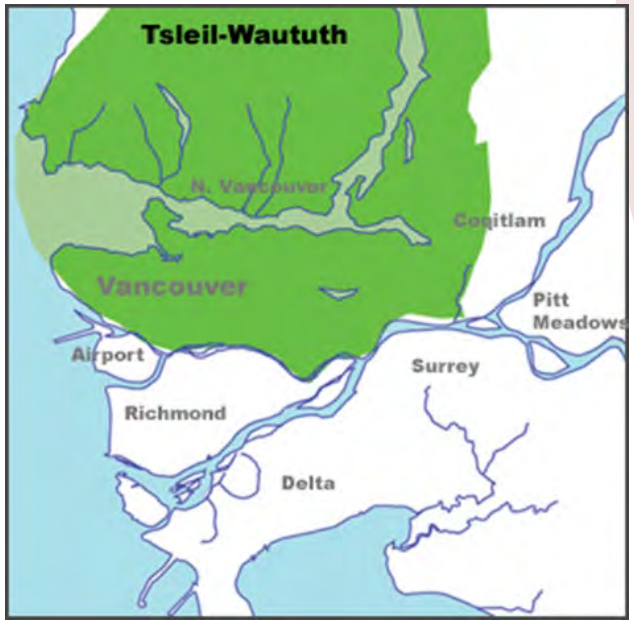
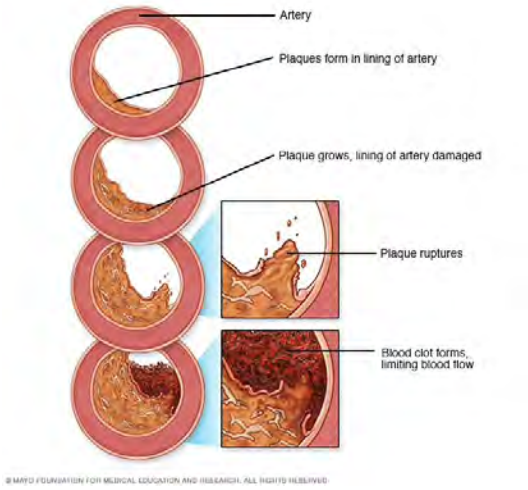
We would like to acknowledge that we are gathered today on the traditional territories of the Musqueam, Squamish and Tsleil-Waututh peoples.

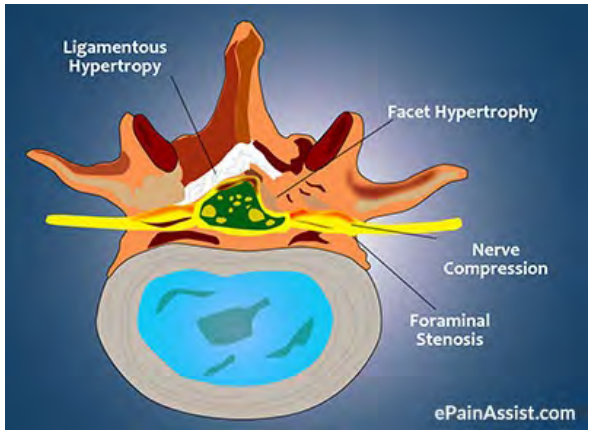
Source: www.johomaps.net/na/canada/bc/vancouver/firstnations/firstnations.html

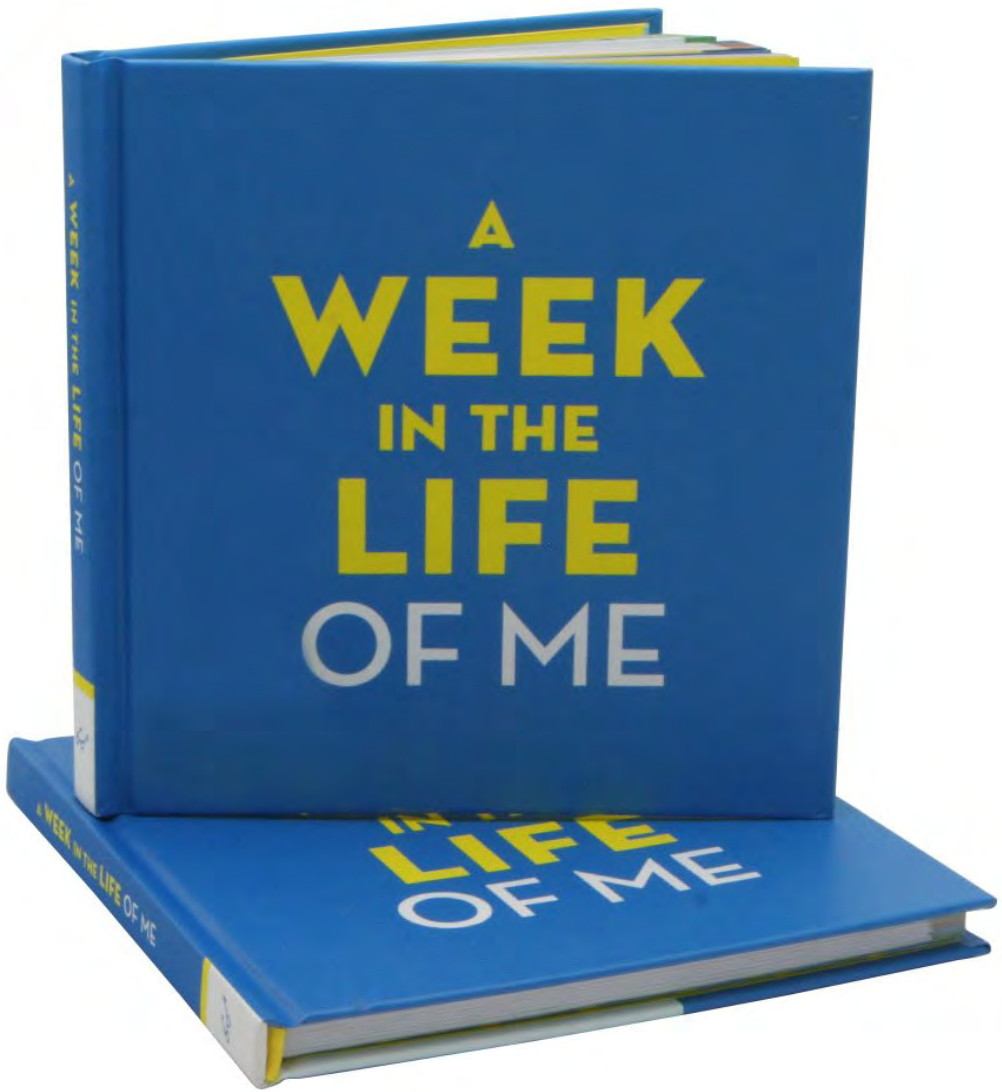


ALL THAT'S LEG PAIN IS NOT SCIATICA

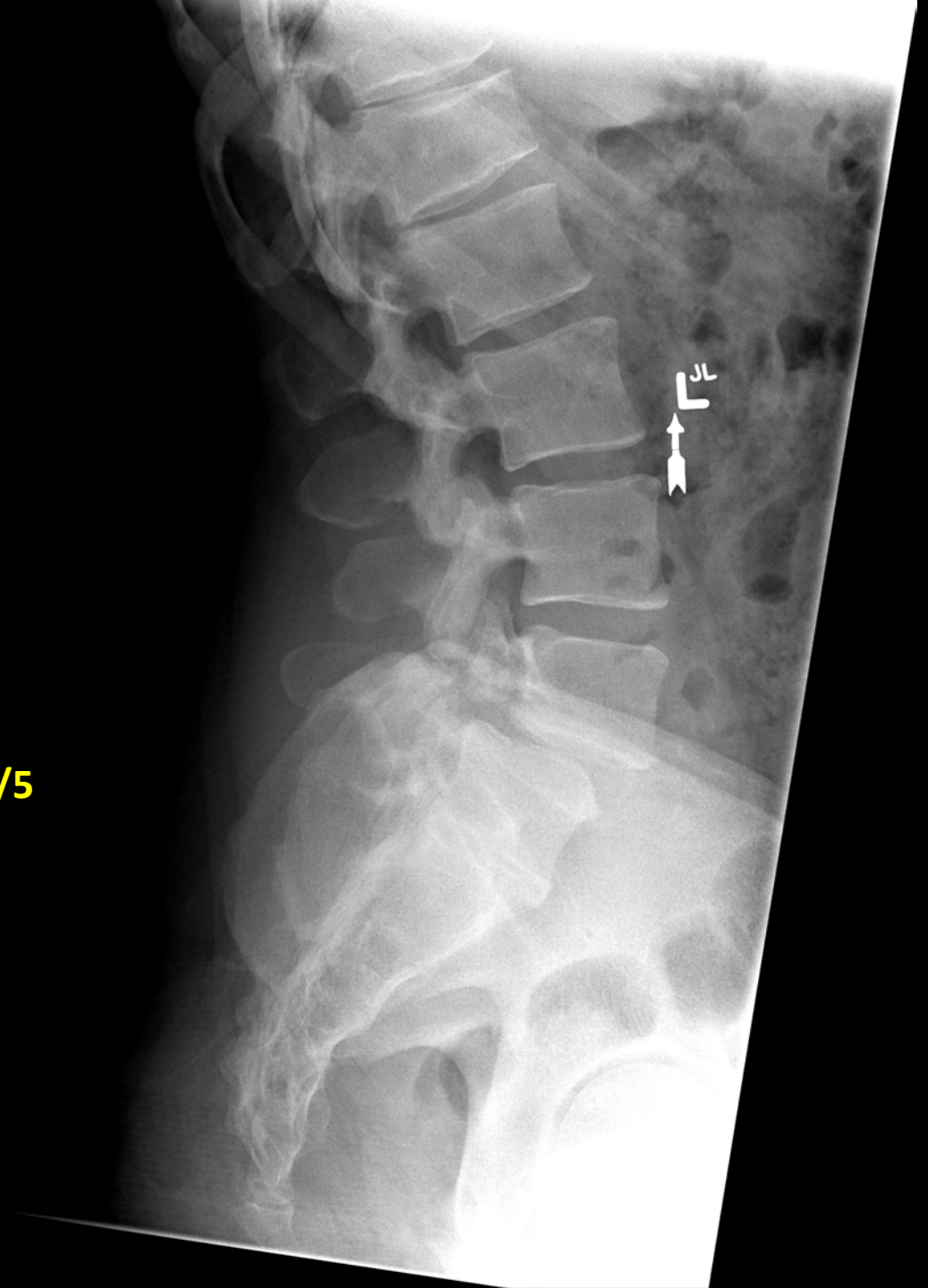
John Street MD PhD FRCSC
VGH Spine Program





