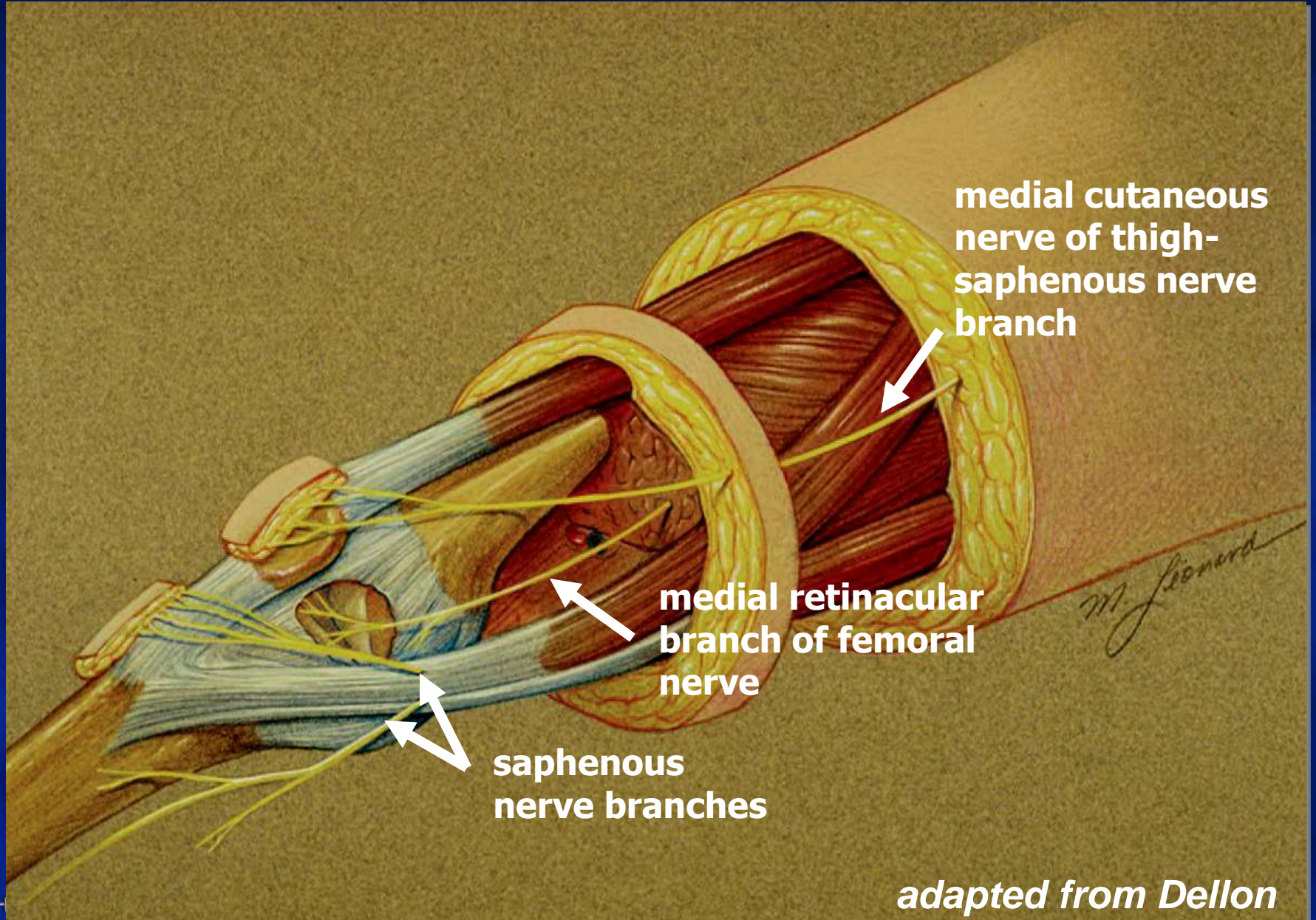
- femoral nerve → superior knee structures
- femoral nerve → medial retinacular nerve → medial knee structures
- sciatic nerve → lateral retinacular nerve → lateral knee structures
- sciatic nerve → posterior knee structures
- saphenous nerve (medial) and peroneal nerve (lateral) branches → inferior knee structures



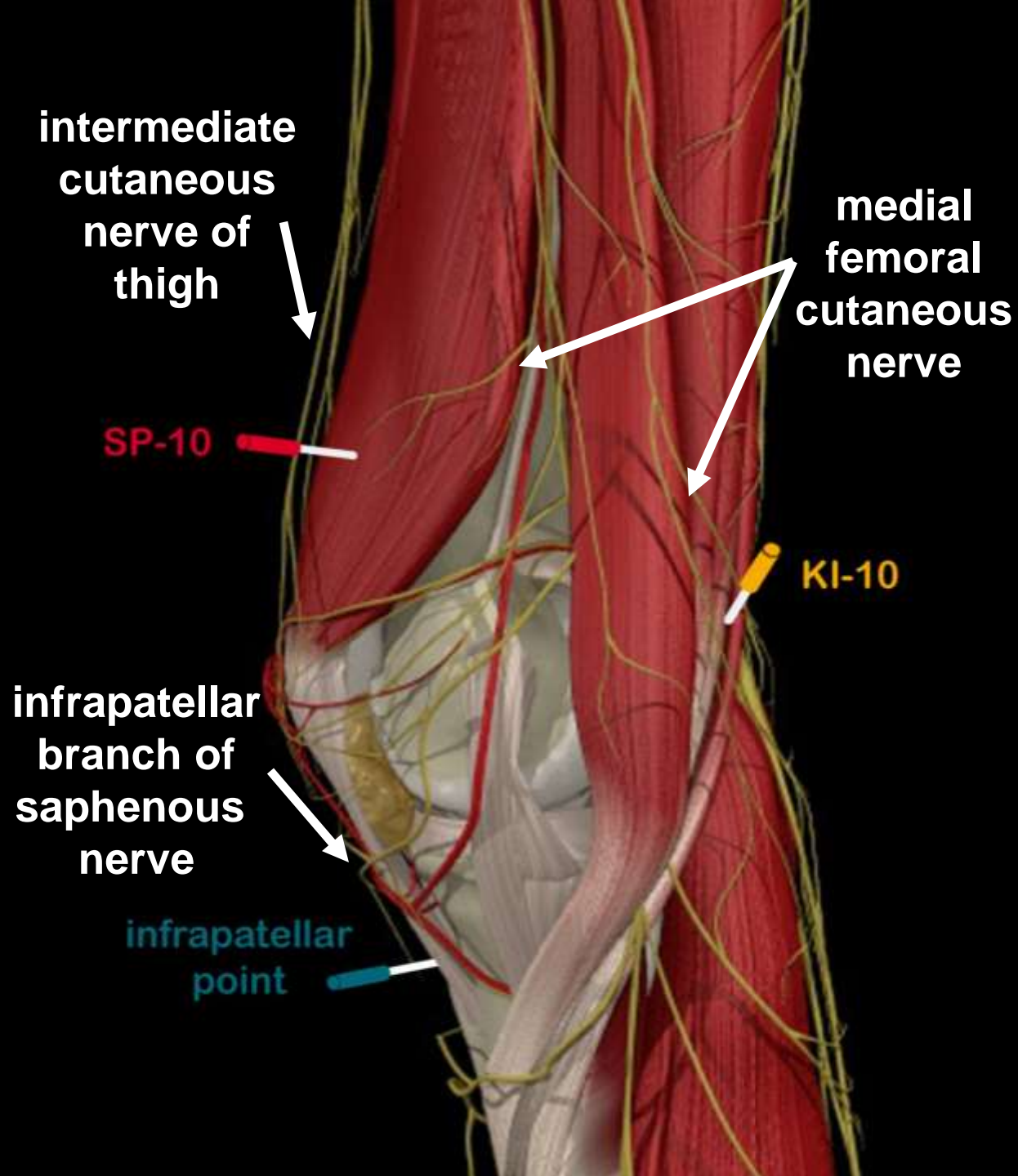
# **Knee Joint Innervation- Medial** *medial retinacular nerve*

- **after providing innervation to the vastus medialis muscle, the femoral nerve continues deep and distal to the vastus medialis as the medial retinacular nerve**
- **this nerve passes deep to the medial retinaculum and becomes related to the medial recurrent geniculate artery & vein**
- **innervates medial ligamentous structures of knee and undersurface of medial aspect of the patella**

# Knee Joint Innervation- Medial



# Knee Acupoint Selections- Medial

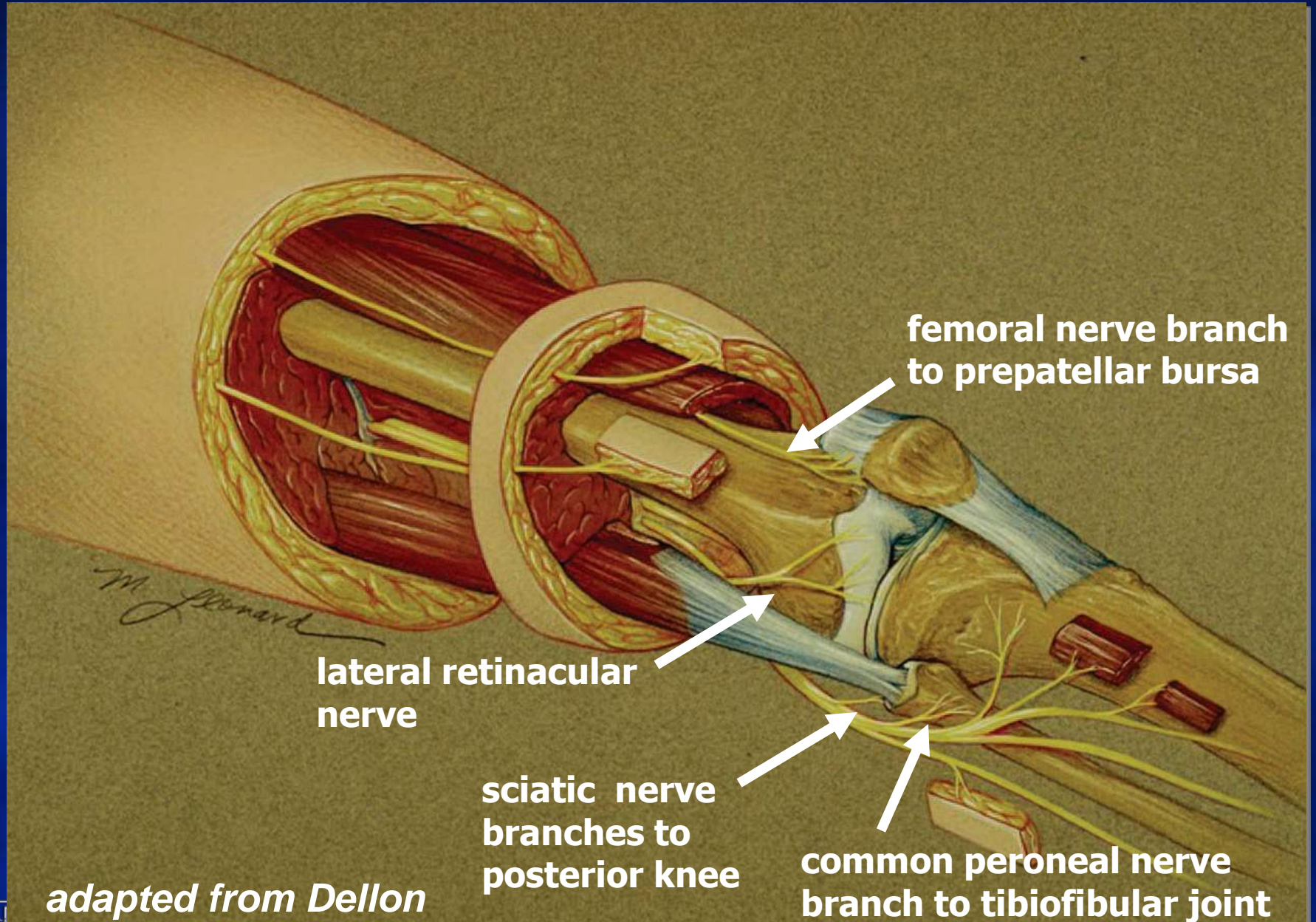


# **Knee Joint Innervation- Lateral**

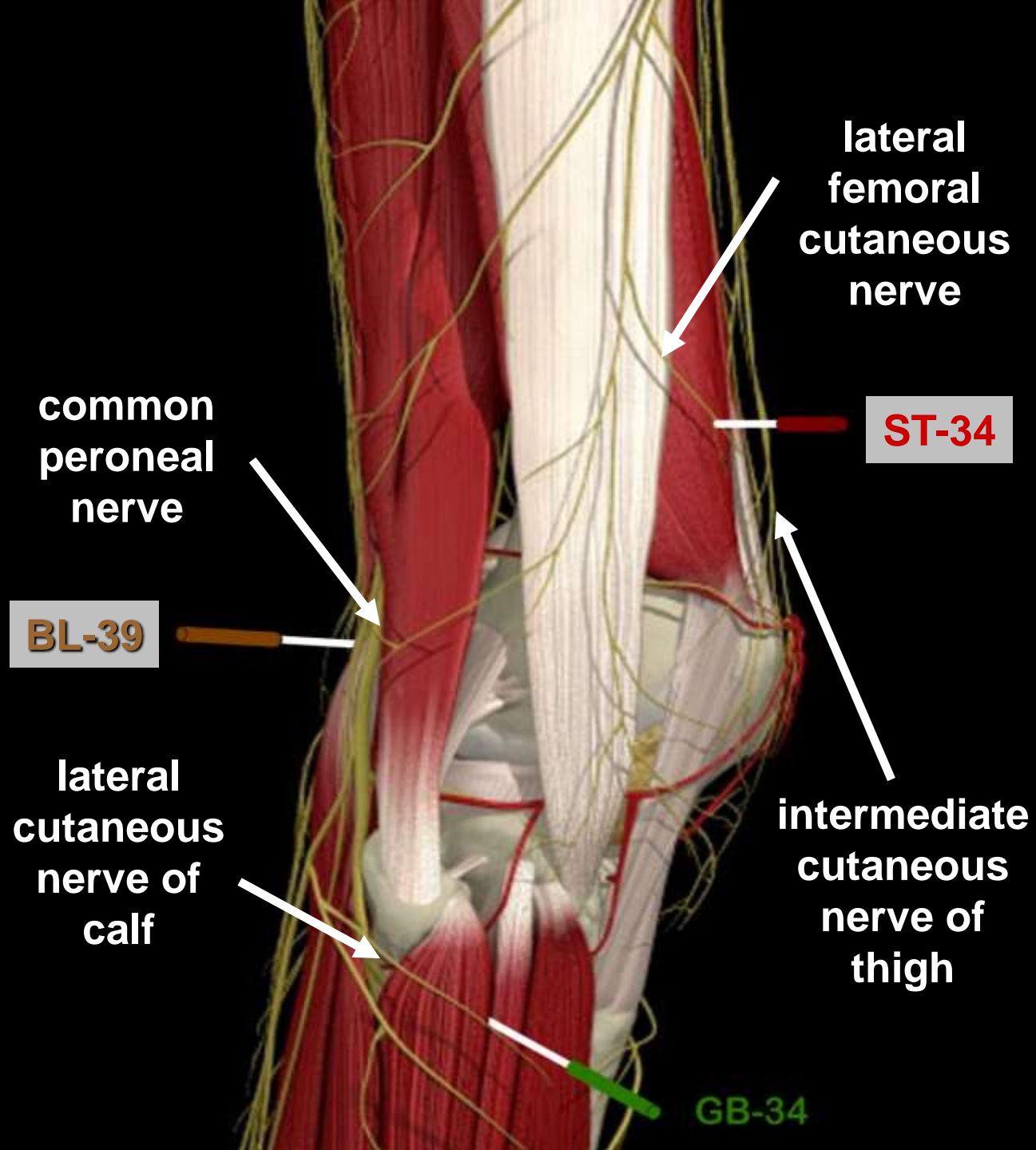
## ***lateral retinacular nerve***

- **a sciatic nerve branch, the lateral retinacular nerve, leaves the popliteal fossa, travels laterally and anteriorly, to emerge deep to the biceps tendon and enter the space beneath the lateral retinaculum**
- **nerve enters the ligamentous structures of the lateral knee and travels to the midline to innervate the undersurface of the lateral aspect of the patella**

# Knee Joint Innervation- Lateral



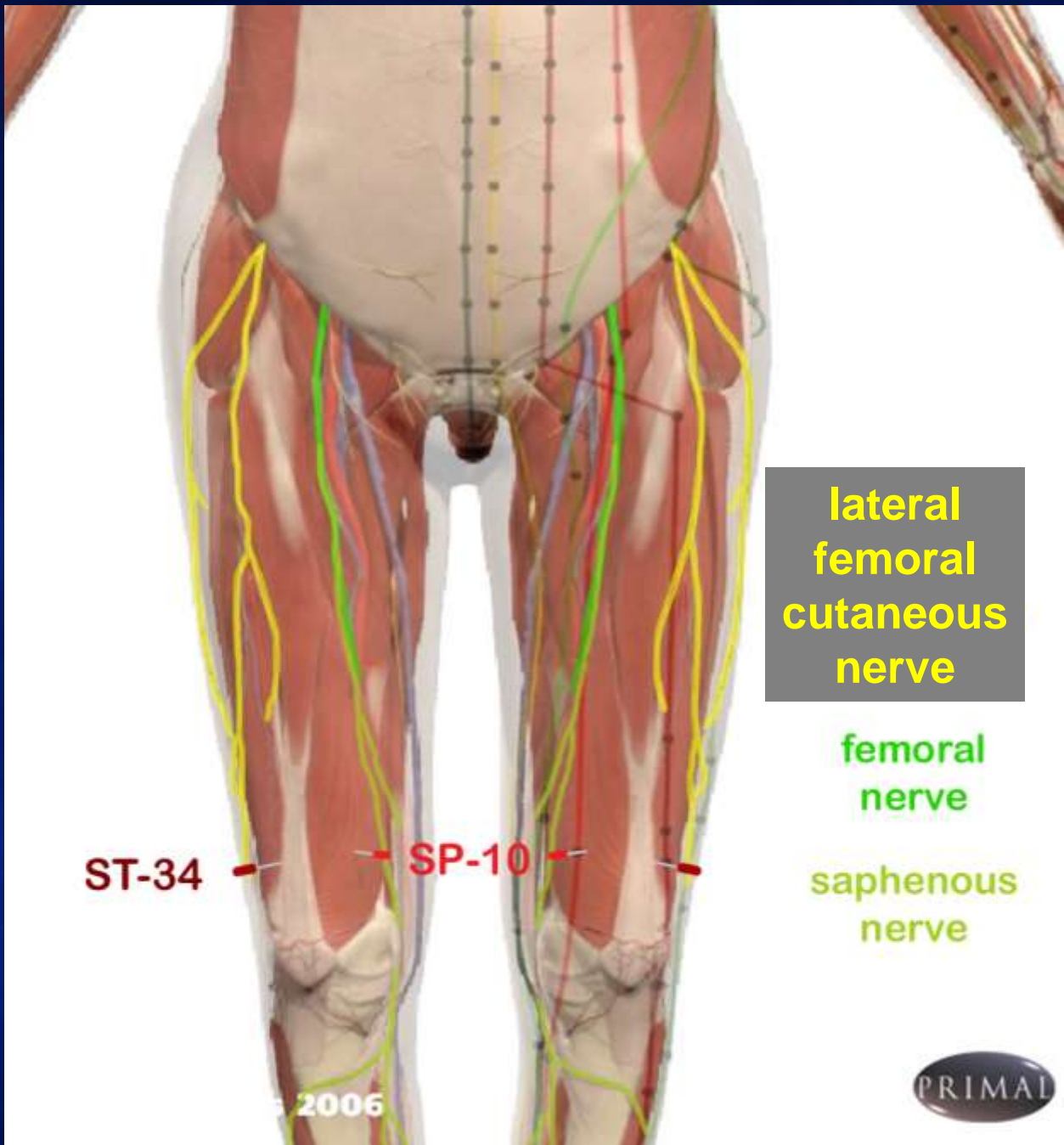
# Knee Acupoint Selections -Lateral



# **Knee Joint Innervation- Anterior & Posterior Aspects**

- **anteriorly, a femoral nerve branch that innervates the vastus intermedius then continues on the surface of the femur periosteum to innervate the tissues around the prepatellar bursa**
- **posteriorly, sciatic nerve branches enter the posterior knee joint capsule**
- **common peroneal nerve gives a branch to the tibiofibular joint posteriorly and also anteriorly as it wraps around the fibular head**

**Relationship of  
Lateral Femoral  
Cutaneous Nerve,  
Femoral Nerve,  
and Saphenous  
Nerve  
To Quadriceps  
Muscles**





# Knee Acupoint Selections- Anterior

intermediate  
cutaneous  
nerve of thigh

ST-34

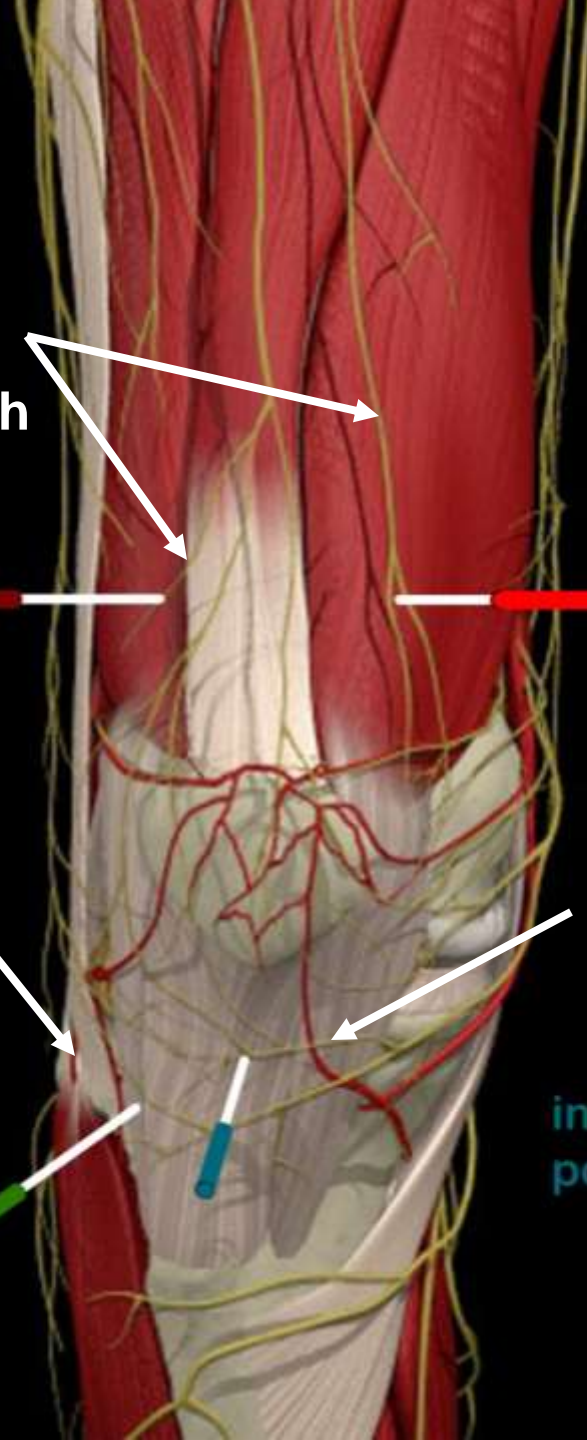
SP-10

lateral  
cutaneous  
nerve of  
thigh

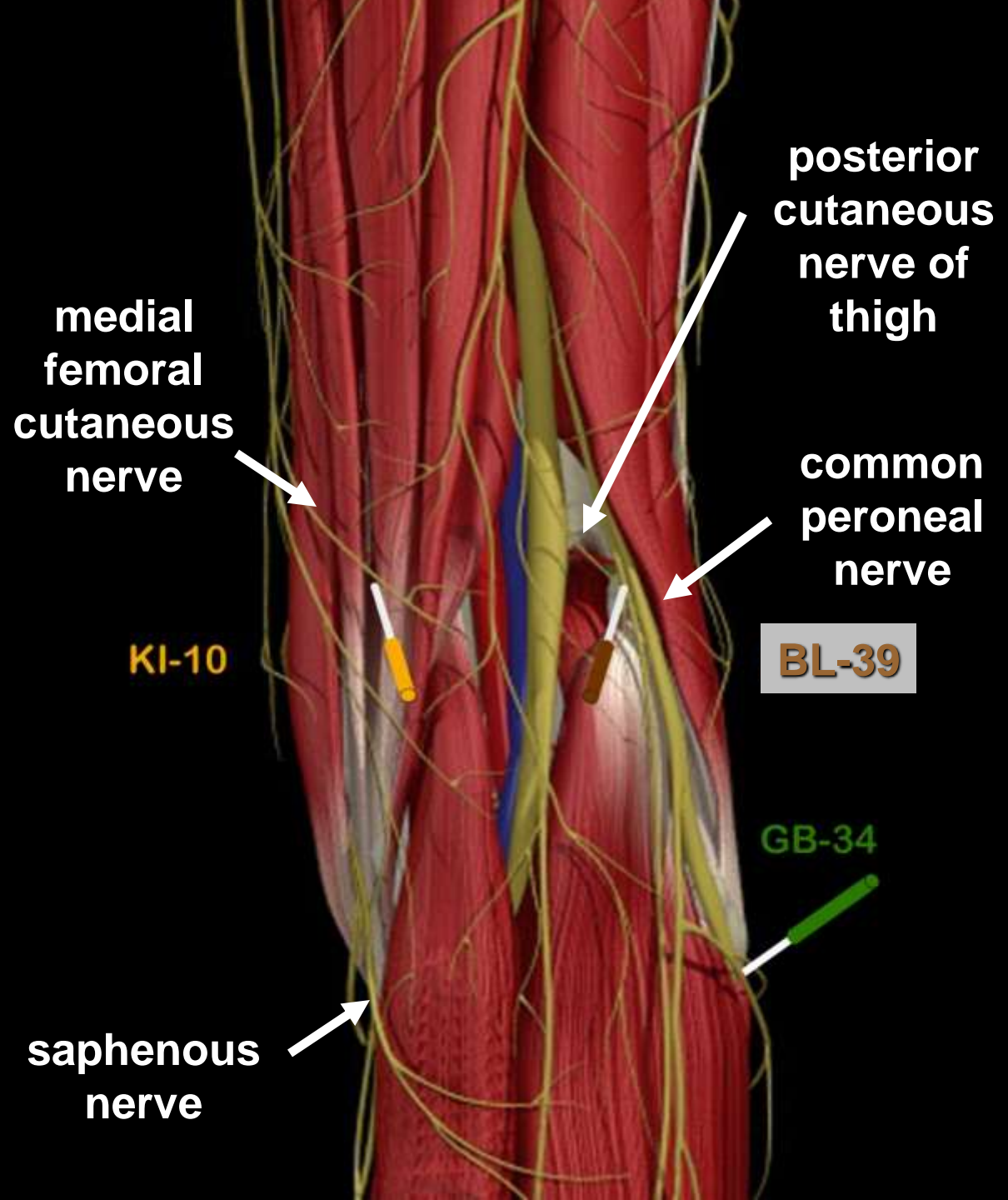
infrapatellar  
branch of  
saphenous  
nerve

GB-34

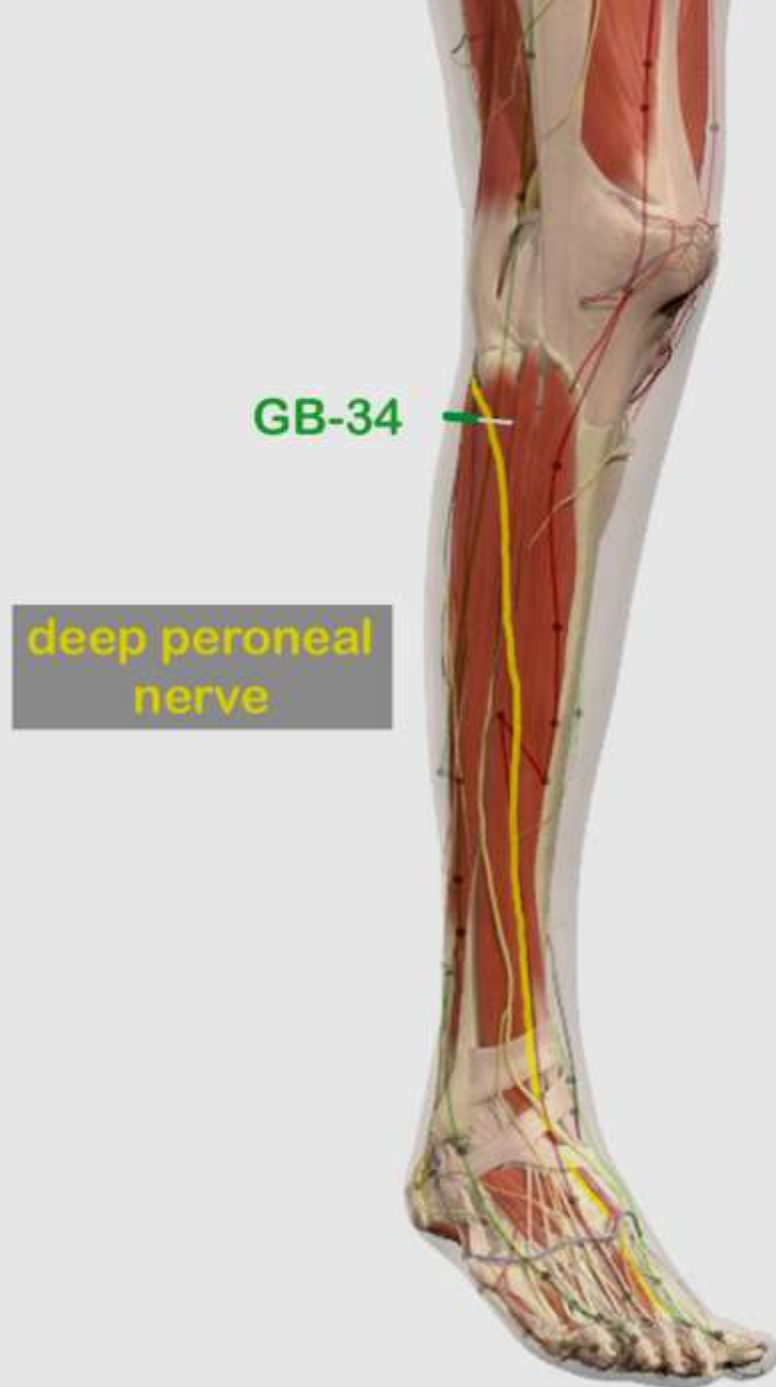
infrapatellar  
point



# Knee Acupoint Selections- Posterior



# Relationship of Peroneal Nerve to Peroneal Musculature



# Relationship of saphenous and peroneal nerves to posterior knee

posterior cutaneous nerve of thigh

KI-10

saphenous nerve

tibial nerve

BL-39

peroneal nerve

GB-34

sural nerve



# Knee Point Selections

<b>Muscle Trigger Point</b>	<b>Corresponding Acupoint</b>	<b>Nerve Affected</b>
vastus medialis	SP-10	femoral nerve, medial retinacular nerve
medial gastrocnemius	KI-10	saphenous nerve
vastus lateralis	ST-34	lateral femoral cutaneous nerve
lateral gastrocnemius	BL-39	common peroneal nerve, lateral retinacular nerve
peroneus longus	GB-34	common peroneal nerve
n/a	infrapatellar point	branch of saphenous nerve

# Knee Point Selections

<b>Acupoint</b>	<b>Actions</b>	<b>Indications</b>
<b>SP-10</b>	<b>“sea of blood”, dispels stasis</b>	<b>medial thigh pain</b>
<b>KI-10</b>	<b>He sea point on Kidney channel, activates channel, alleviates pain</b>	<b>knee disorders, medial thigh pain</b>
<b>ST-34</b>	<b>Xi cleft point on Stomach channel, activates the channel, alleviates pain</b>	<b>knee disorders</b>
<b>BL-39</b>	<b>Lower He sea point on Triple Energizer channel, activates channel, relieves pain</b>	<b>leg muscle cramp or paralysis</b>
<b>GB-34</b>	<b>Hui point for tendons and muscles, He sea point on Gallbladder channel, activates channel, relieves pain, benefits the joints</b>	<b>leg pain, knee disorders</b>

<b>Knee Points</b>	<b>Point Descriptions</b>
<b>SP-10</b>	<b>On the distal anterior medial thigh, 2 cun above the superomedial corner of the patella on the vastus medialis muscle</b>
<b>KI-10</b>	<b>In the medial knee crease in the depression between the tendons of the semimembranosus and semitendinosus muscles</b>
<b>ST-34</b>	<b>On the distal anterior lateral thigh, 2 cun above the superolateral corner of the patella on the vastus lateralis muscle</b>
<b>BL-39</b>	<b>In the popliteal fossa of knee, medial to the biceps femoris tendon</b>
<b>GB-34</b>	<b>On the lateral leg, in the depression anterior and inferior to the head of the fibula</b>
<b>infrapatellar point</b>	<b>In the center of the patellar ligament</b>

# Ankle

**The Answers (Points) First**

***Treat the Nerves to Treat the Pain!***



# Acupoint Selections

LR-4  
ST-41  
BL-60  
GB-40?