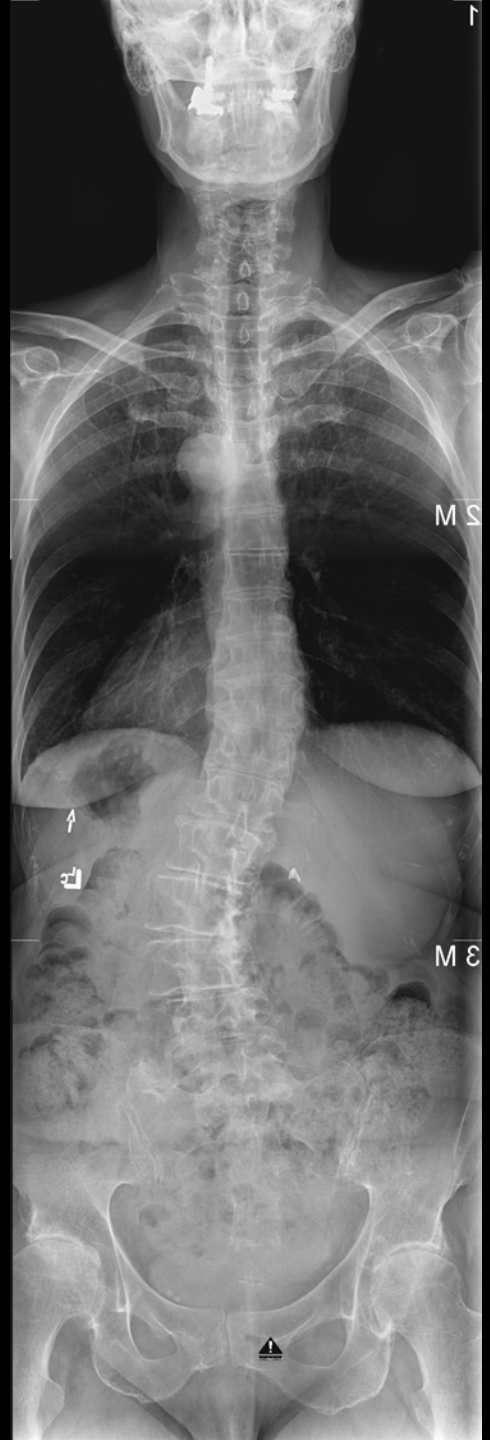

A
WEEK
IN THE
LIFE
OF ME

LEFT S1 RADICULOPATHY
LEFT L5S1 DISC HERNIATION

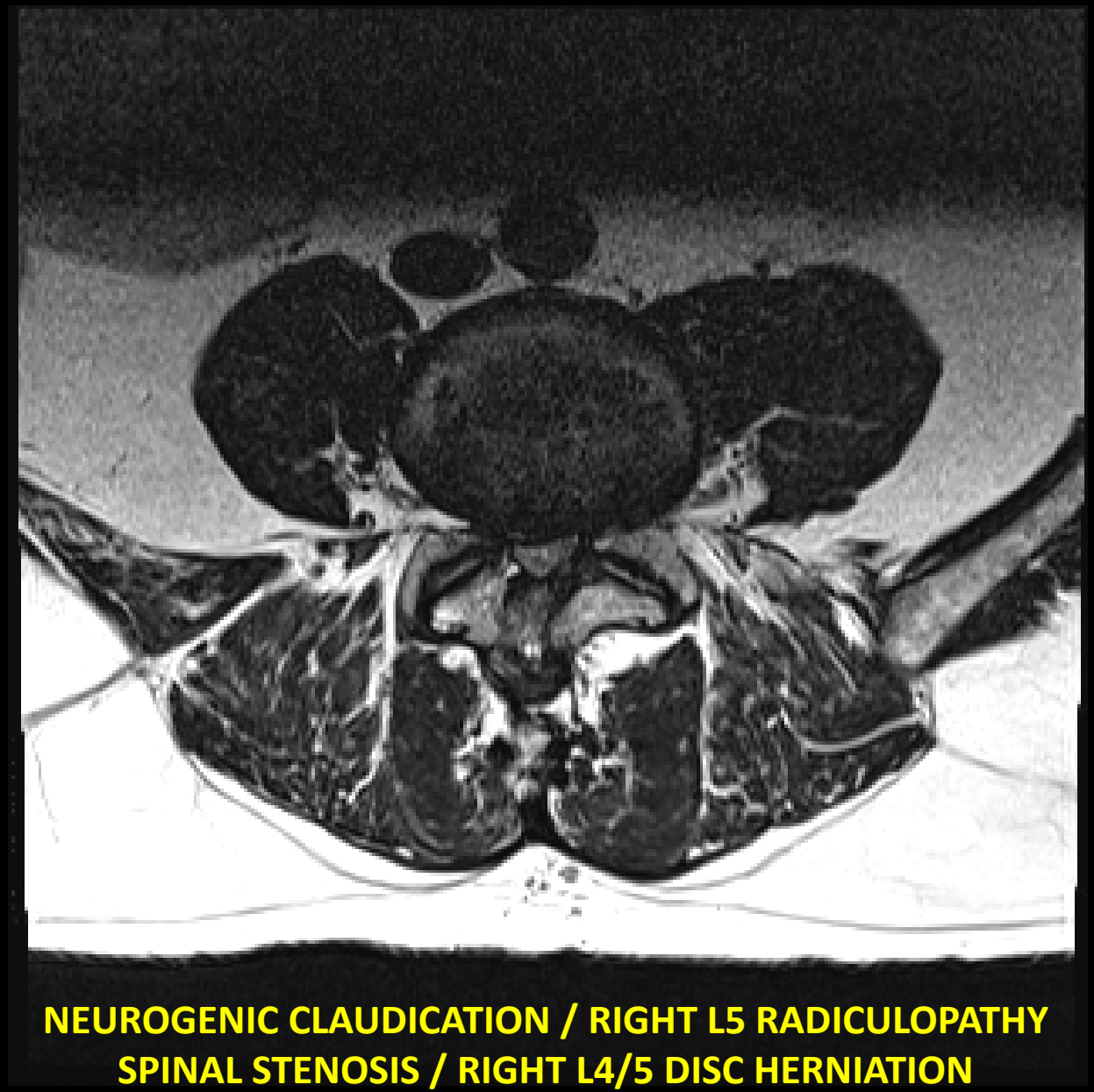


RIGHT L5 RADICULOPATHY
DEGENERATIVE SPONDYLOLISTHESIS L4/5

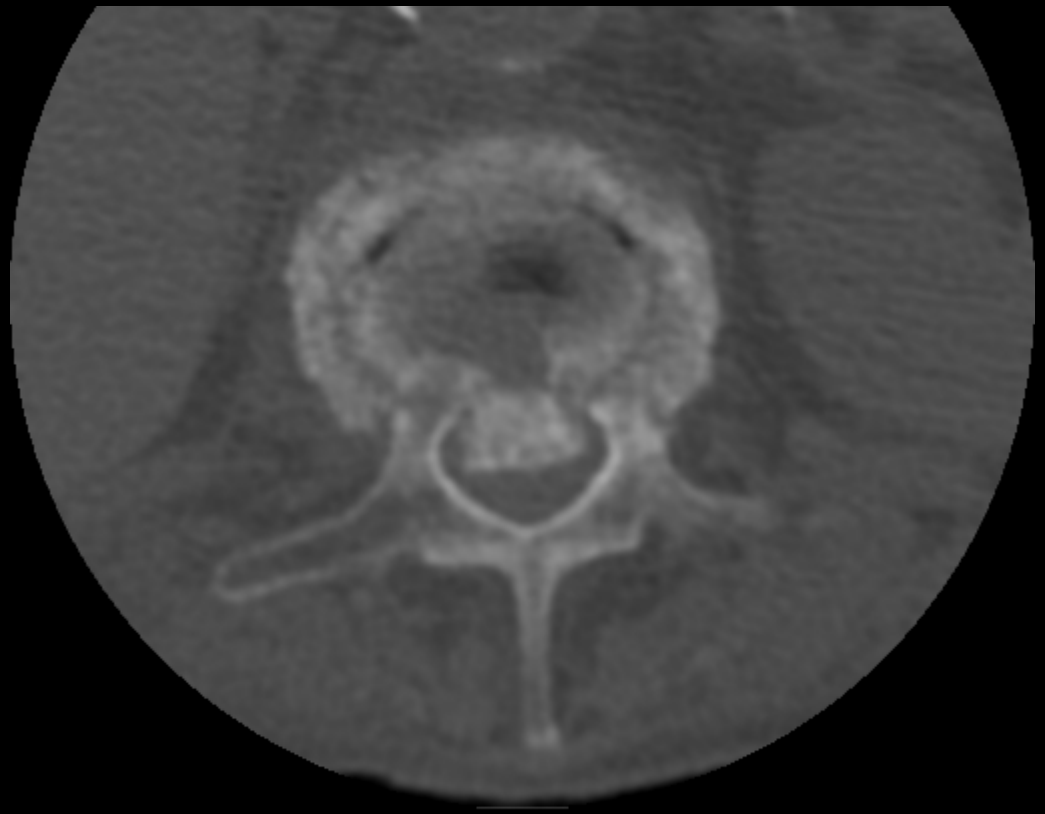
RIGHT L5 RADICULOPATHY
ISTHMIC SPONDYLOLISTHESIS L5S1