BL-60



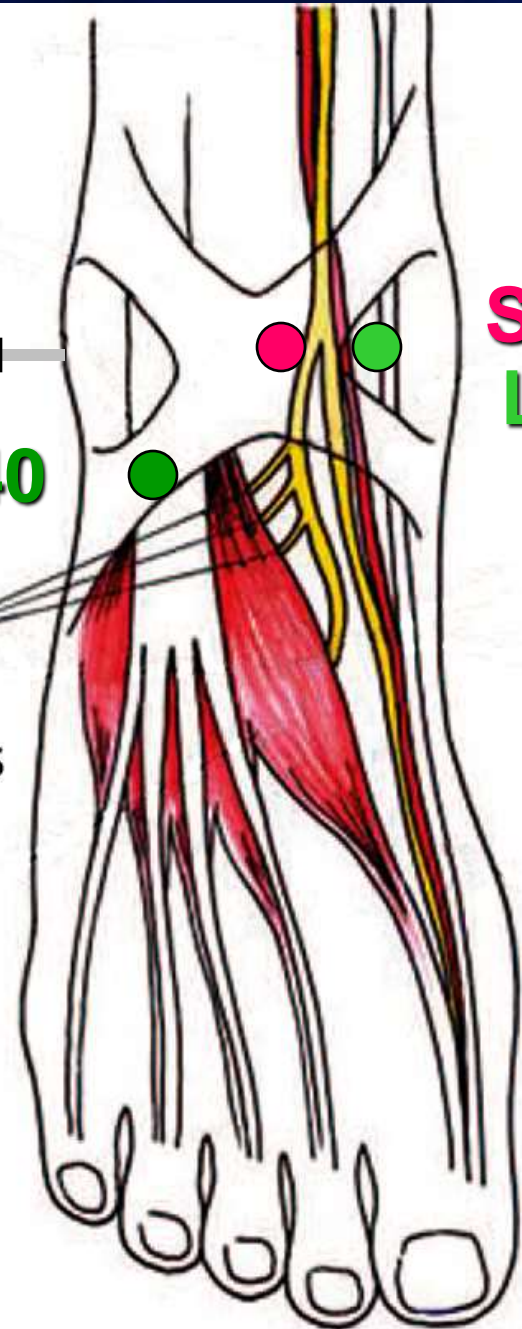
GB-40



ST-41

LR-4

deep peroneal  
nerve branches  
to sinus tarsi



# Why These Points?

*Neuroanatomic Basis*

# Ankle Sinus Tarsi Innervation

- detailed anatomical descriptions of the innervation of the sinus tarsi by the deep peroneal nerve were reported in 2001
- the sural nerve may provide innervation in 18 to 24 percent of the patients
- some subjects may have sinus tarsi innervation from both the deep peroneal and sural nerves

# Ankle Innervation

BL-60



GB-40

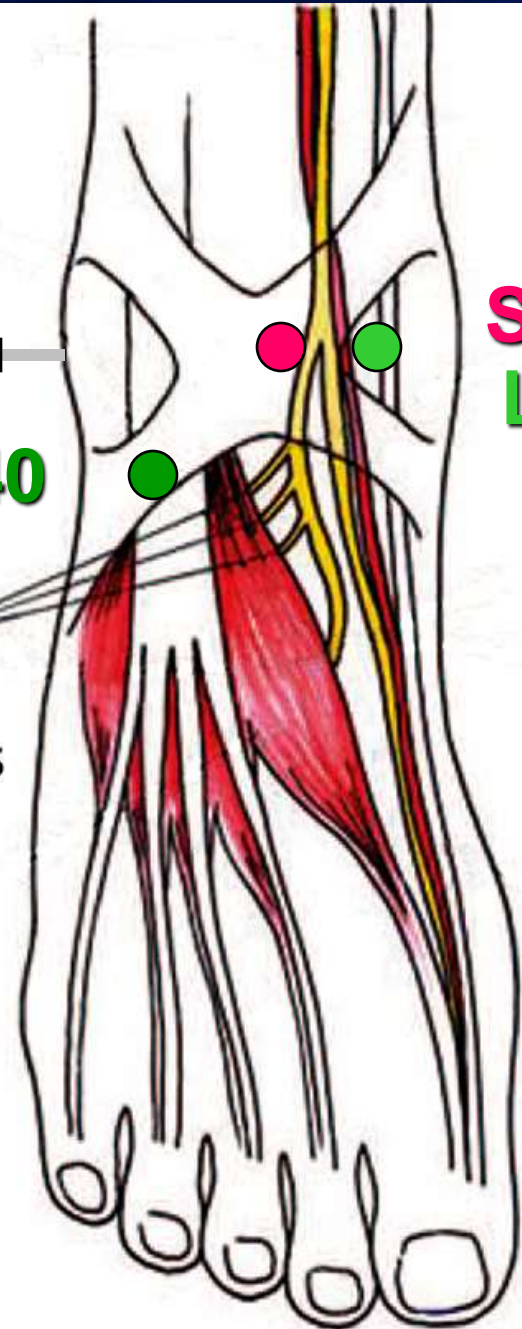


ST-41

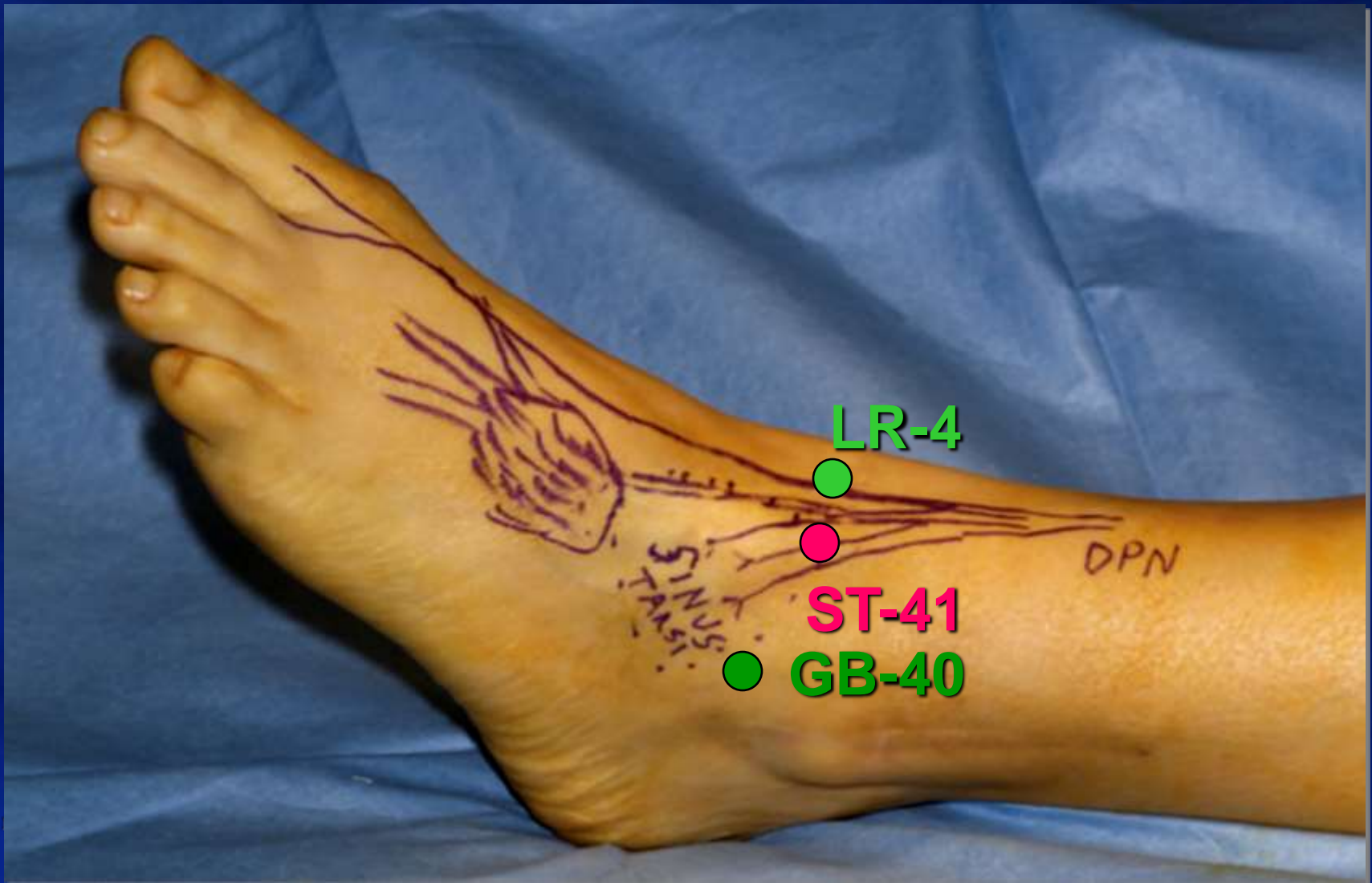
LR-4



deep peroneal  
nerve branches  
to sinus tarsi



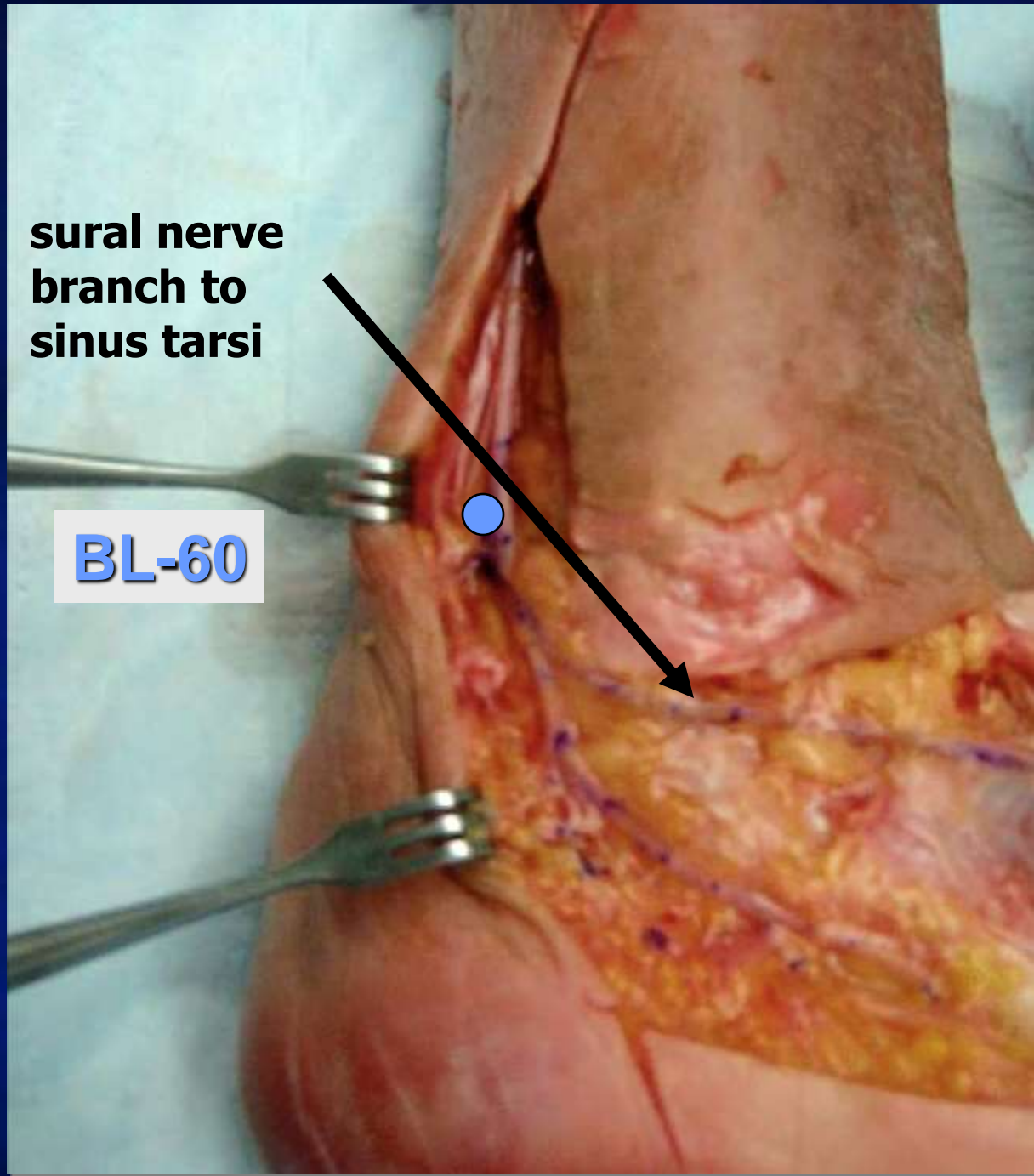
# Sinus Tarsi Innervation- *Deep Peroneal Nerve*



# Ankle Innervation

sural nerve  
branch to  
sinus tarsi

BL-60



# Ankle Acupoint Selections

<b>Muscle Trigger Point</b>	<b>Corresponding Acupoint</b>	<b>Nerve Influenced</b>
n/a	LR-4	deep peroneal
n/a	ST-41	deep peroneal
n/a	GB-40?	deep peroneal?
n/a	BL-60	sural

# Ankle Acupoint Indications

<b>Acupoint</b>	<b>Actions</b>	<b>Indications</b>
<b>LR-4</b>	<b>Spreads liver qi</b>	<b>Ankle conditions</b>
<b>ST-41</b>	<b>Activates the channel, alleviates pain</b>	<b>Ankle or dorsal foot pain and swelling</b>
<b>GB-40?</b>	<b>Activates the channel, alleviates pain, benefits the joints</b>	<b>Ankle conditions, leg pain</b>
<b>BL-60</b>	<b>Activates the channel, alleviates pain</b>	<b>Ankle pain, foot pain</b>



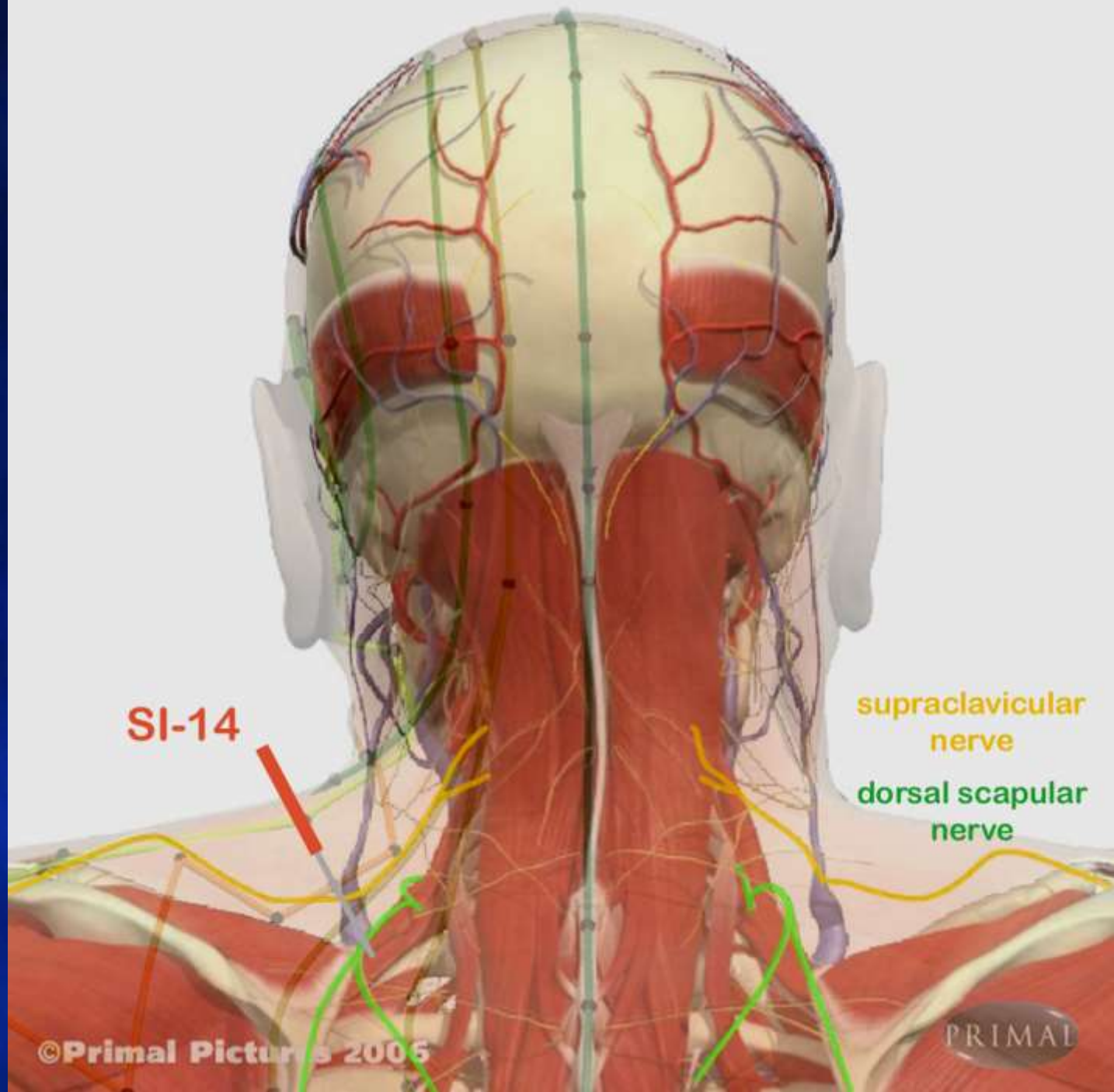
<b>Ankle points</b>	<b>Point Descriptions</b>
<b>LR-4</b>	<b>On the anterior ankle, 1 cun medial to medial malleolus, in the depression medial to the tibialis anterior tendon</b>
<b>ST-41</b>	<b>On the anterior ankle between the tendons of the extensor digitorum longus and extensor hallucis longus, level with the tip of the lateral malleolus</b>
<b>GB-40?</b>	<b>At the lateral ankle in the depression anterior and inferior to the lateral malleolus</b>
<b>BL-60</b>	<b>On the lateral ankle, in the depression half way between the lateral malleolus and the Achilles tendon</b>

# Treating Neck and Low Back Pain

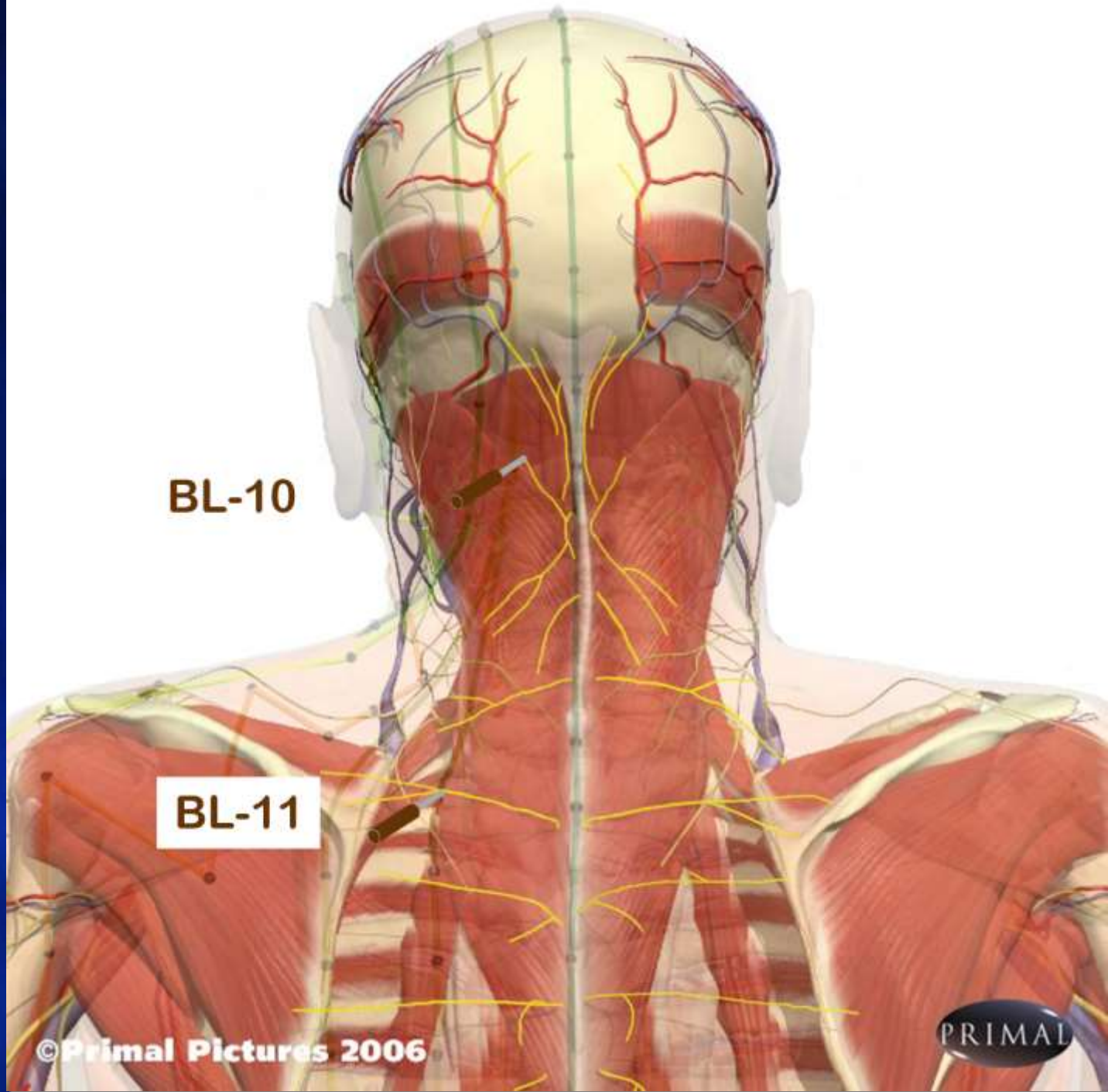
# Spine Pain Point Selections

<b>Muscle Trigger Point</b>	<b>Corresponding Acupoint</b>	<b>Nerve Affected</b>
<b>splenius capitis</b>	<b>BL-10</b>	<b>greater occipital</b>
<b>iliocostalis thoracis</b>	<b>BL-11</b>	<b>dorsal ramus T2</b>
<b>4 more according to tenderness on exam</b>	<b>varying but often including GB-21 &amp; SI-14</b>	<b>varying</b>

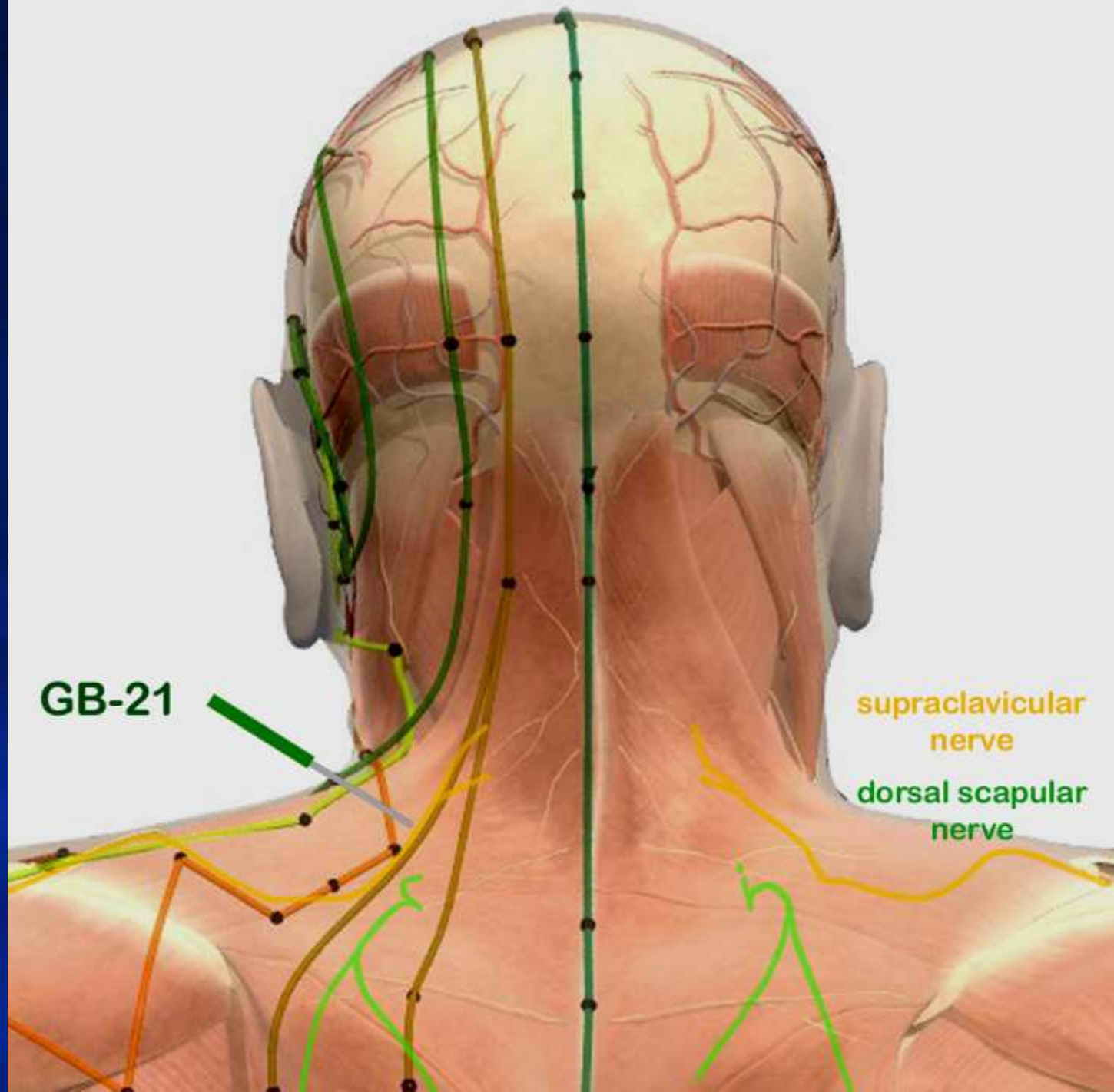
# Cervical Spine Pain Point Selections



# Cervical Spine Pain Point Selections



# Cervical Spine Pain Point Selections



# Neck Pain Point Indications

<b>Acupoint</b>	<b>Actions</b>	<b>Indications</b>
<b>BL-10</b>	<b>activates the channel alleviates pain</b>	<b>headache, neck muscle tension &amp; stiffness, shoulder &amp; back pain</b>
<b>BL-11</b>	<b>benefits the bones &amp; joints</b>	<b>arthritis, neck pain, lumbar pain</b>
<b>SI-14</b>	<b>activates the channel alleviates pain</b>	<b>neck movement restricted, shoulder pain, mid-back pain</b>
<b>GB-21</b>	<b>activates the channel alleviates pain</b>	<b>neck pain/stiffness, arm motor impairment</b>

# Acupuncture Points

*to enhance treatment results*



# Important Classical Acupoints

## Local Points

- BL-10
- GB-20
- GB-21
- SI-14
- SI-11
- SI-9
- GV-14

## Distal Points

- SI-3
- LI-4
- TE-5
- LU-7
- BL-60
- GB-34

# Important Classical Acupoints

## Local Points

## Indications

- **BL-10**
  - Occipital headache, pain of neck, shoulder and back
- **GB-20**
  - One-sided and generalized headache, pain of neck, shoulder and upper back
- **GB-21**
  - Neck pain/stiffness, pain of the shoulder and back
- **SI-14**
  - Shoulder/scapula pain, generalized painful obstruction
- **SI-11**
  - Shoulder/scapula pain, upper arm pain
- **SI-9**
  - Shoulder/scapula pain, upper arm pain
- **GV-14**
  - Stiffness of neck and nape, pain in back of shoulder

# Acupoints- Muscle Relationships

## Local Points

- **BL-10**
- **GB-20**
- **GB-21**
- **SI-14**
- **SI-11**
- **SI-9**
- **GV-14**

## Muscles Influenced

- **Splenius capitis, semispinalis capitis**
- **Splenius capitis, semispinalis capitis**
- **Trapezius upper fibers**
- **Levator scapula**
- **Infraspinatus**
- **Teres major**
- **Autonomic outflow to head and neck**

# Acupoints- Nerve Relationships

## Local Points

## Nerve Influenced

- **BL-10**
  - **GB-20**
  - **GB-21**
  - **SI-14**
  - **SI-11**
  - **SI-9**
  - **GV-14**
- **Greater occipital (C2)**
  - **Lesser occipital (C2, C3)**
  - **Spinal accessory, C3, C4**
  - **Segmental innervation (C3-6), dorsal scapular nerve (C5, often C4)**
  - **Suprascapular nerve (C5,C6)**
  - **Lower subscapular nerve (C6, C7), deep ulnar nerve (C8,T1)**
  - **C8, spinal accessory nerve, C3, C4, autonomic outflow to head and neck**

# Important Classical Acupoints

## Distal Points

- **SI-3**
- **LI-3**
- **TE-5**
- **LU-7**
- **BL-60**
- **GB-34**

## Indications

- Stiffness/pain of neck, pain of the back and shoulder
- Acute stiff neck
- Stiff neck, pain of shoulder and back
- Headache and stiffness of the neck and nape, shoulder pain
- Headache, stiff neck, contraction of the shoulder and back
- Stiffness of the neck and shoulders

Deadman, O'Connor & Bensky

# Important Classical Acupoints

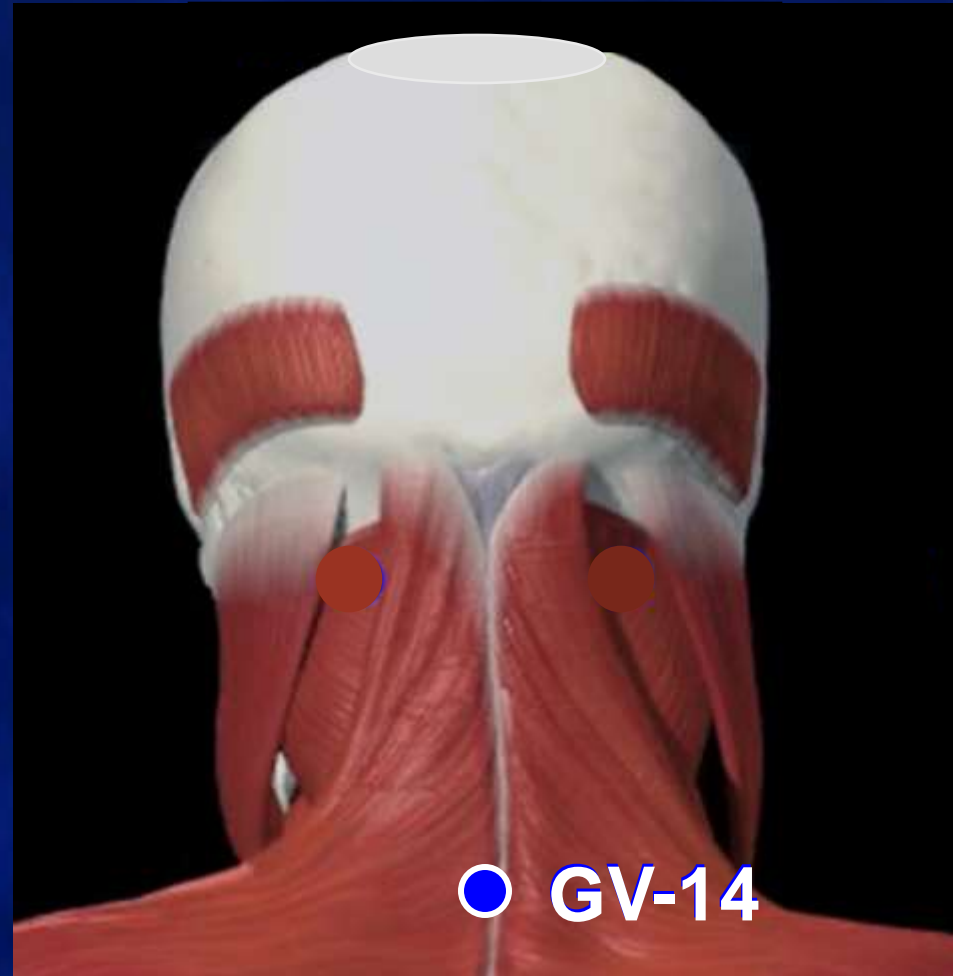
## Distal Points

## Nerves Influenced

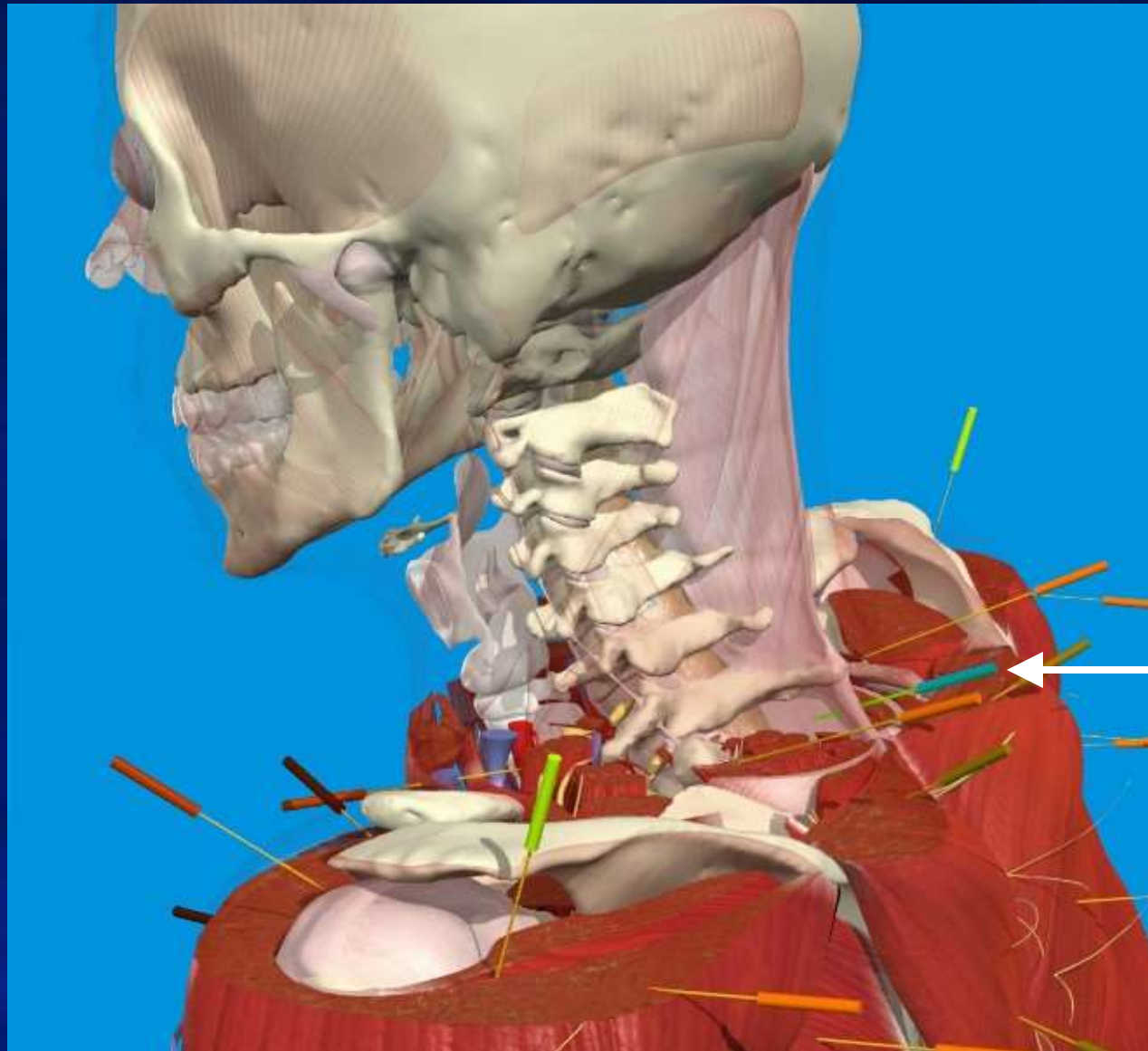
- **SI-3**
  - Ulnar (C7, C8, T1)
- **LI-3**
  - Radial (C6), ulnar (C7, C8, T1)
- **TE-5**
  - Posterior interosseus nerve (C6, C7, C8)
- **LU-7**
  - Lateral antebrachial cutaneous nerve (C6, C7)
- **BL-60**
  - Sural (S1, S2)
- **GB-34**
  - Peroneal (L4, L5, S1, S2)