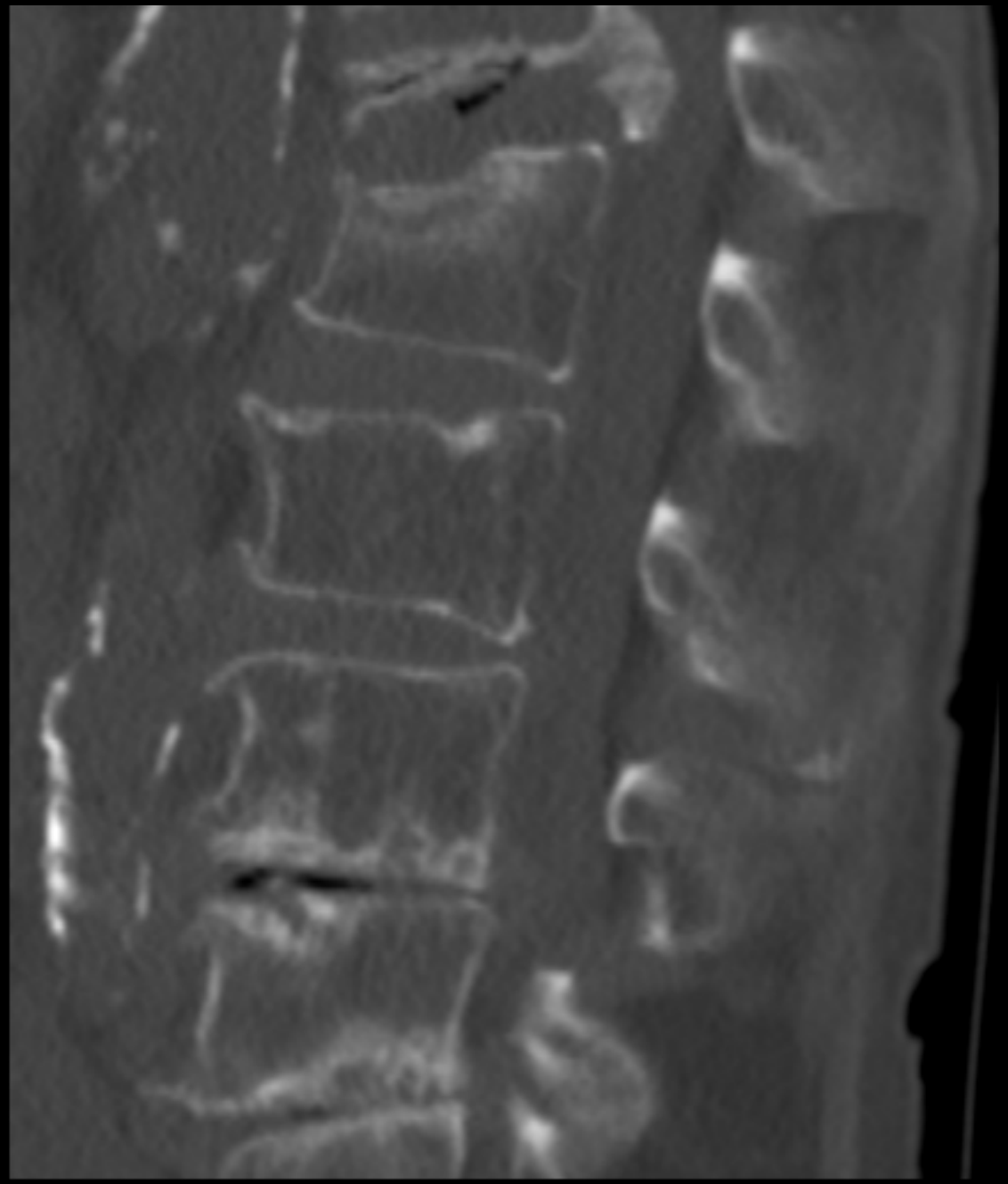


LEFT L5 RADICULOPATHY
DEGENERATIVE SCOLIOSIS

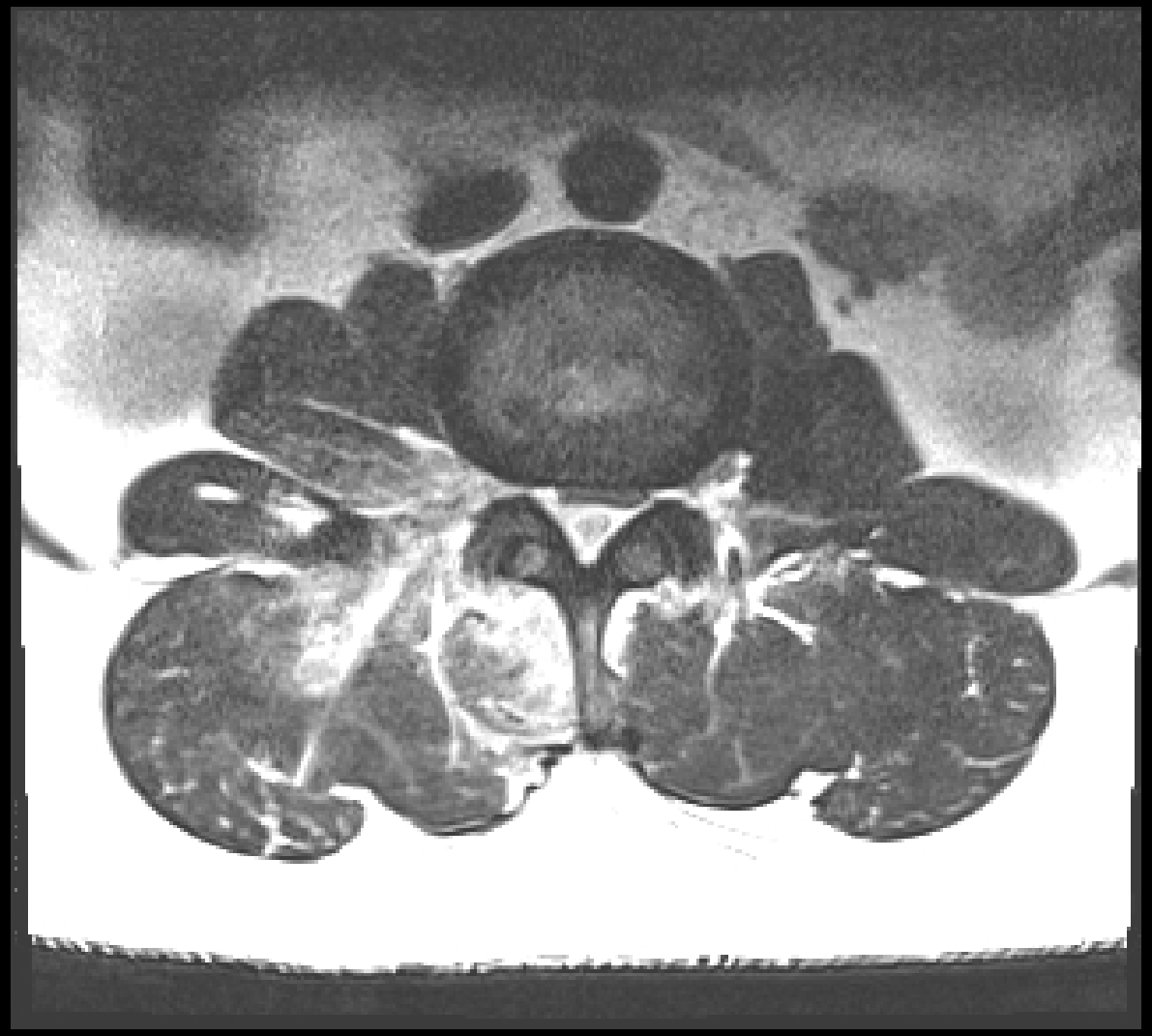


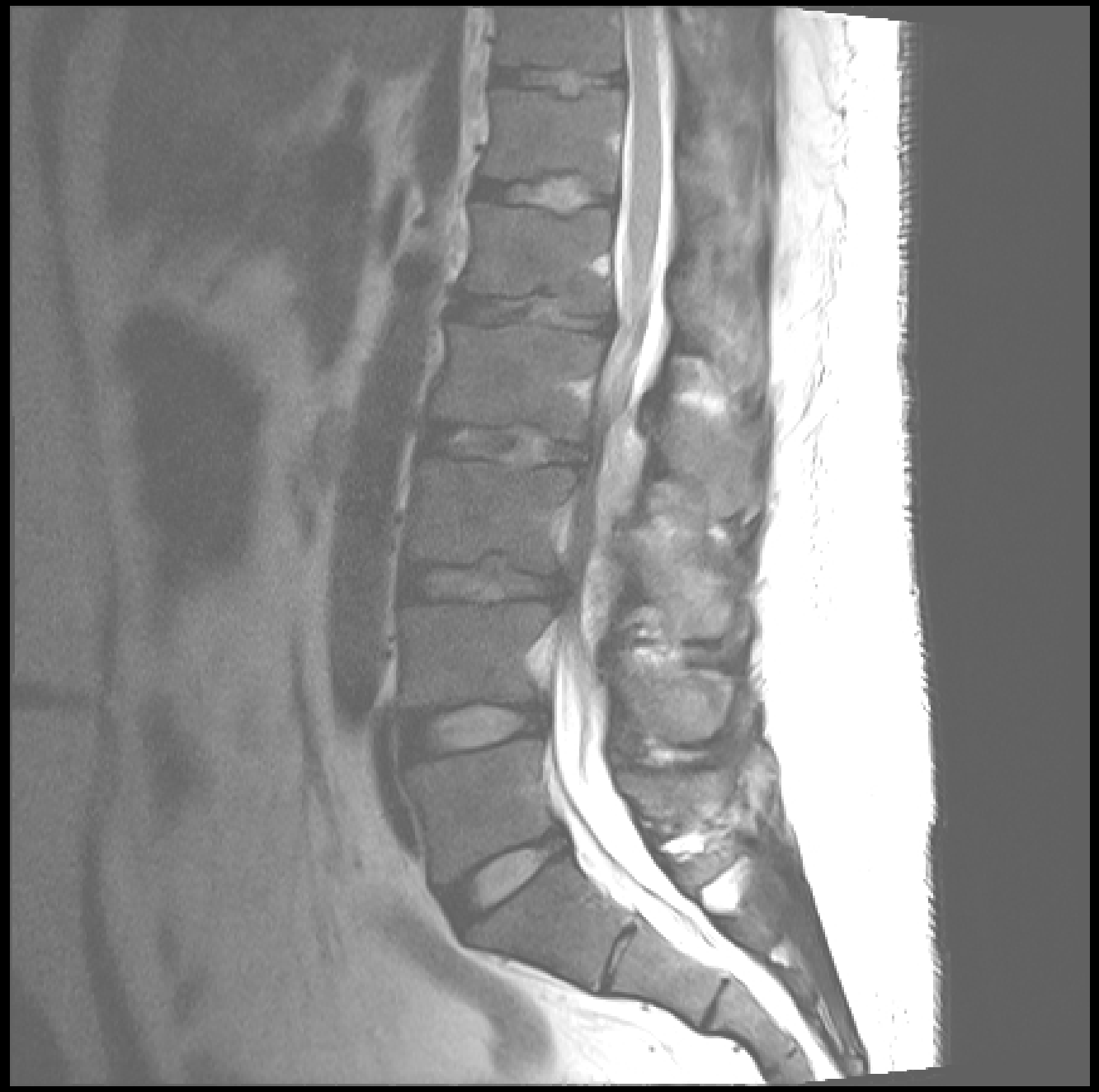
NEUROGENIC CLAUDICATION / RIGHT L5 RADICULOPATHY
SPINAL STENOSIS / RIGHT L4/5 DISC HERNIATION





LEFT L2 RADICULOPATHY
OSTEOPOROTIC FRACTURE L1





BILATERAL L3 RADICULOPATHY
EPIDURAL ABSCESS


RIGHT THIGH / GROIN PAIN
RIGHT HIP OA


L
LEFT KNEE / LEG PAIN
LEFT KNEE OA

REST PAIN
CALF AND FOOT

PERIPHERAL VASCULAR DISEASE

RIGHT BUTTOCK / THIGH PAIN

TROCHANTERIC BURSITIS

MUSCLE-FASCIA ORIGIN

- Chronic exertional compartment syndrome