# Governor Vessel - 14

- located in the midline on the C7-T1 interspinous ligament
- normalizes sympathetic outflow to head, neck, and upper extremities



# GV-14 Cross-Sectional Anatomy

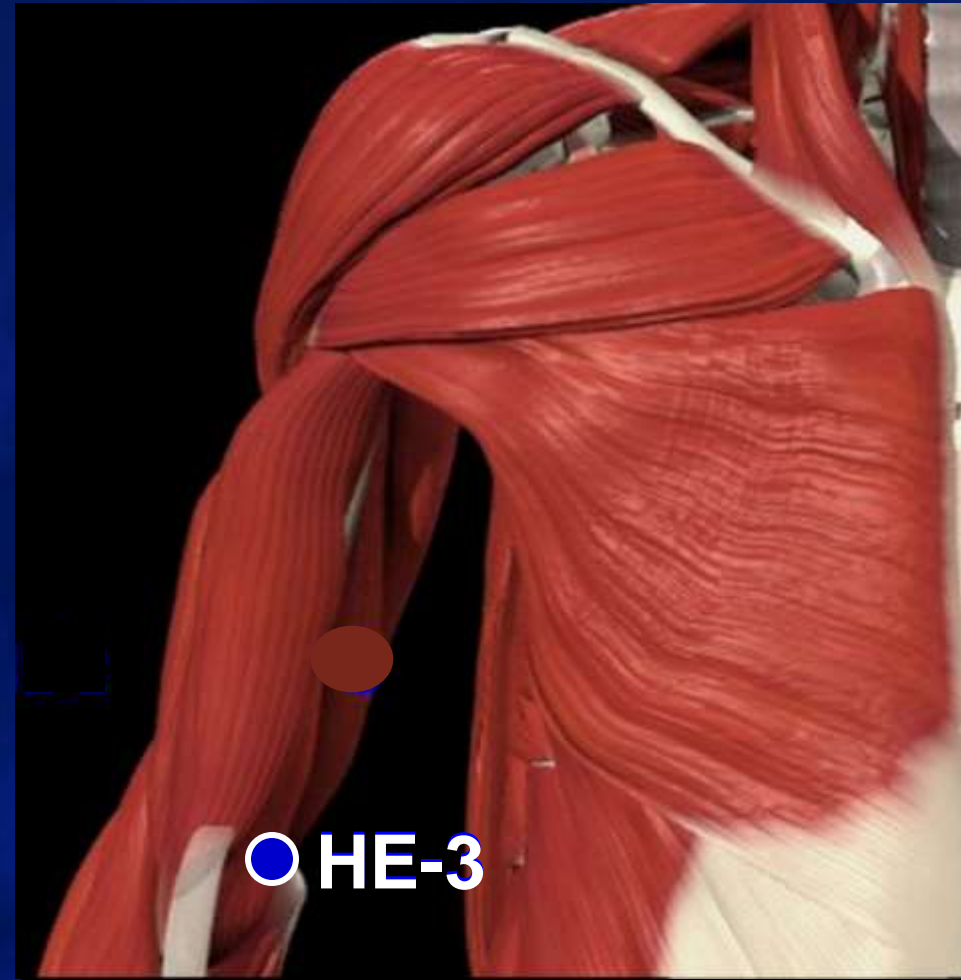


GV-14



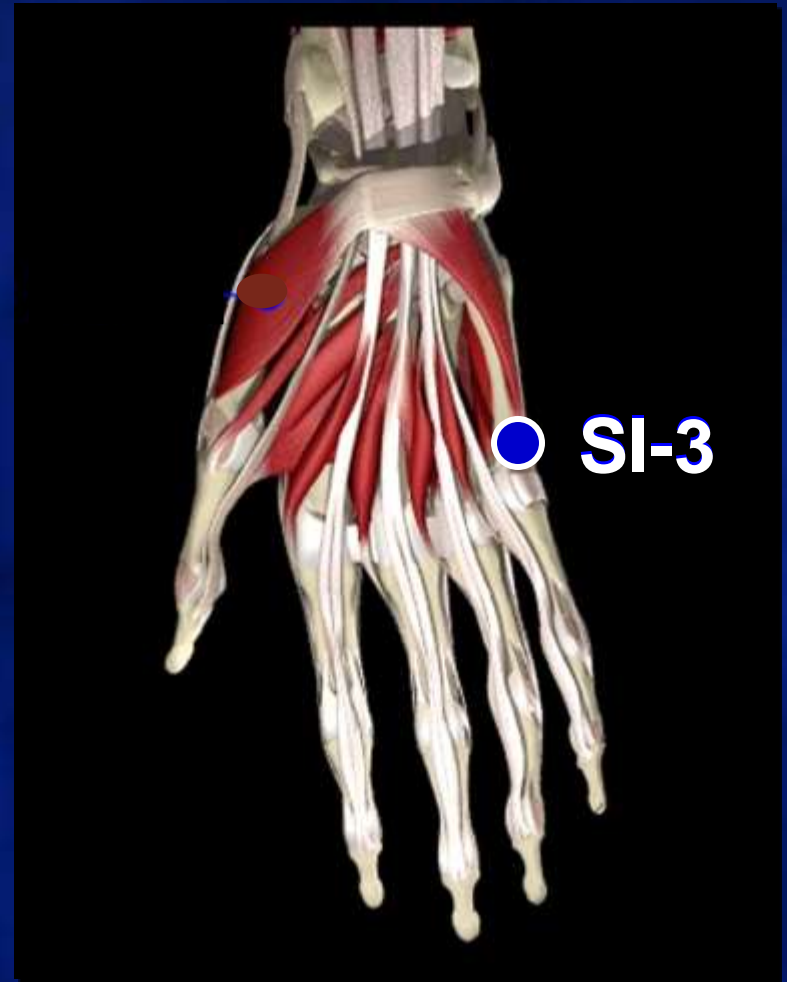
# Heart - 3

- located halfway between the biceps tendon and the medial humeral epicondyle in the transverse cubital crease of the elbow
- use to treat stiff neck & numbness of the upper limb

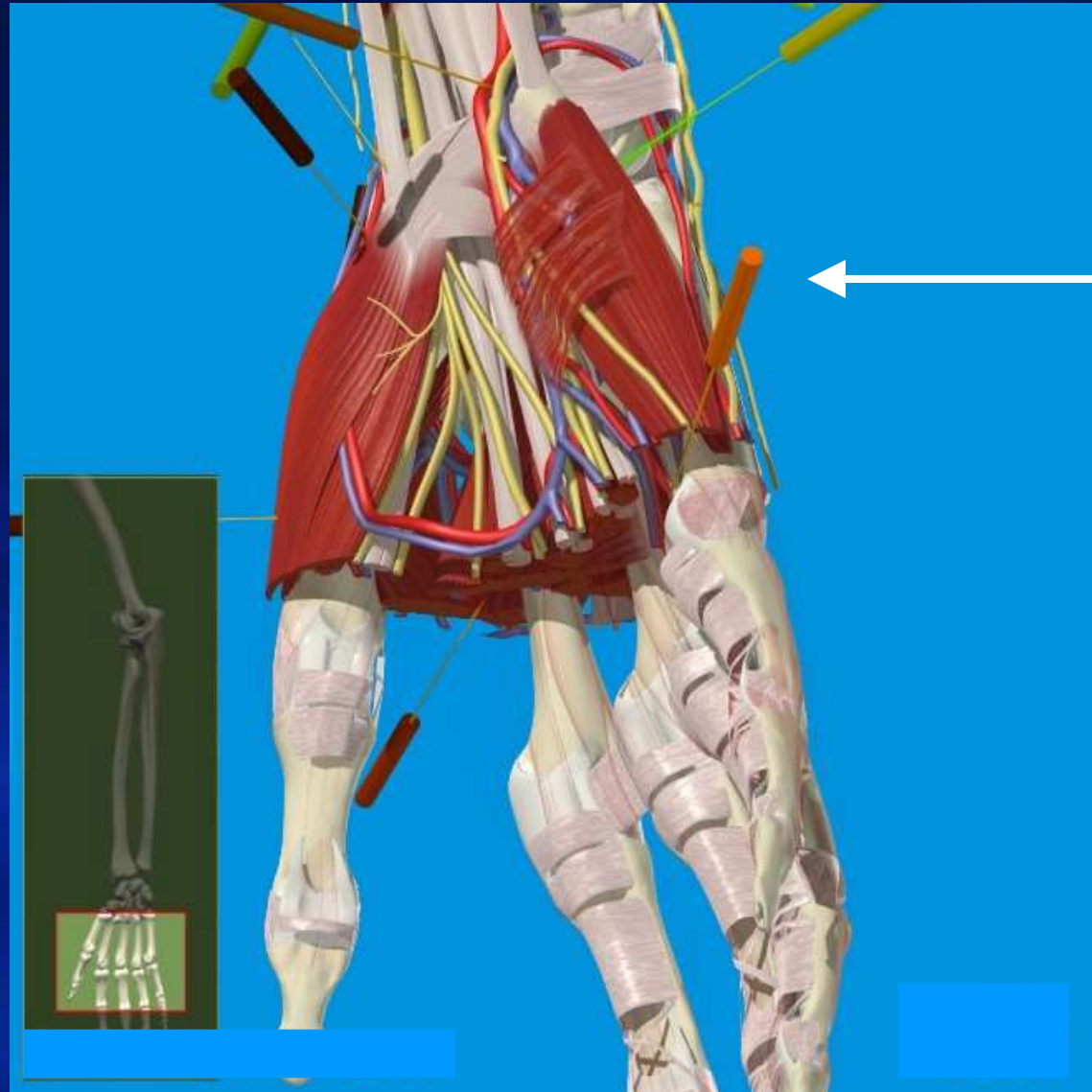


# Small Intestine - 3

- located in the fossa proximal & slightly volar to the head of the 5th metacarpal bone of the hand
- use to treat neck pain and stiffness as well as shoulder, elbow, and arm pain



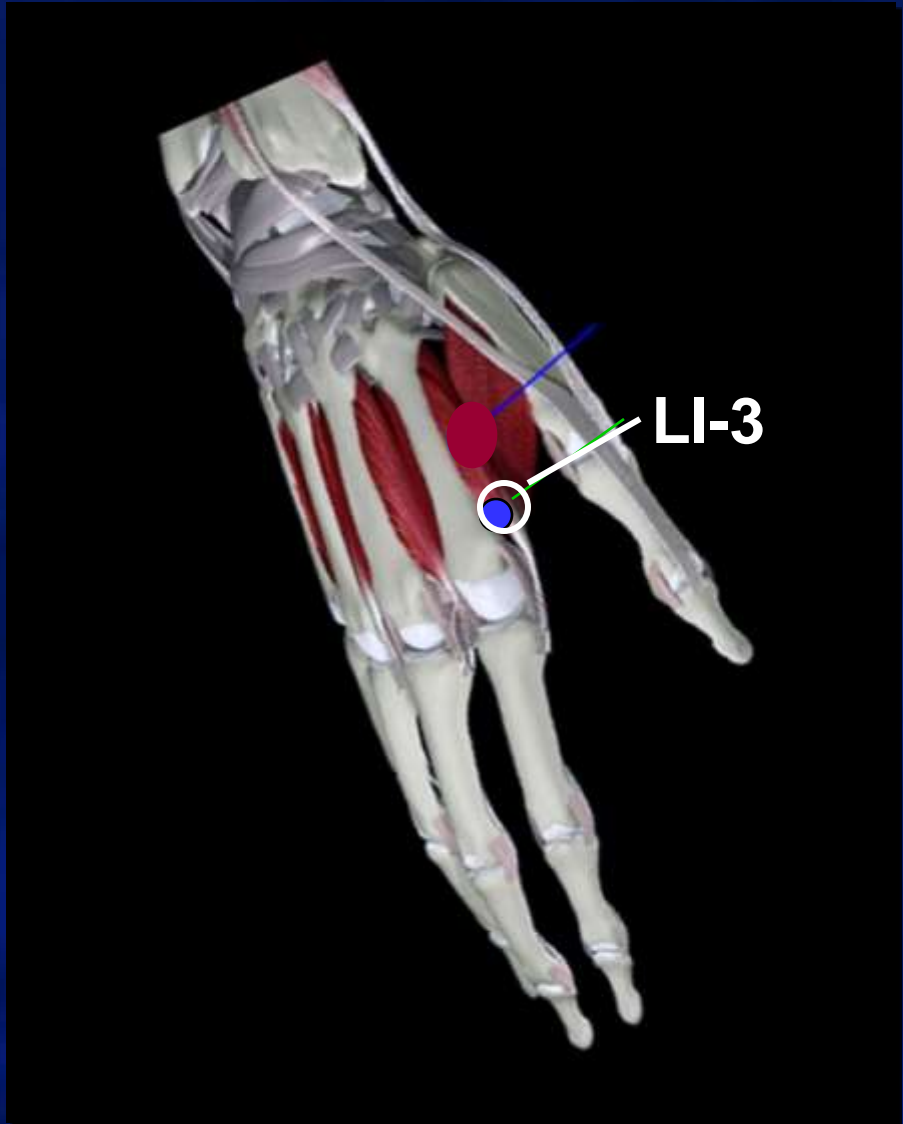
# SI-3+4 Cross-Sectional Anatomy



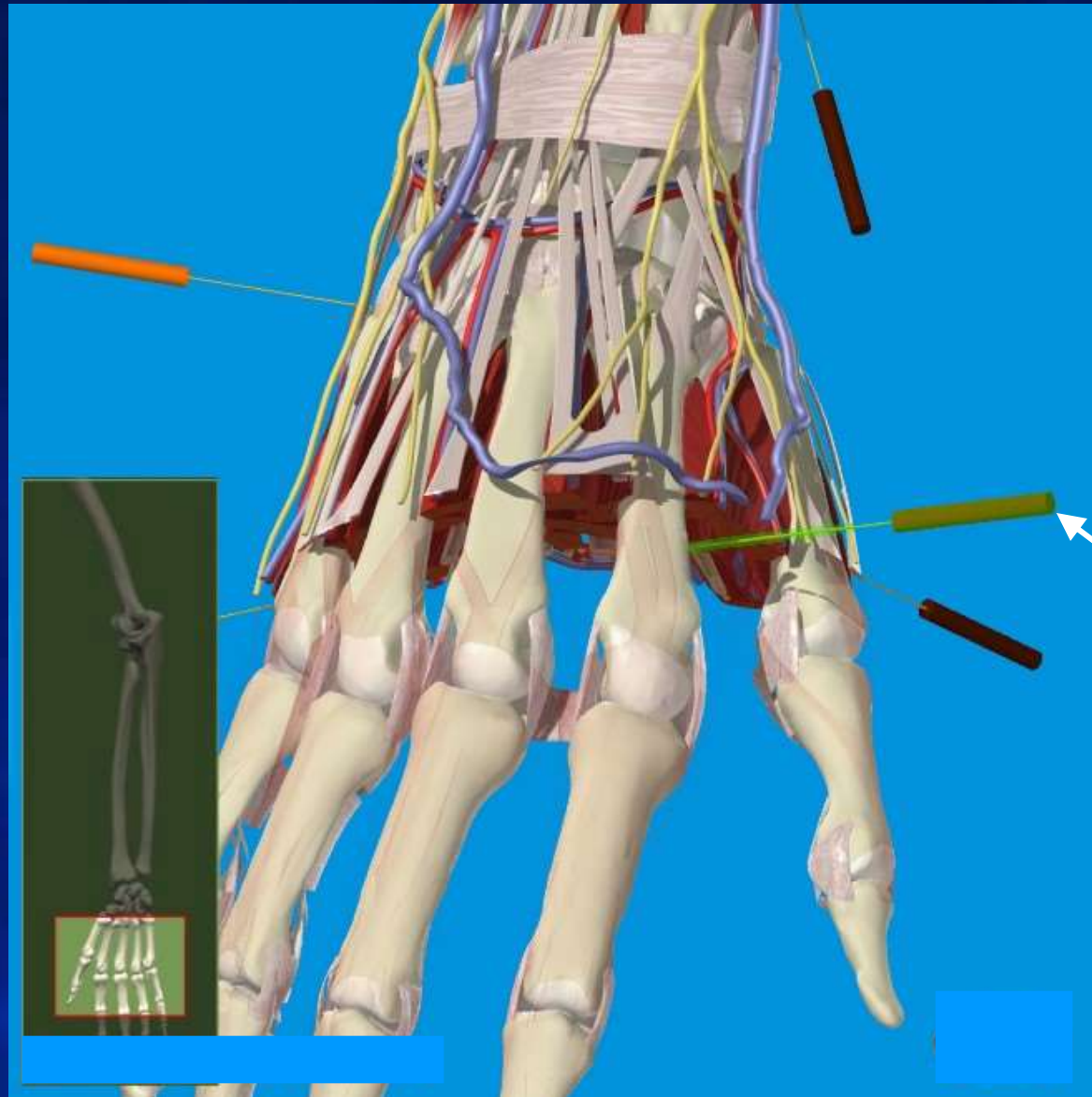
SI-3

# Large Intestine - 3

- On radial side of index finger, in the depression proximal to head of second metacarpal
- use to treat acute stiff neck



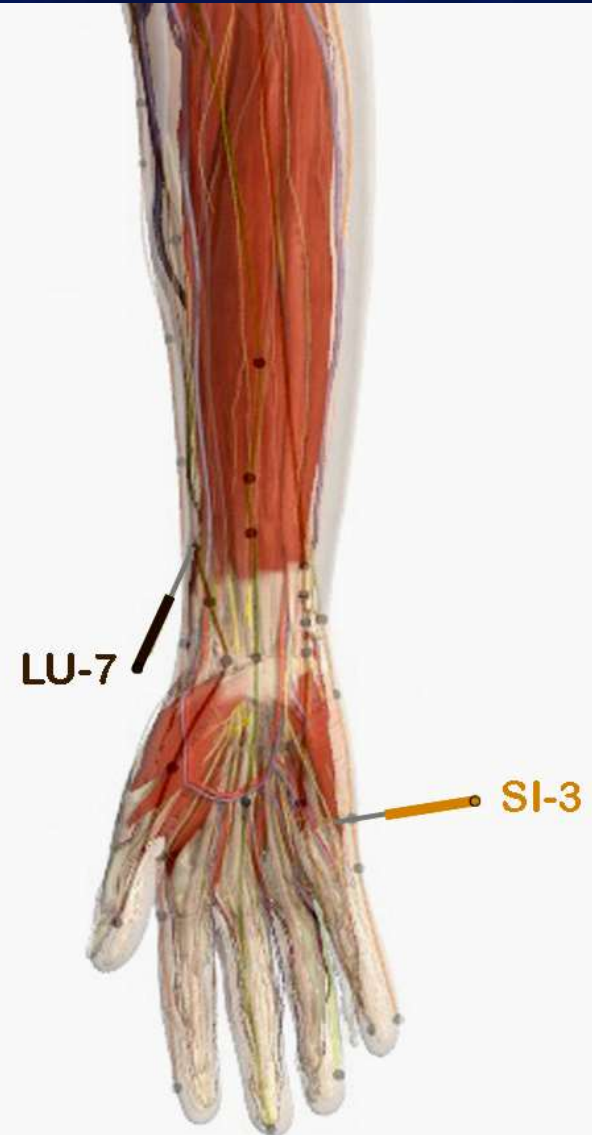
# LI-4 Cross-Sectional Anatomy



LI-4

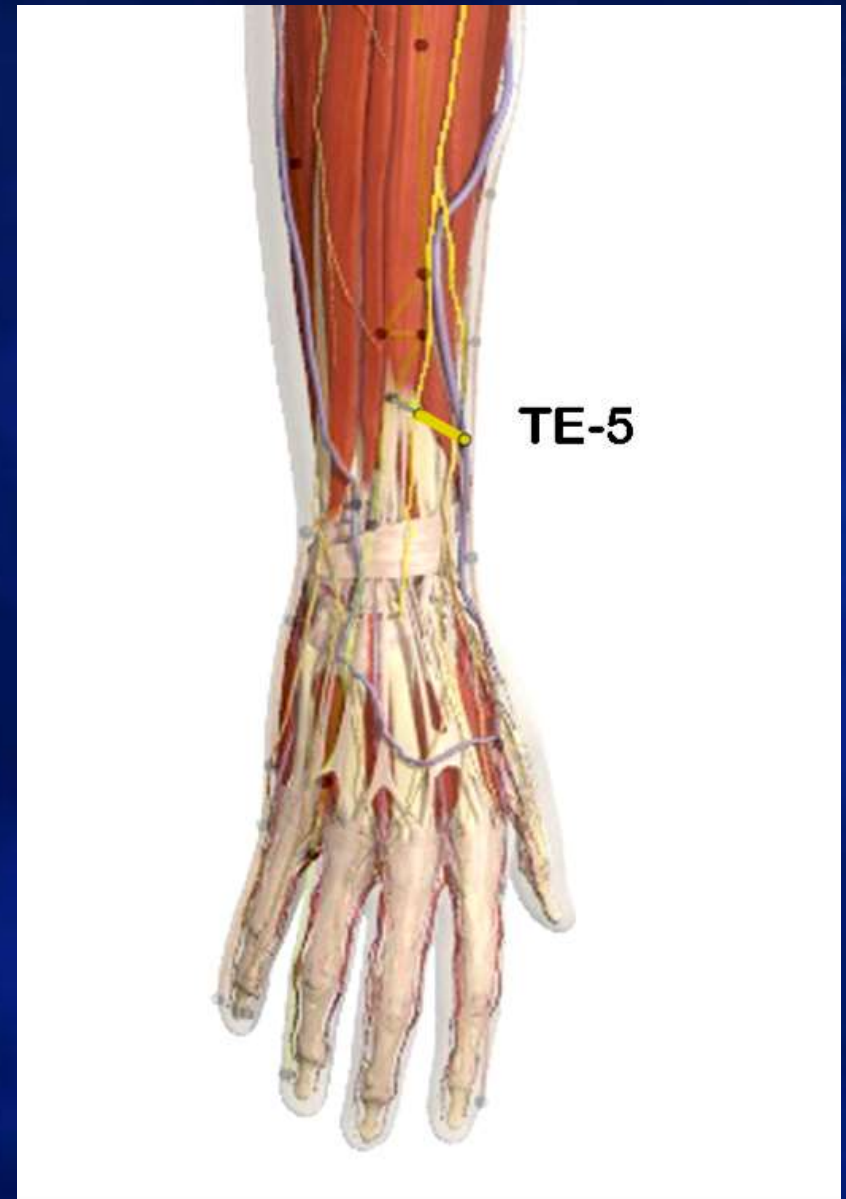
# Lung-7

- Located on the volar surface of the forearm proximal to the radial styloid between the brachioradialis and abductor pollicis longus tendons
- Indications include headache and stiffness of the neck and nape, shoulder pain



# Triple Energizer- 5

- 2 cun proximal to dorsal wrist crease in the depression between the radius and ulna, on radial side of extensor digitorum communis tendons
- Indications include stiff neck, pain of shoulder and back



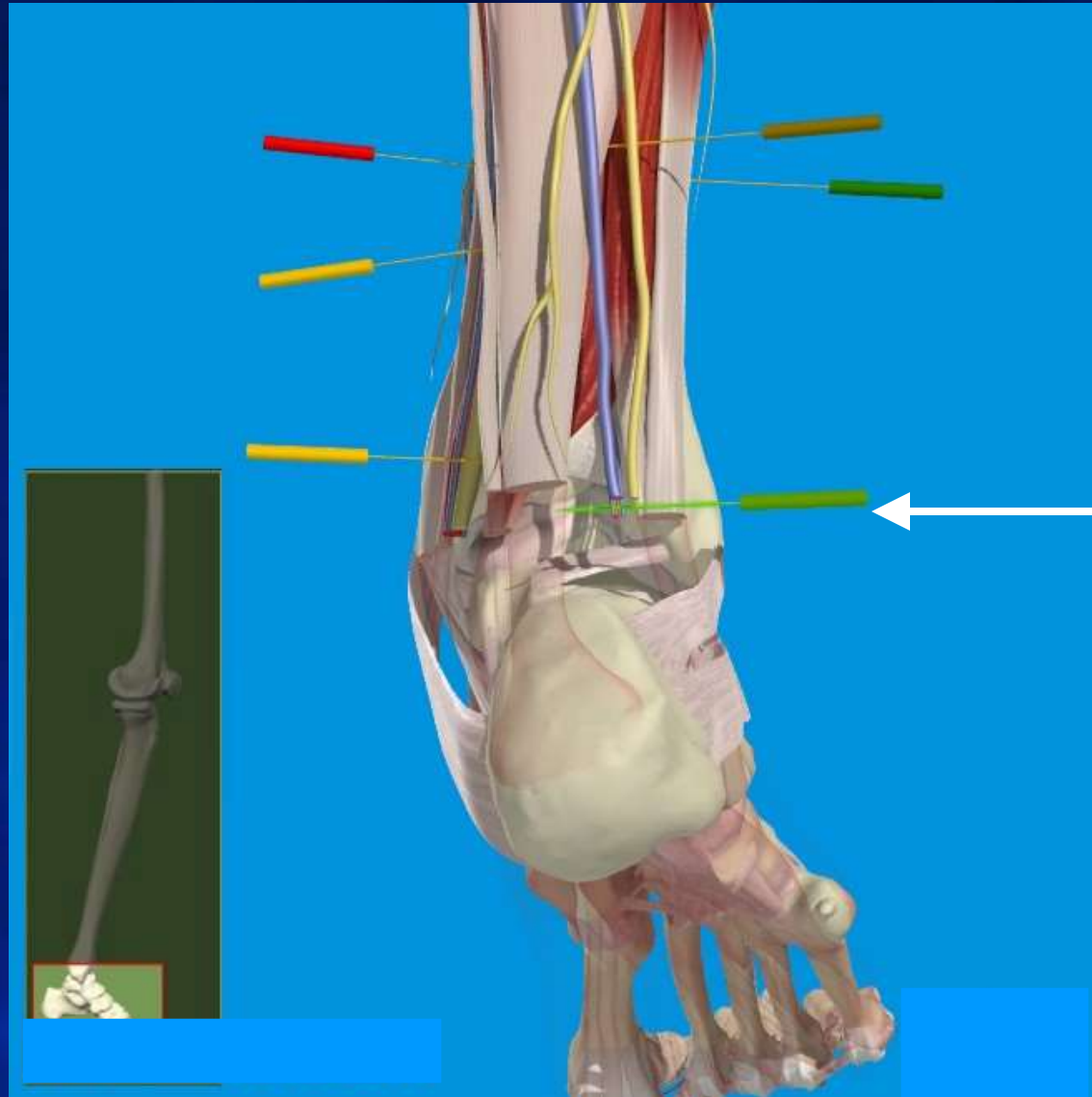
# Bladder - 60

- located behind the lateral malleolus in the depression between the prominence of the malleolus and the triceps surae tendon
- use to treat stiff neck and/or shoulder as well as low back pain and sciatica





# BL-60 Cross-Sectional Anatomy



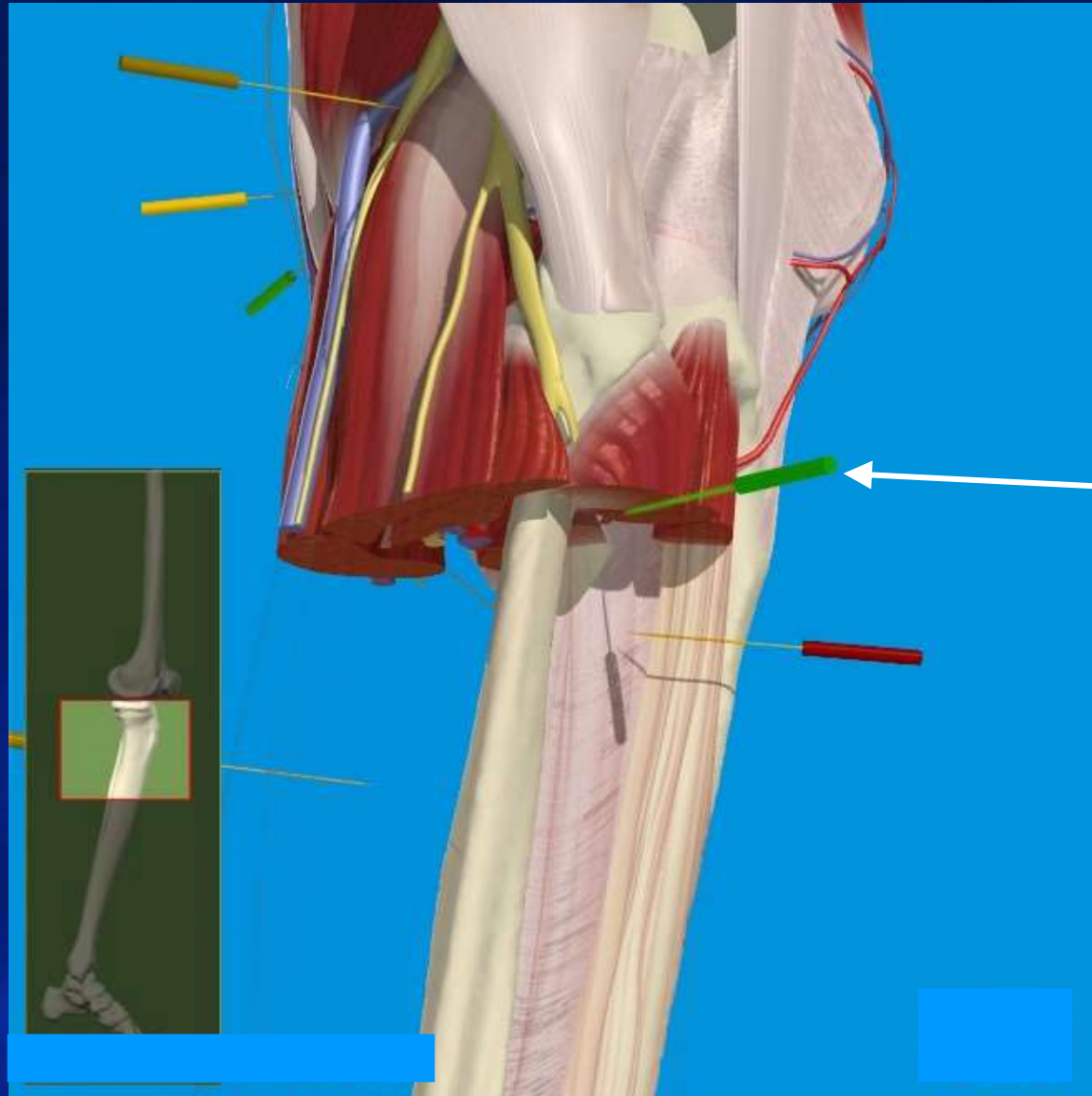
**BL-60**

# Gallbladder - 34

- located on the lateral calf in the depression just anterior and inferior to the fibular head
- use for treating stiffness of the neck & shoulders, is also a special (“hui”) point for muscles and tendons and can be used for sciatica



# GB-34 Cross-Sectional Anatomy



GB-34

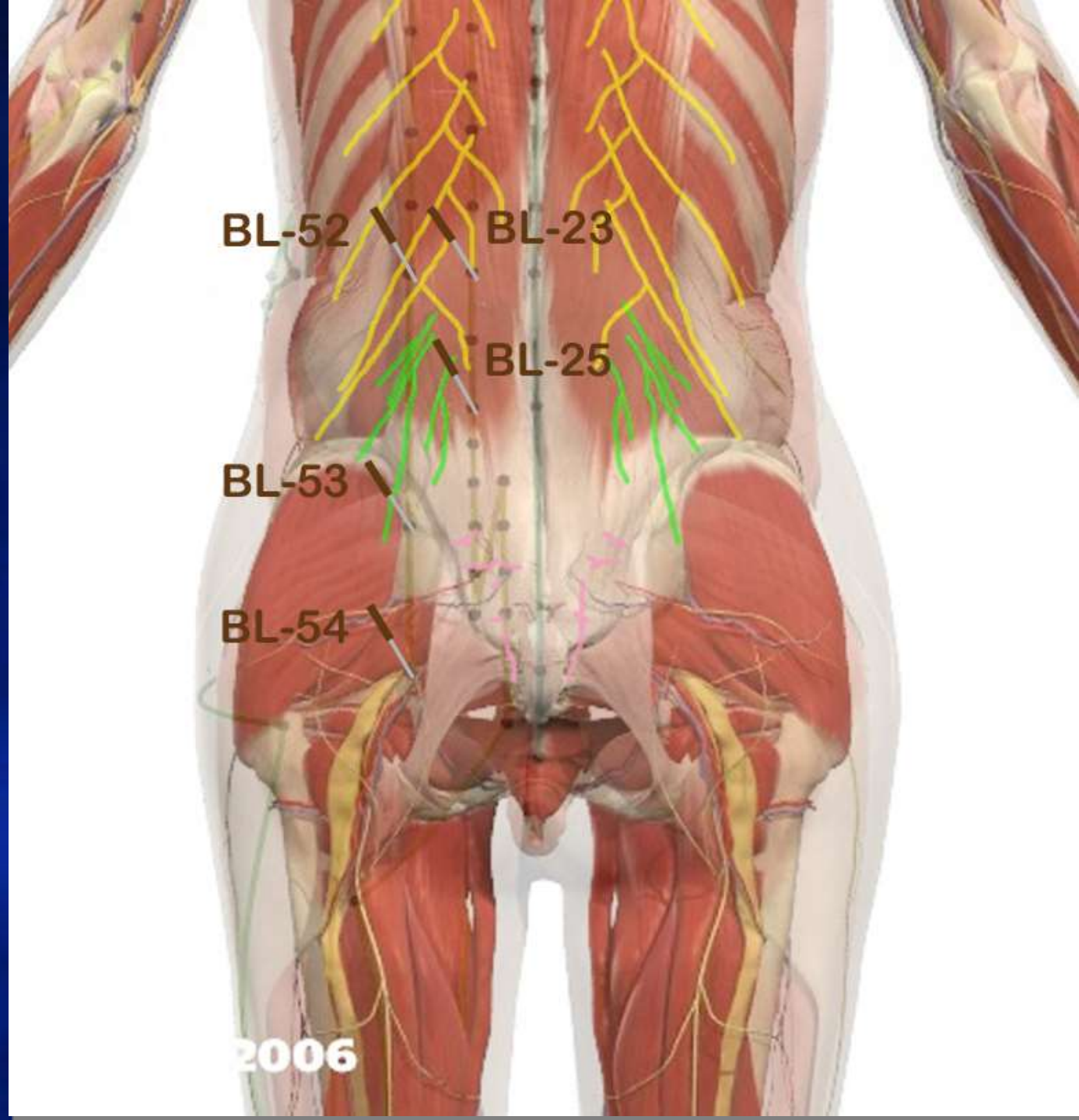
# Lumbar Degenerative Joint and Disc Disease