- Fascial defects
- Unresolved Muscle Strain

BONE-PERIOSTEUM ORIGIN

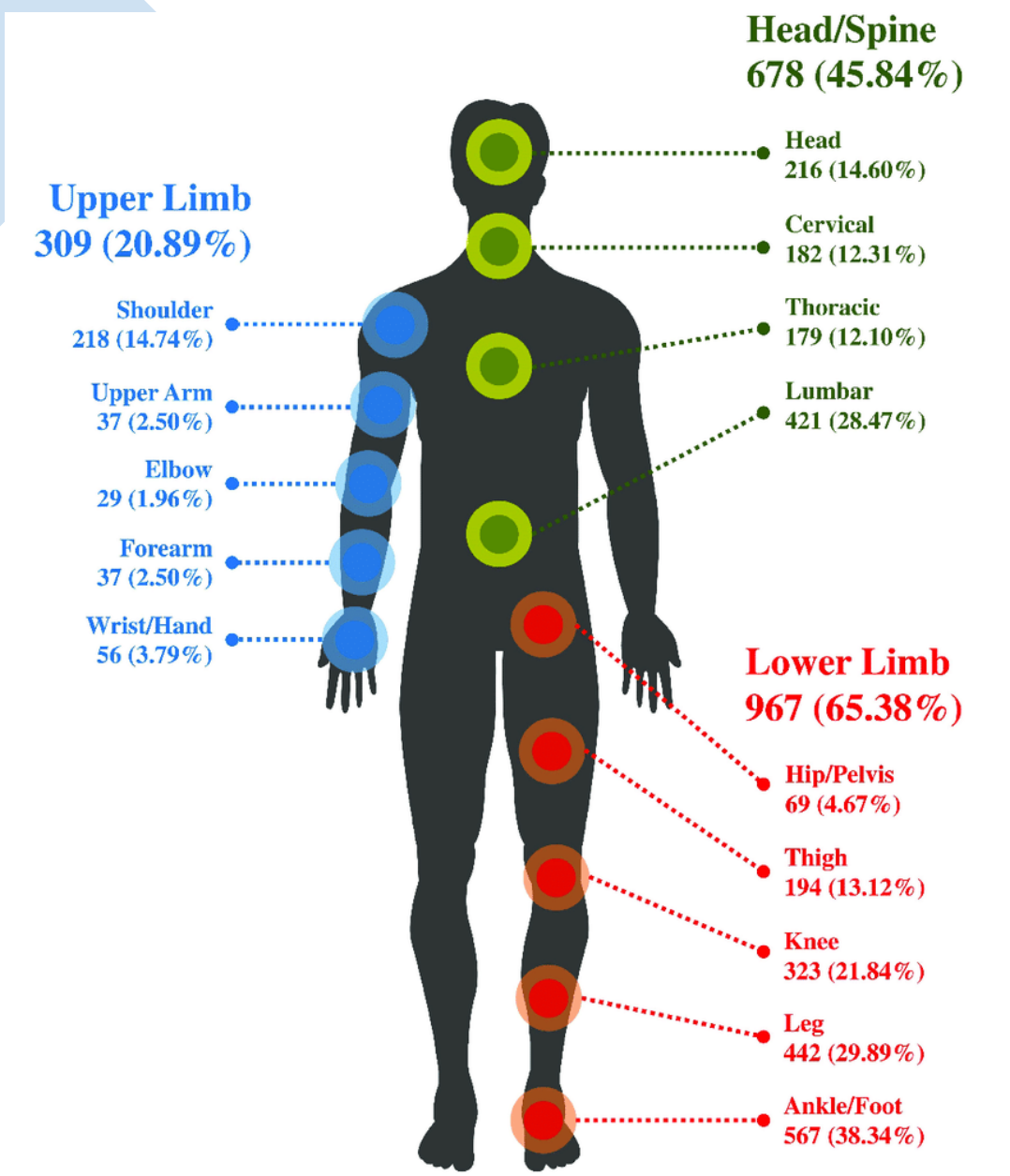
- Medial tibia stress syndrome
- Fibular and tibial stress fractures

NERVE ORIGIN

- Lumbar disc herniation
  (Referred pain arised from the low back)
- Nerve entrapment syndrome
  (e.g. of the superficial peroneal nerve as it winds around the head of the fibula)

VASCULAR ORIGIN

- Vascular claudication
  (Atherosclerotic or popliteal artery entrapment syndrome)



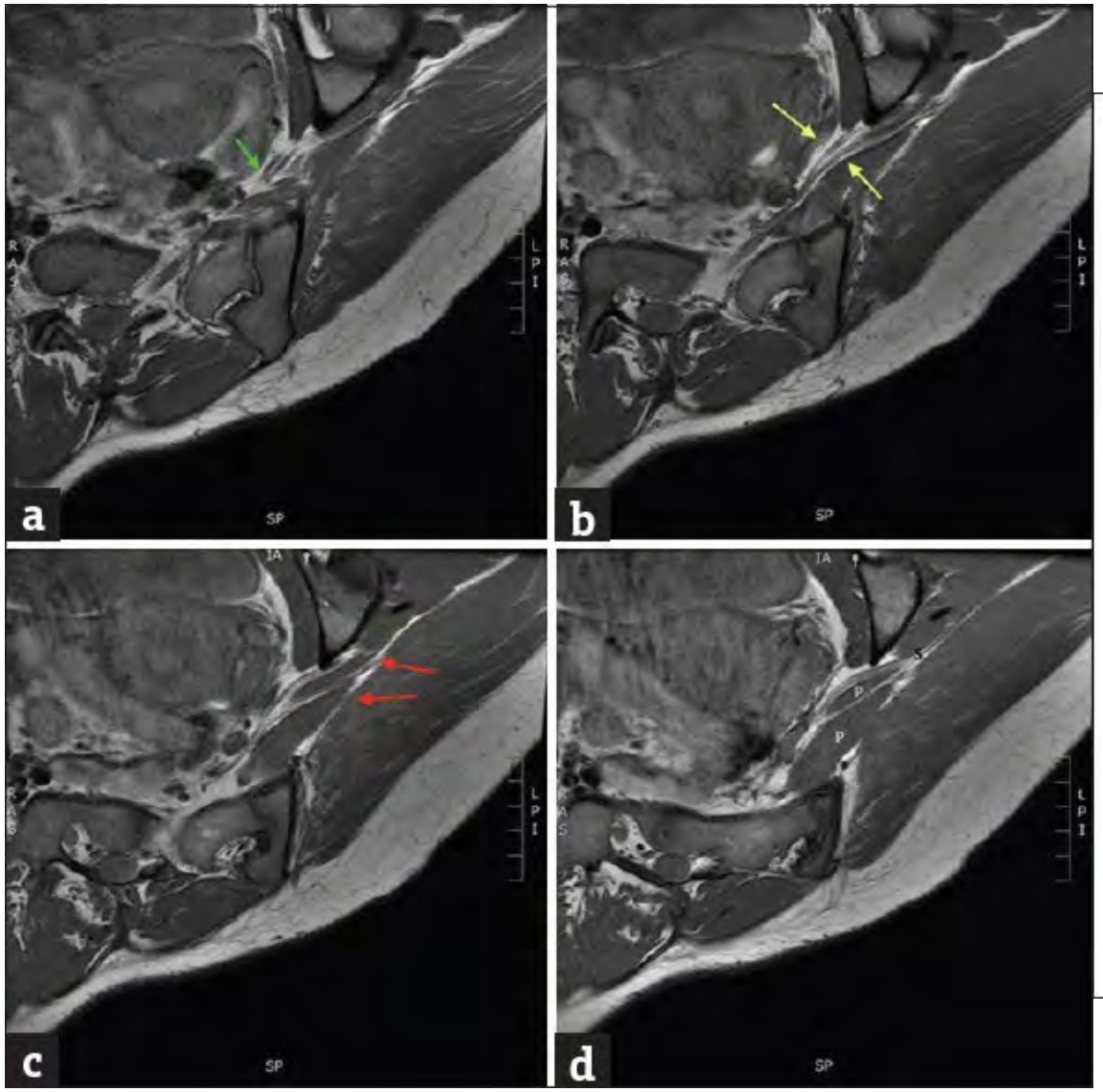
Sciatica **Lifetime incidence reported between 10% to 40%.** An annual incidence of 1 to 5%

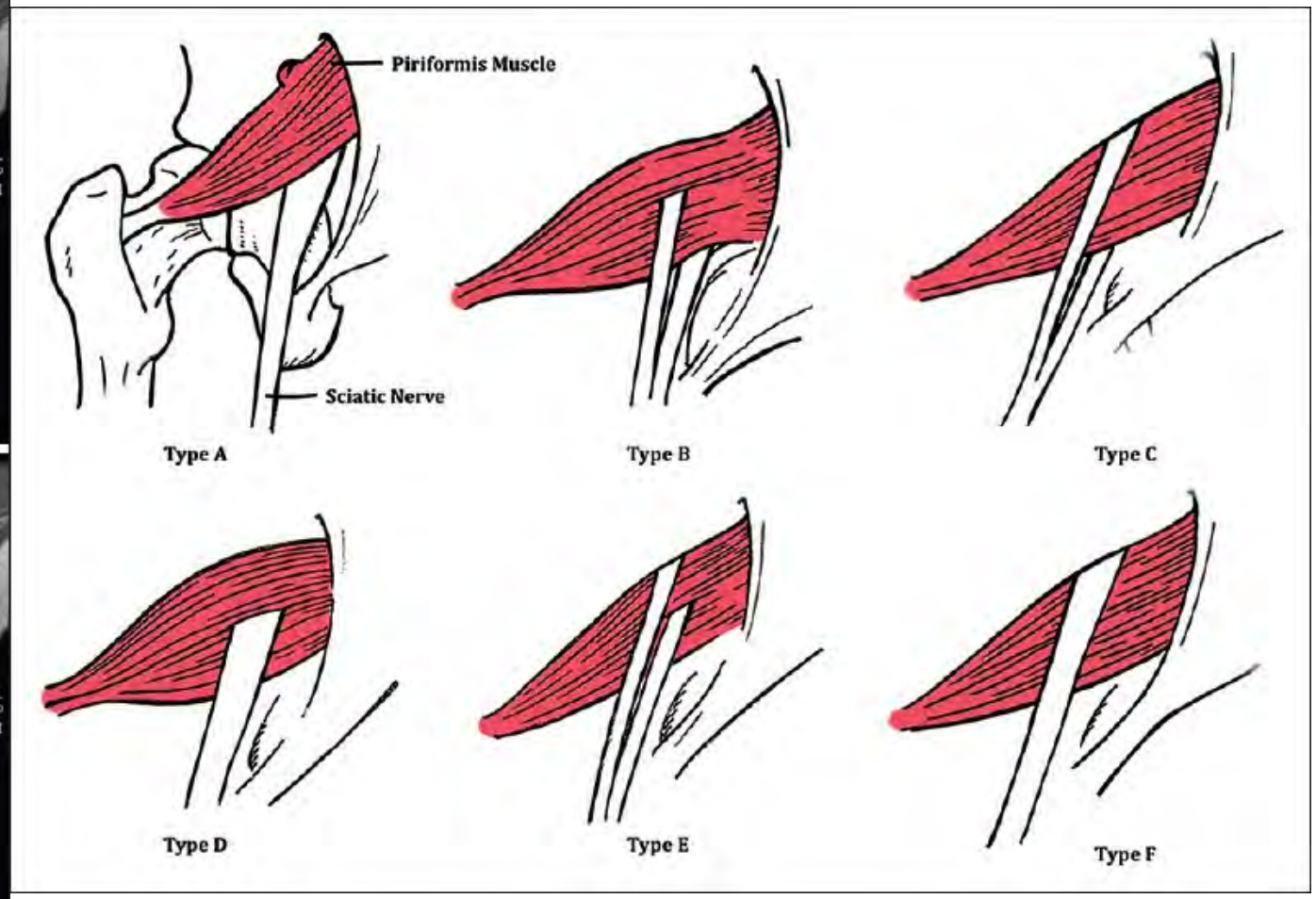
Peripheral Vascular Disease

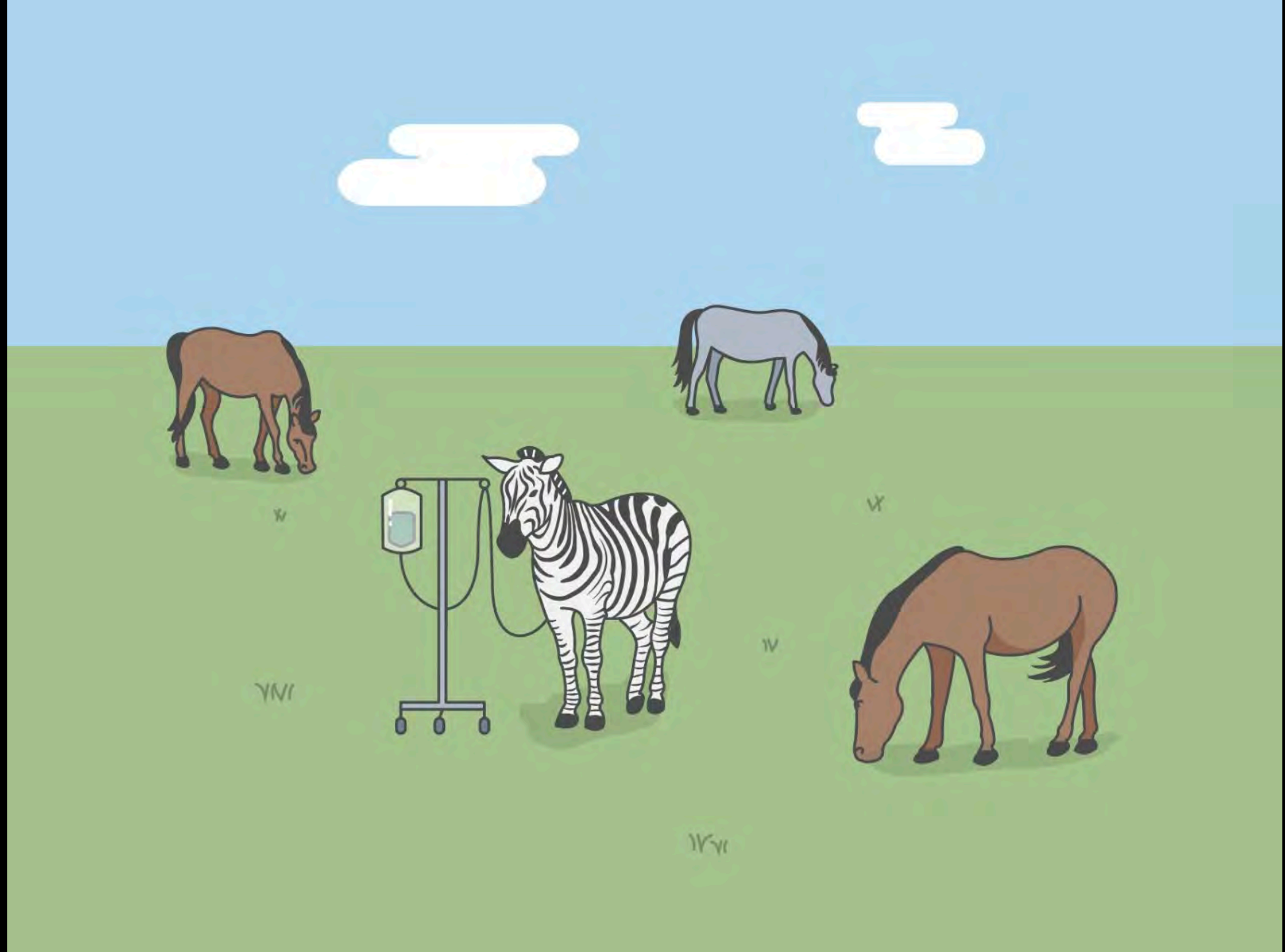
Prevalence in Canada is estimated to be ≈7%.