# Lumbar Pain Point Selections

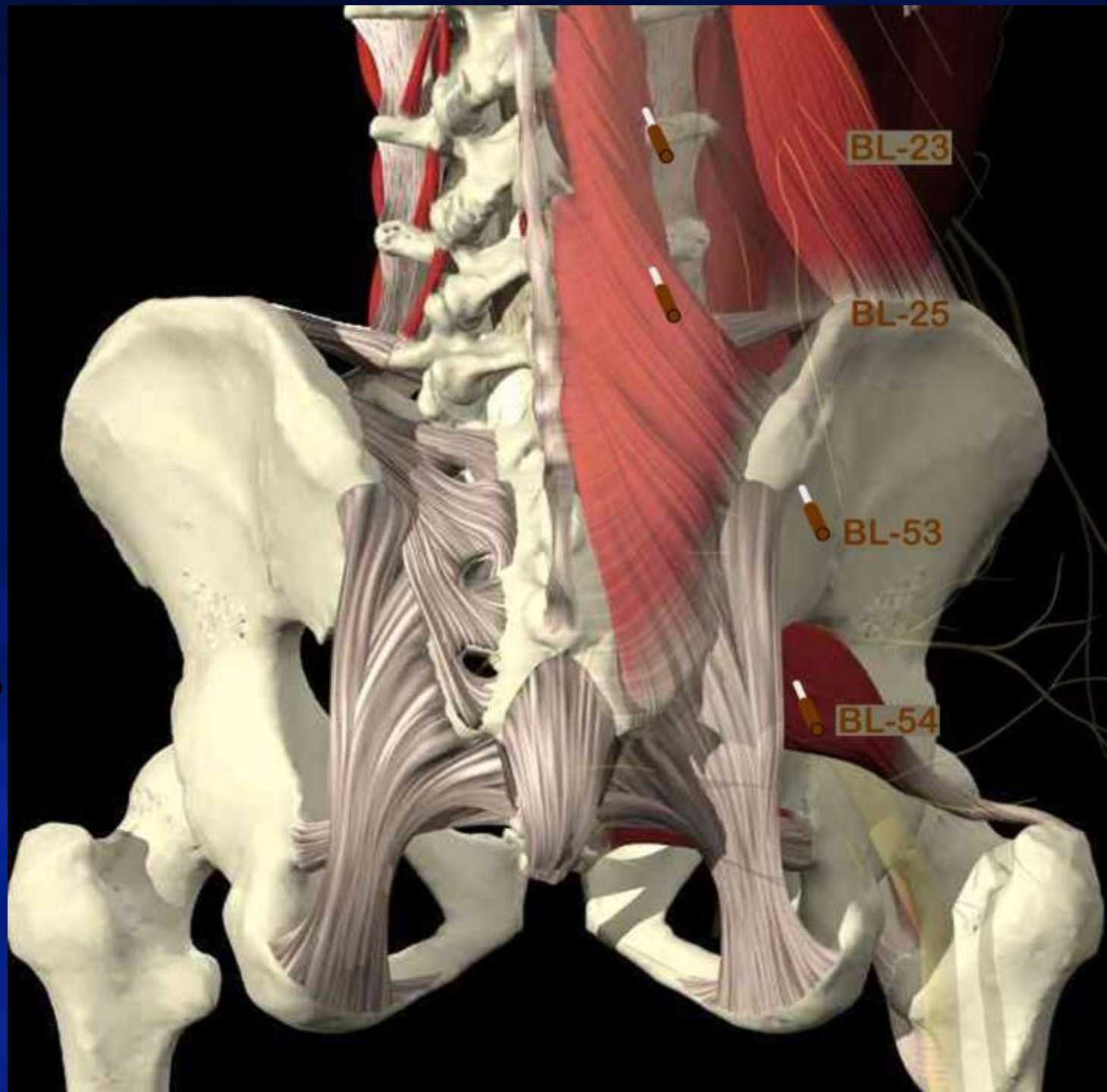
<b>Muscle Trigger Point</b>	<b>Corresponding Acupoint</b>	<b>Nerve Affected</b>
<b>longissimus thoracis</b>	<b>BL-23</b>	<b>dorsal ramus L2</b>
<b>iliocostalis lumborum</b>	<b>BL-25</b>	<b>dorsal ramus L4</b>
<b>4 more according to tenderness on exam</b>	<b>varying but often including BL-53 &amp; BL-54</b>	<b>varying</b>

# Lumbar Spine Pain Point Selections



2006

# Lumbar Spine Pain Point Selections



# Spine Pain Point Indications

<b>Acupoint</b>	<b>Actions</b>	<b>Indications</b>
<b>BL-23</b>	<b>strengthen lumbar region, nourish kidney yin</b>	<b>low back pain, knee disorders</b>
<b>BL-25</b>	<b>strengthen the lumbar region &amp; legs, alleviates pain</b>	<b>lumbar pain/strain, sacral pain, leg pain, leg numbness</b>
<b>BL-53</b>	<b>strengthen the lumbar region, alleviates pain</b>	<b>sciatica</b>
<b>BL-54</b>	<b>strengthen the lumbar region, alleviates pain</b>	<b>gluteal pain, lumbosacral pain, sciatica</b>



# Point Descriptions and Demonstrations

# Important Classical Acupoints

## Local Points

- **BL-23**
- **BL-25**
- **BL-53**
- **BL-54**
- **GB-29**
- **GB-30**
- **GV-4**

## Distal Points

- **KI-10**
- **BL-40**
- **BL-58**
- **BL-60**
- **GB-34**

# Important Classical Acupoints

## Local Points

- **BL-23**
- **BL-25**
- **BL-53**
- **BL-54**
- **GB-29**
- **GB-30**
- **GV-4**

## Indications

- Pain and soreness of the lumbar region and knees
- Lumbar pain, stiffness and rigidity of the lumbar spine
- Pain and stiffness of the lumbar spine, sciatica
- Pain and coldness of lumbar spine and sacrum, buttock pain, sciatica
- Pain of back and leg, sciatica
- Pain of lumbar region and leg, buttock pain, sciatica
- Lumbar spine pain and stiffness

*Deadman, O'Connor & Bensky*

# Acupoints- Muscle Relationships

## Local Points

- BL-23
- BL-25
- BL-53
- BL-54
- GB-29
- GB-30
- GV-4

## Muscles Influenced

- Longissimus thoracis
- Iliocostalis lumborum
- Gluteus maximus, medius, minimus
- Gluteus maximus, piriformis
- Tensor fascia latae, gluteus medius, gluteus minimus
- Gluteus maximus, piriformis
- Autonomic outflow to low back and legs

# Acupoints- Nerve Relationships

## Local Points

## Nerve Influenced

- **BL-23**
  - **BL-25**
  - **BL-53**
  - **BL-54**
  - **GB-29**
  - **GB-30**
  - **GV-4**
- **Dorsal ramus (L2, L3)**
  - **Dorsal ramus (L4)**
  - **Superior gluteal nerve (L4, L5, S1), inferior gluteal nerve (L5, S1, S2)**
  - **Sciatic (L4, L5, S1, S2)**
  - **Superior gluteal nerve (L4, L5, S1)**
  - **Sciatic nerve (L4, L5, S1, S2)**
  - **Dorsal ramus (L2), autonomic outflow to lumbar back and legs**

# Important Classical Acupoints

## Distal Points

- **KI-10**
- **BL-40**
- **BL-58**
- **BL-60**
- **GB-34**

## Indications

- Activates the channel and relieves pain
- Pain and stiffness of the lumbar spine
- Lumbar pain, sciatica
- Lumbar pain, sciatica, coccyx pain
- Sciatica, muscle tightness and stiffness

*Deadman, O'Connor & Bensky*

# Important Classical Acupoints

## Distal Points

- KI-10
- BL-40
- BL-58
- BL-60
- GB-34

## Nerves Influenced

- Saphenous (L3,4), tibial (L5, S1, S2)
- Tibial (L5, S1, S2)
- Sural (S1)
- Sural (S1)
- Peroneal (L4, L5, S1, S2)

# Acupuncture Points

*to enhance treatment results*

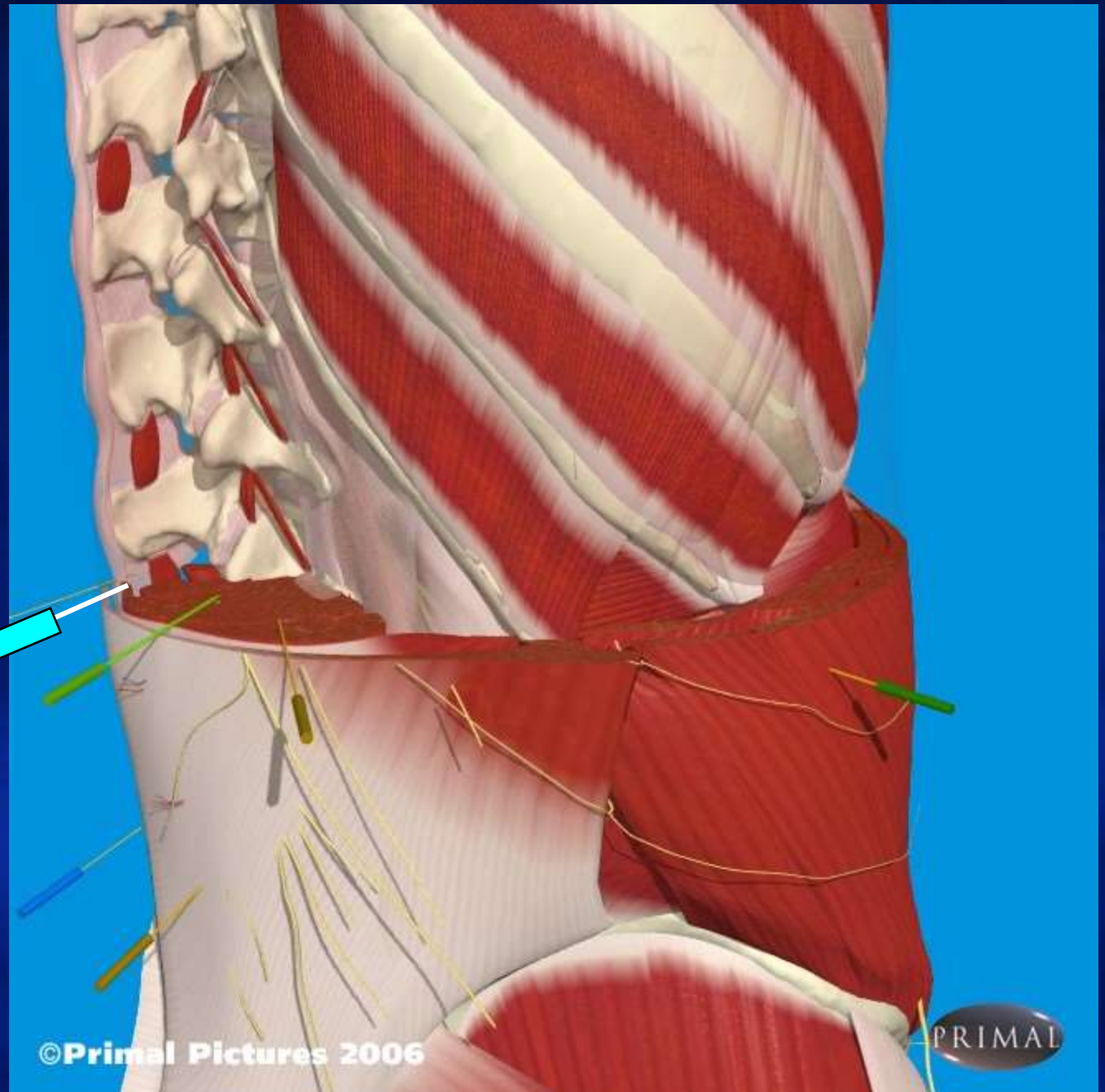


# Governor Vessel - 4

- located in the midline on the interspinous ligament between L2 and L3
- controls sympathetic outflow to lumbar spine lower extremities



GV-4



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# Kidney - 10

- located in the medial popliteal crease between the tendons of the semimembranosus and semitendinosus tendons
- strengthens lumbar spine and helps pelvic region pain and inner thigh pain