Piriformis Syndrome **0.3% to 6% of all cases of low back pain and/or sciatica.**

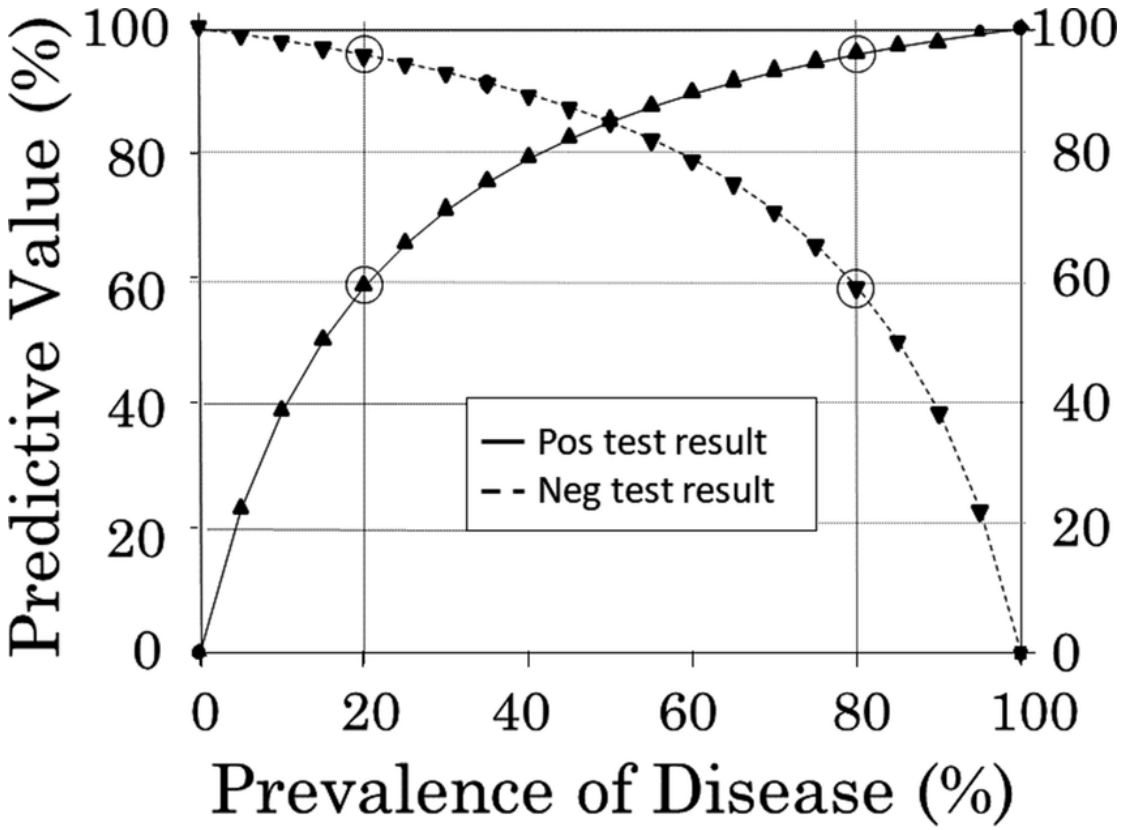
PIRIFORMIS SYNDROME







PRE-TEST PROBABILITY



SCIATICA

- **There appears to be no gender predominance**
- **Peak incidence in patients in their fourth decade**
- **Lifetime incidence reported between 10% to 40%**
- **An annual incidence of 1 to 5%**
- **No association with body height has been established except in the age 50 to 60 group.**
- **It rarely occurs before age 20 unless trauma**
- **Some studies do suggest a genetic predisposition.**
- **Physical activity increases incidence in those with prior sciatic symptoms and decreases in those with no prior symptoms.**
- **Occupational predisposition has been shown in machine operators, truck drivers,**

RIGHT L5 RADICULOPATHY
RIGHT L4/5 DISC HERNIATION

RIGHT L5 RADICULOPATHY
DEGENERATIVE SPONDYLOLISTHESIS L4/5

RIGHT THIGH / GROIN PAIN
RIGHT HIP OA

REST PAIN
CALF AND FOOT

PERIPHERAL VASCULAR DISEASE

DIFFERENTIAL DIAGNOSES

>95%

CONDITION	SUBJECTIVE FINDINGS	OBJECTIVE FINDINGS
Lumbar Radiculopathy	Low back pain Unilateral motor weakness May not have leg pain	Potential sensory deficits, motor deficits, altered tendon reflexes +ve neurodynamics
Peripheral Artery Disease	Ache/burning in legs Aggravated by walking Eased with rest	Pain reproduced with walking
Meralgia Paraesthetica	Burning anterolateral thigh Non-mechanical symptoms	SLR -ve Nil reproduction with lumbar movements ?+ve femoral test
GTPS	Proximal lateral hip pain Sleeping on painful side Pain on stair climbing	Grimaldi's cluster
Hip OA	Early morning stiffness <30 mins Pain/stiffness in groin, buttock Limping Pain putting on shoes/socks	C-sign Loss of internal rotation +ve FABER test
SIJ		Laslett cluster
Piriformis/Deep Gluteal Syndrome	Diffuse buttock/posterior thigh pain Pain on sitting	Active piriformis contraction & stretch tests
AVN of the Hip	Long term steroids No MOI	Clear hip
Focal Neuropathies (e.g. tarsal tunnel)	Neuro descriptors in the foot	Complete full neuro exam
Inflammatory/Metabolic Causes	Past medical history of RA, Ankylosing Spondylitis, Diabetes	

Table 1. Differential diagnosis of lateral hip pain

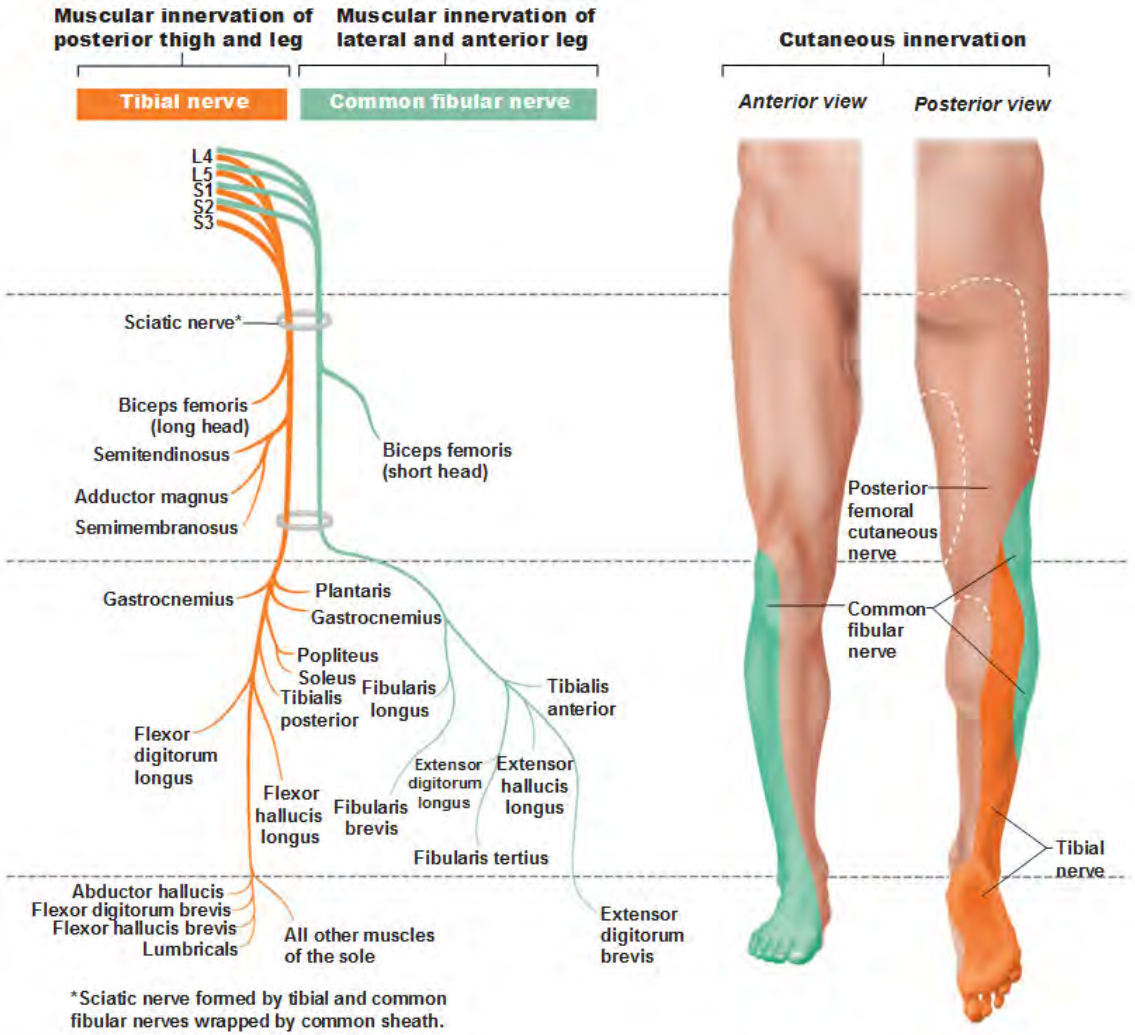
Avascular necrosis
Femoral nerve irritation
Fibromyalgia
Gluteal tears
Heterotopic calcification
Iliotibial band and abductor tendonitis
Lumbar spine disease
Metastases
Osteoarthritis
Stress fracture
Trochanteric bursitis

WORSE THAN USELESS

MEANINGLESS WITHOUT PREVALENCE DATA

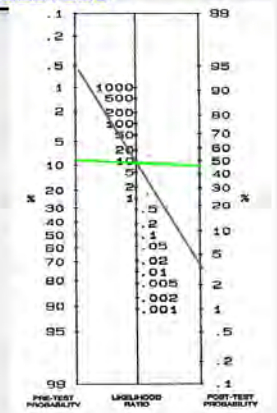
DIFFERENTIAL DIAGNOSIS

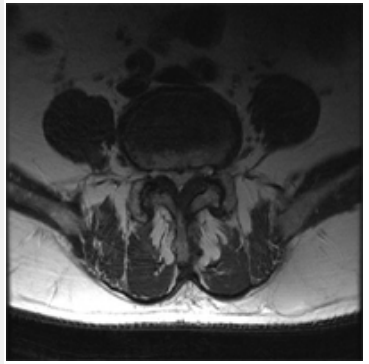
ANATOMY

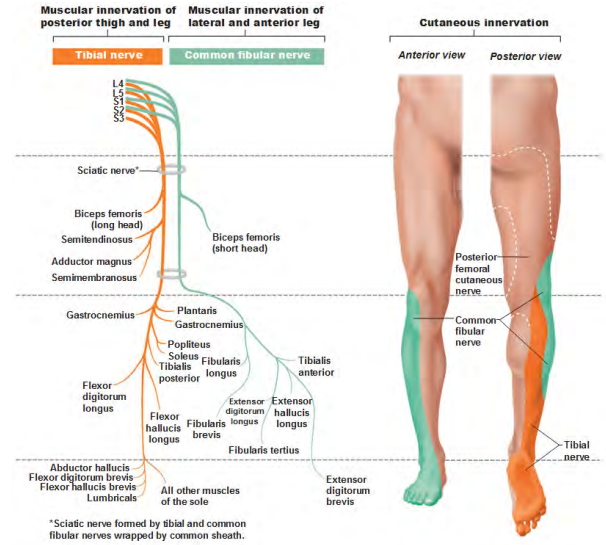


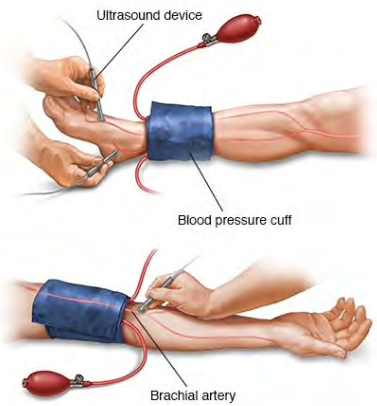
LIKELIHOOD RATIO AND PRE- AND POST-TEST PROBABILITIES

For a given test with a given likelihood ratio, the post-test probability will depend on the pre-test probability (that is, the prevalence of the condition in the sample being assessed)







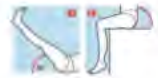


History

Investigation

Diagnosis

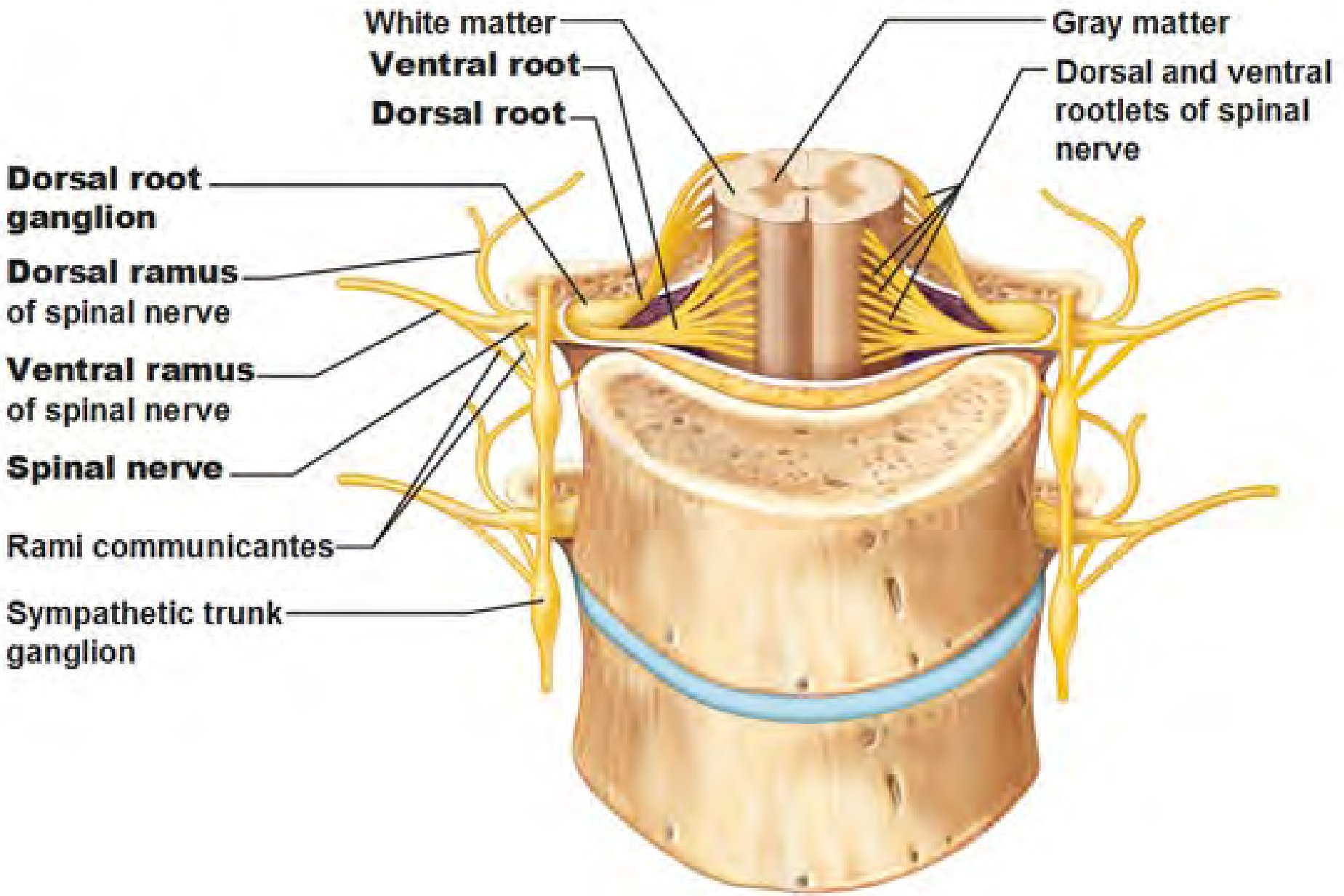
Examination



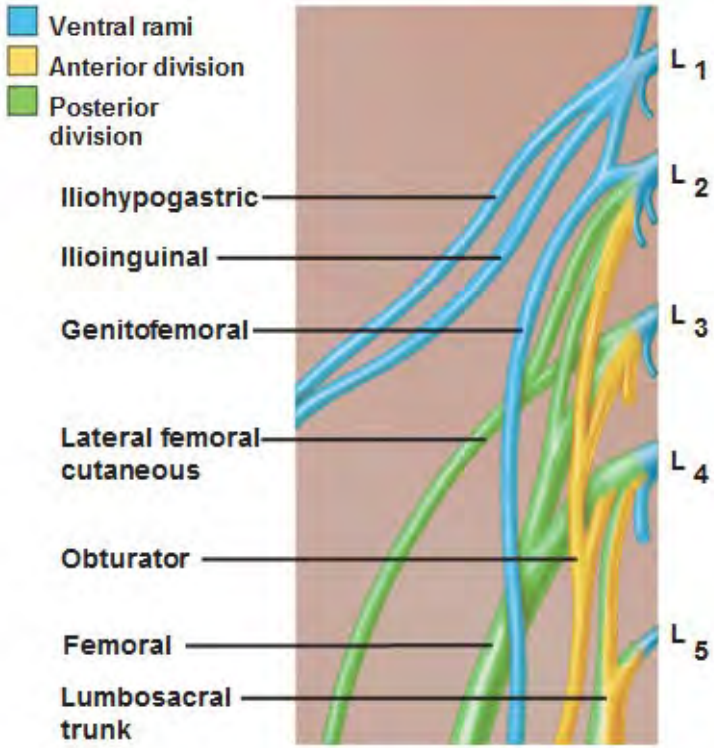
Buerger's test

- Patient on his back
- **A-Rising** the affected limb cause **blanching** within 2-3 M.
- **B-Lowering** the leg below the below the horizontal plane leads to **cyanotic congestion**
- Bureger's angle : is the angle of elevation ay which the pallor occurs
- Normally no change of color occur whatever the position of the limb.

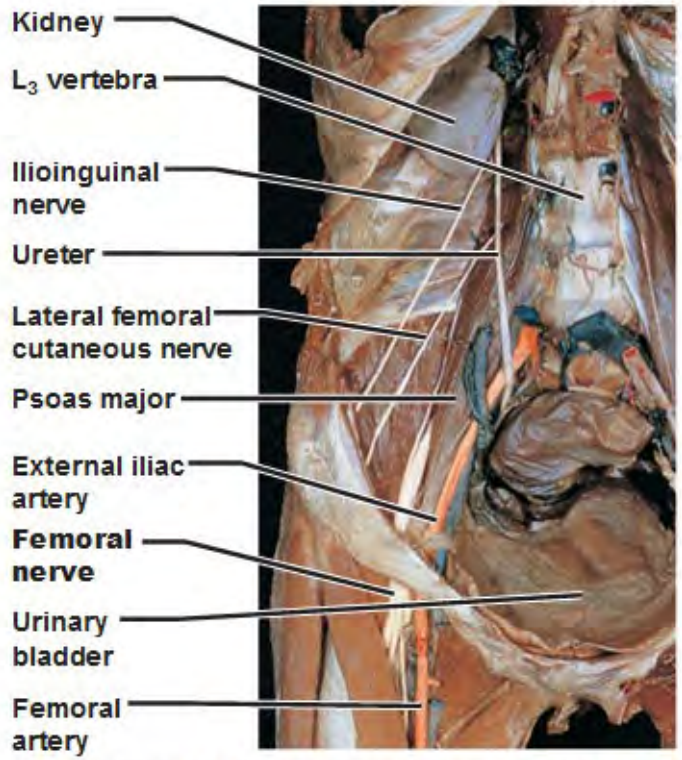
Spinal Nerves – Note position of dorsal root ganglion