**KI-10**

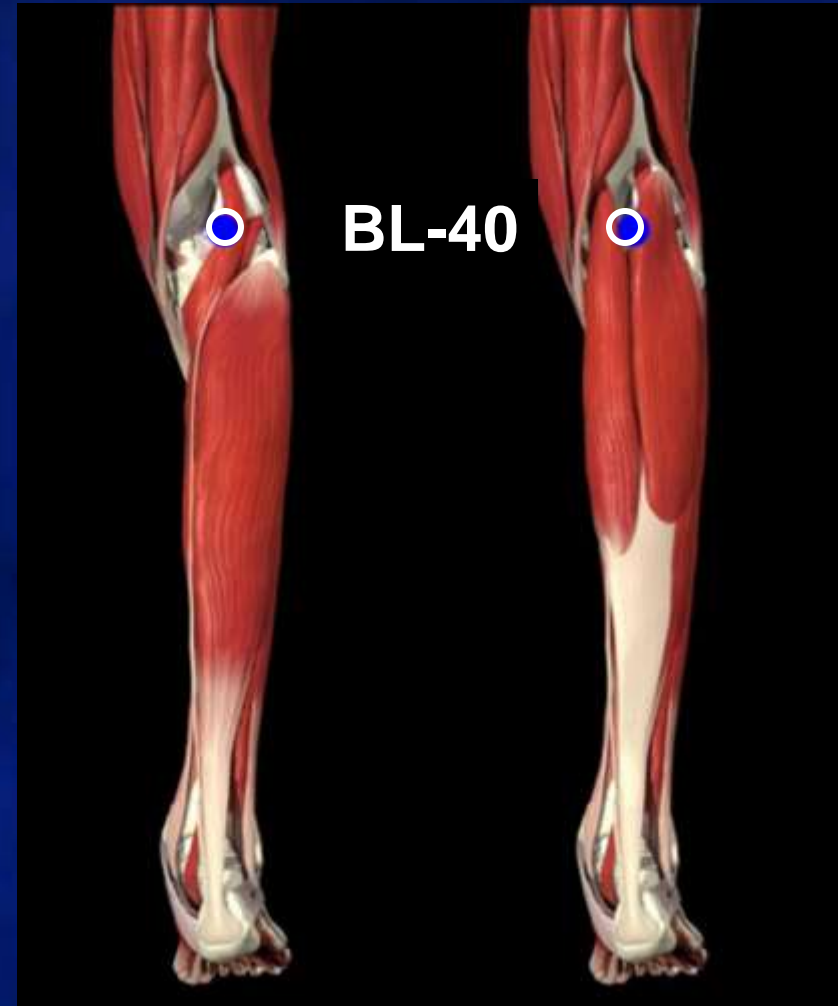


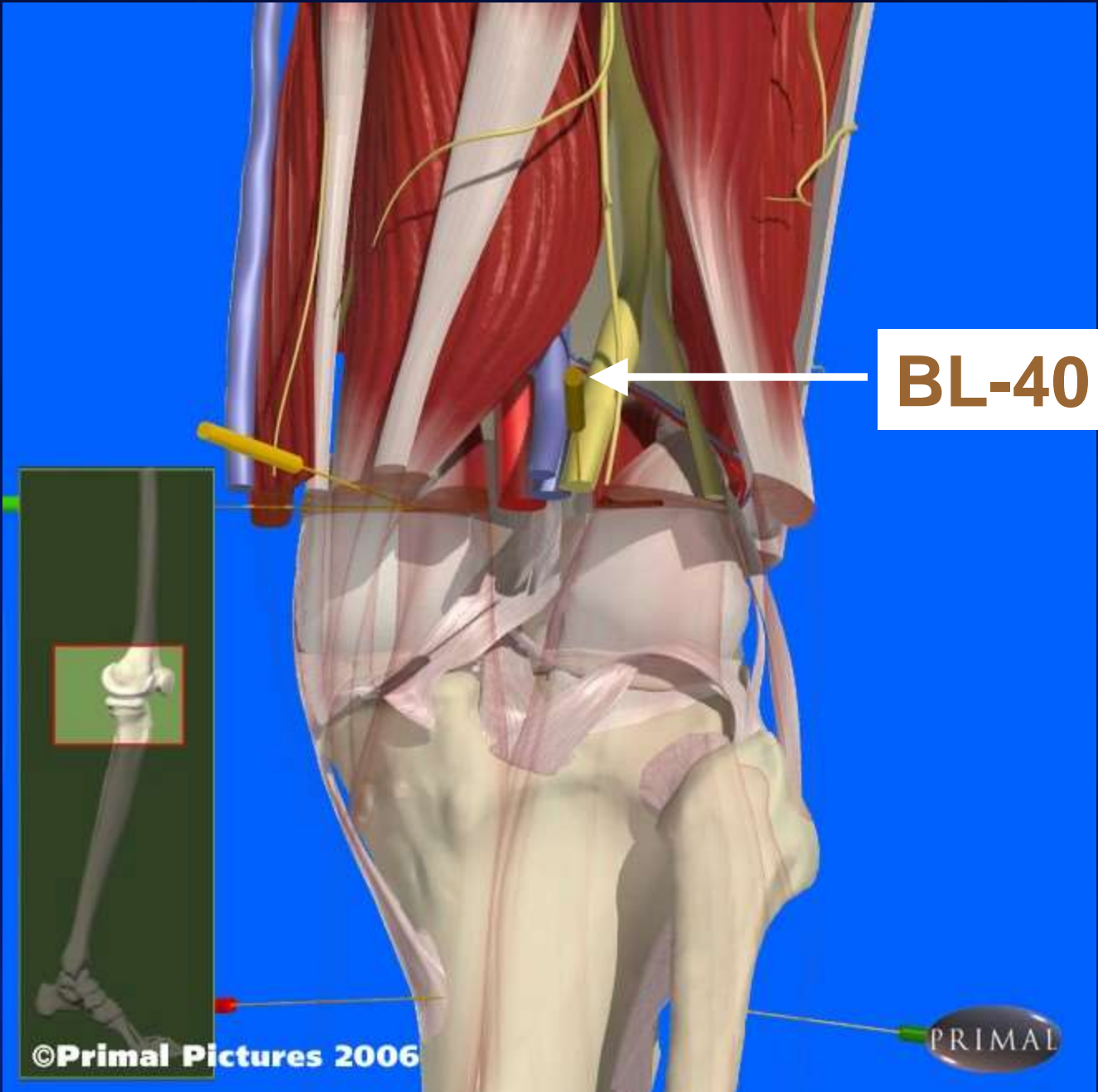
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PRIMAL

# Bladder - 40

- located in the midline of the popliteal crease between biceps femoris & semitendinosus tendons
- strengthens the lumbar spine and knees





**BL-40**

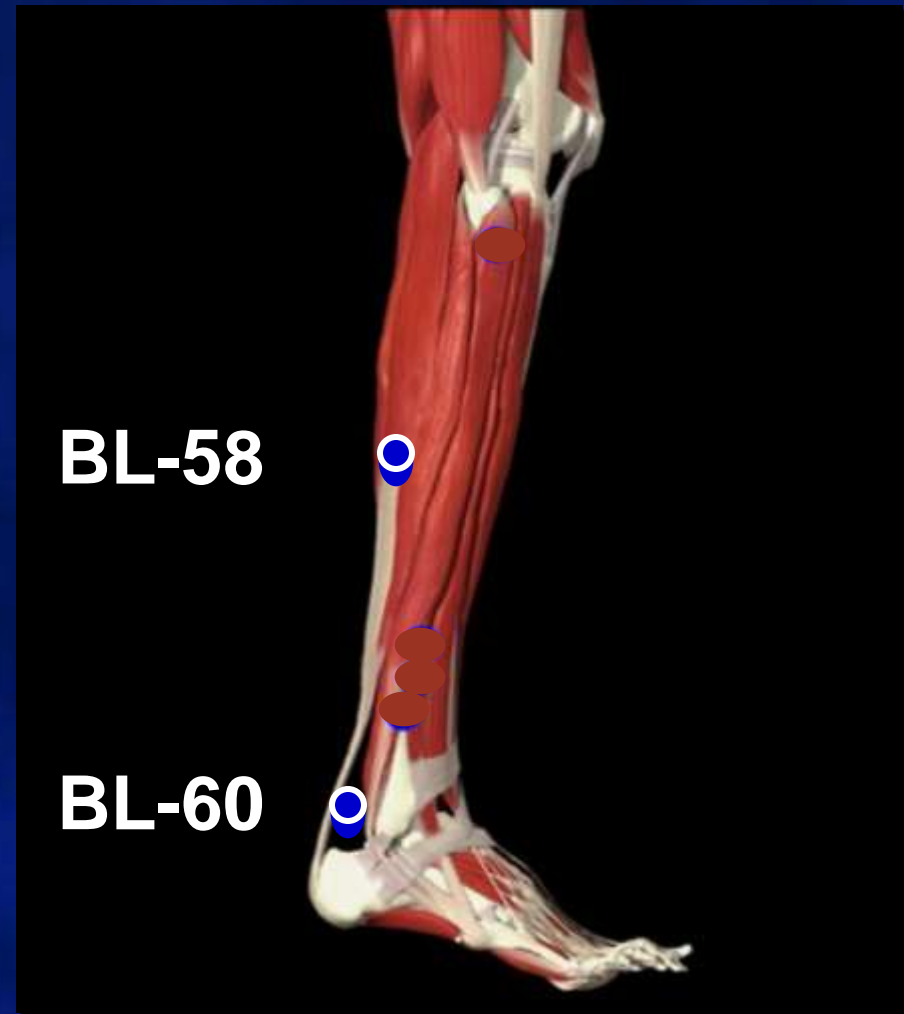


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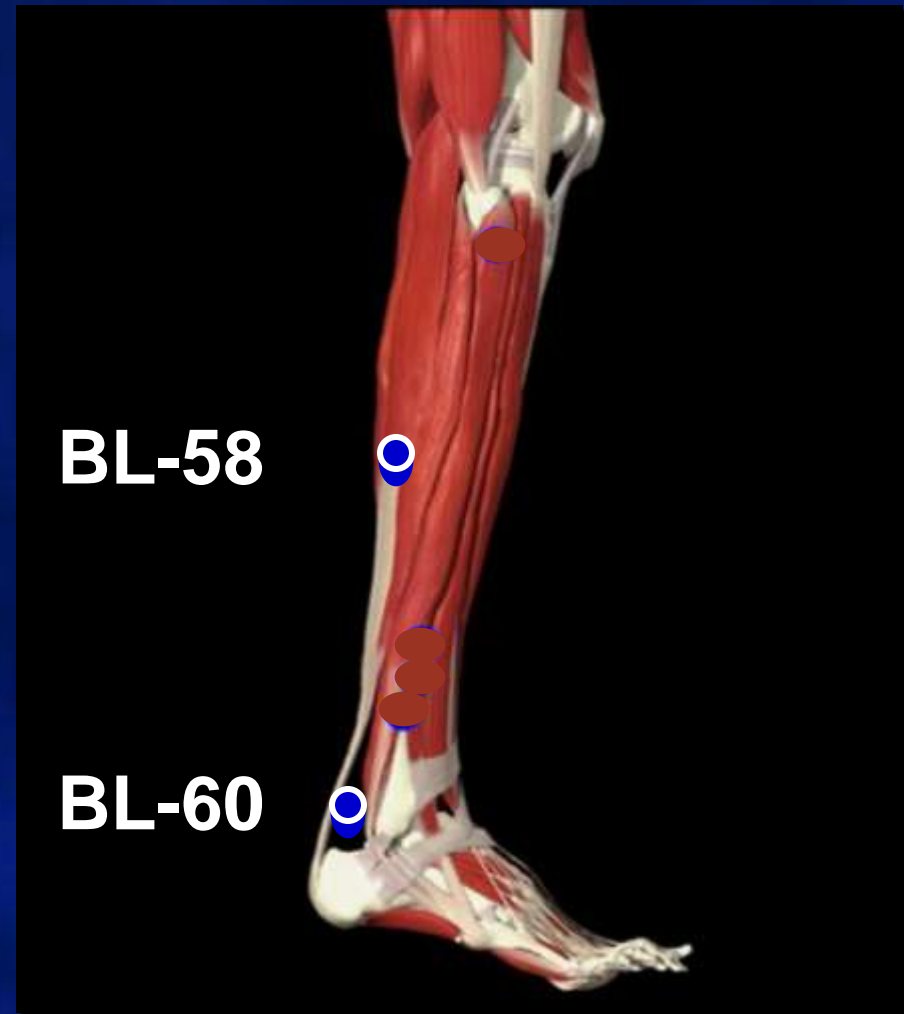
# Bladder – 58 + 60

- BL-58 is located one thumb width below and lateral to the depression between the medial & lateral gastrocnemius muscle bellies in the mid-calf
- excellent point for treating sciatica

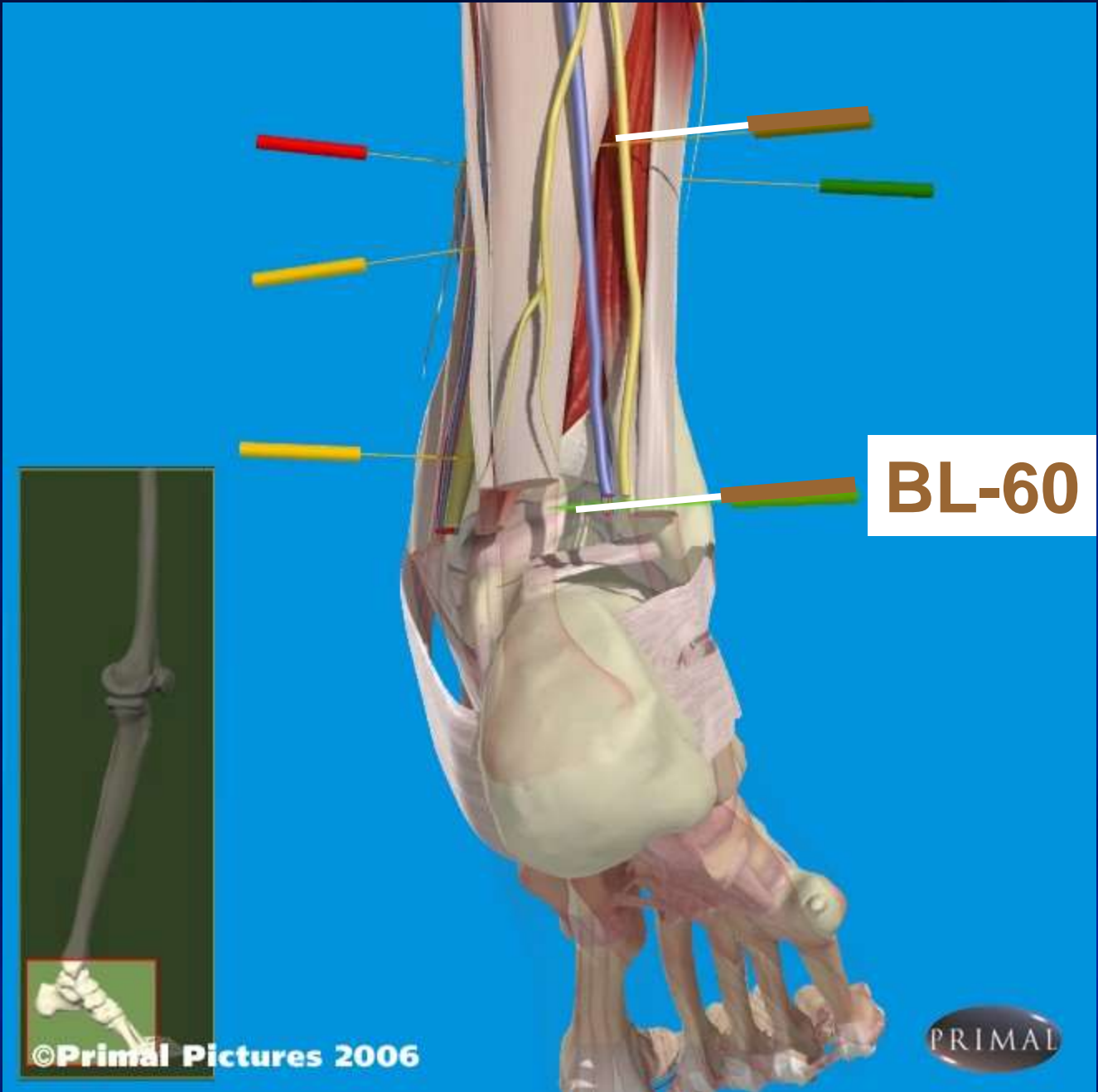


# Bladder – 58 + 60

- BL-60 is located behind the lateral malleolus in the depression between the prominence of the malleolus & the triceps surae tendon
- used to treat stiff neck and/or shoulder as well as low back pain and sciatica







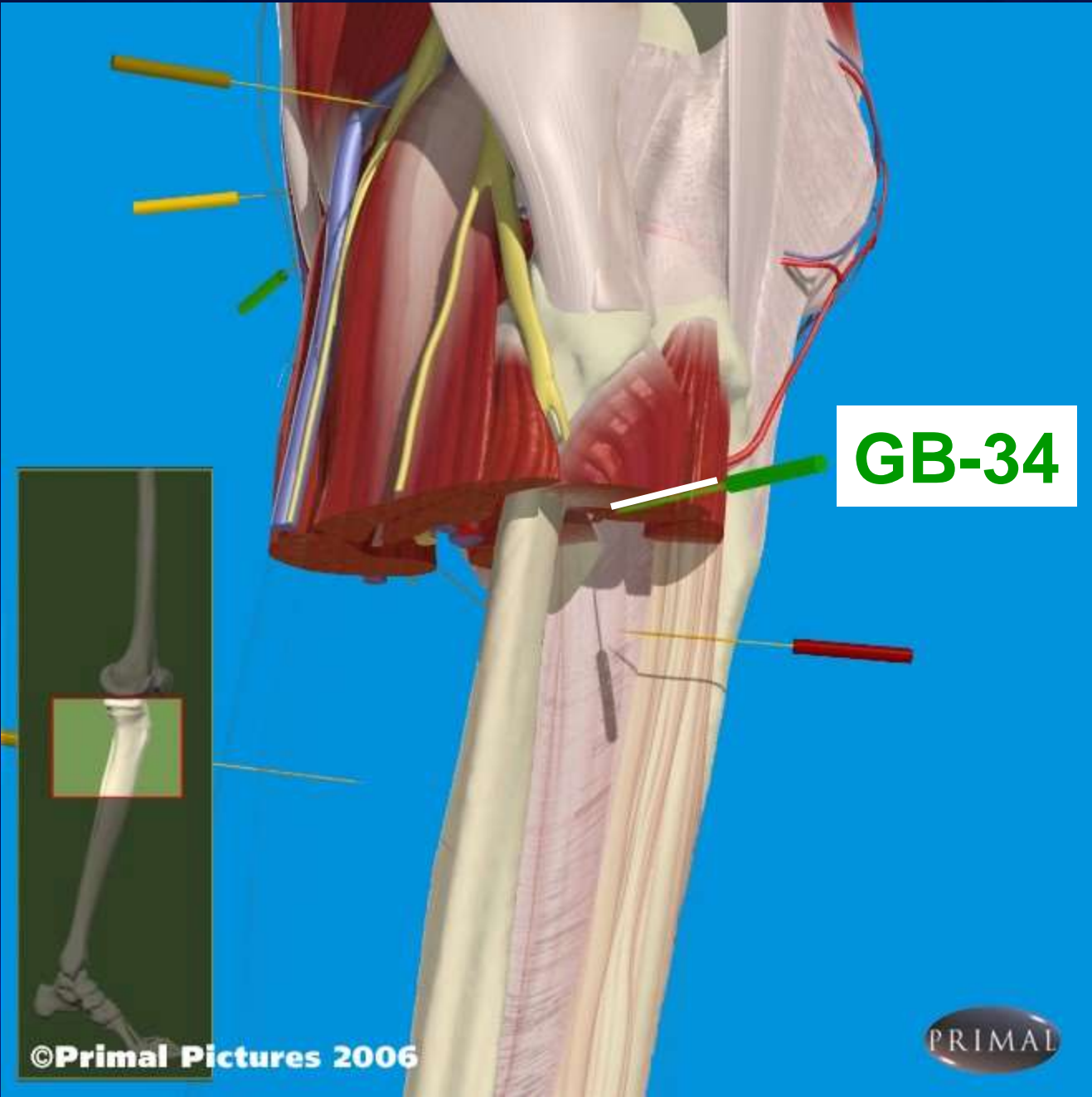
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# Gallbladder - 34

- located on the lateral calf in the depression just anterior and inferior to the fibular head
- use for treating stiffness of the neck & shoulders, also “hui” point for muscles and tendons and can be used for sciatica





**GB-34**

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