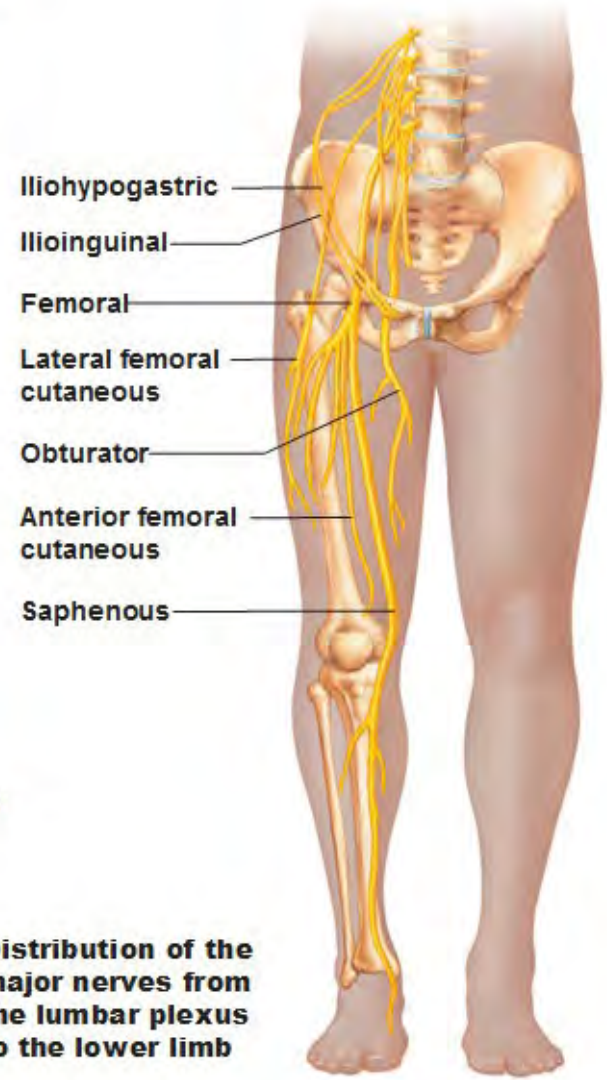
The Lumbar Plexus



(a) Ventral rami and major branches of the lumbar plexus

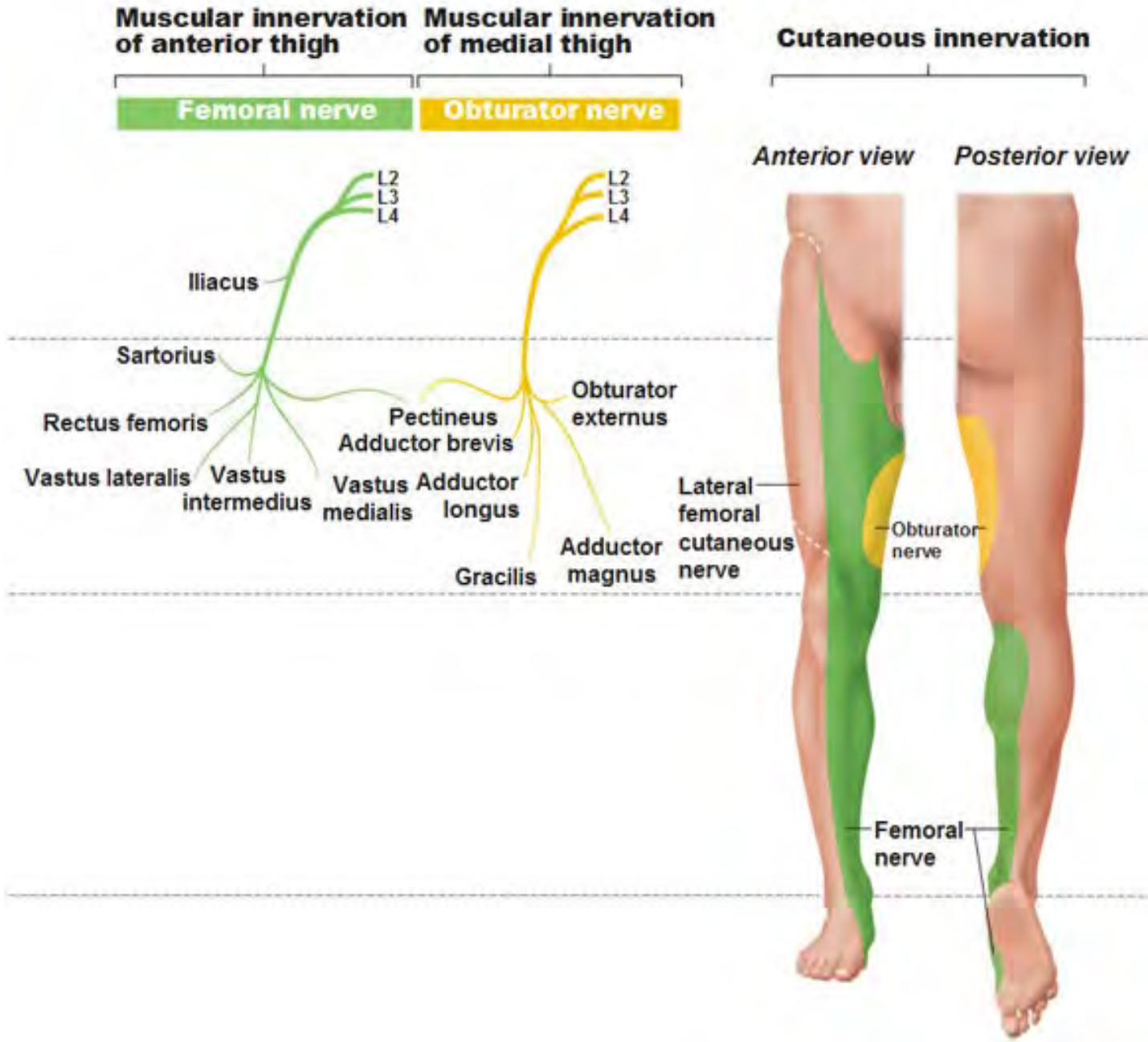


(b) Nerves of the lumbar plexus, anterior view

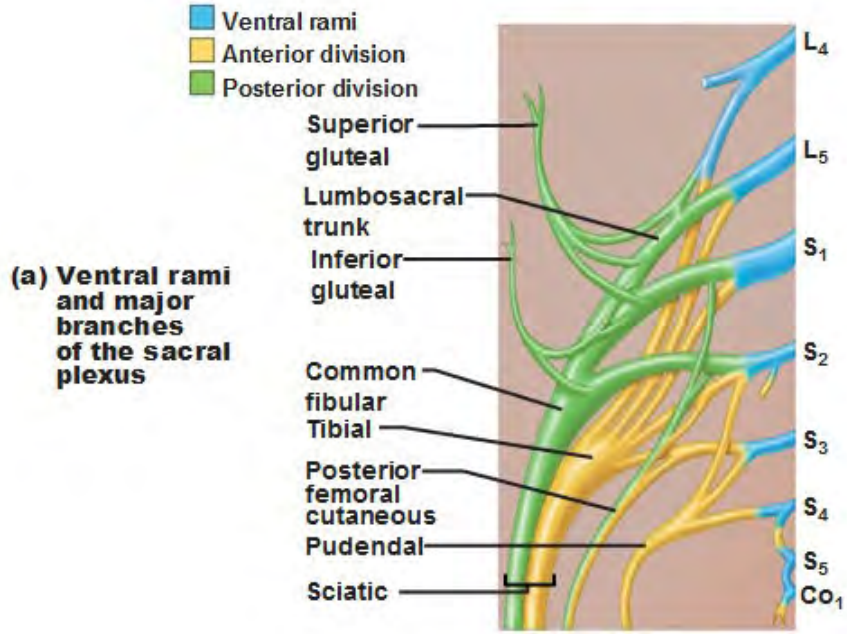


(c) Distribution of the major nerves from the lumbar plexus to the lower limb

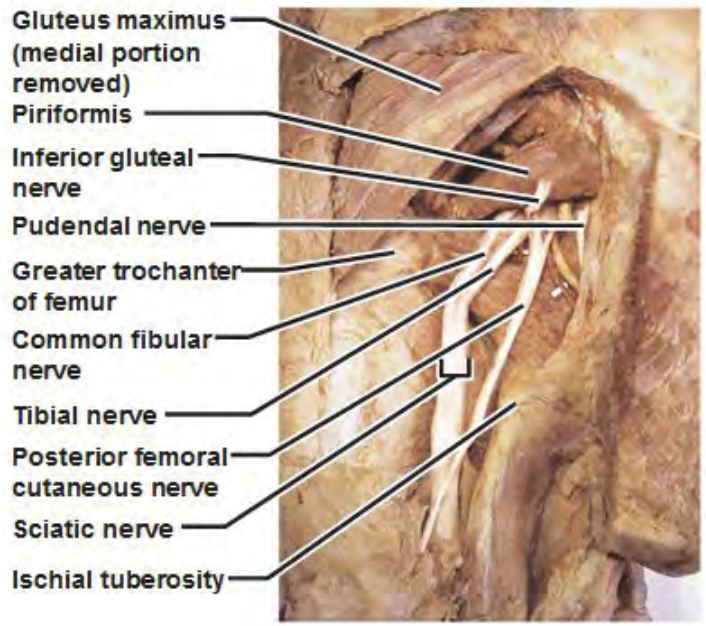
The Lumbar Plexus



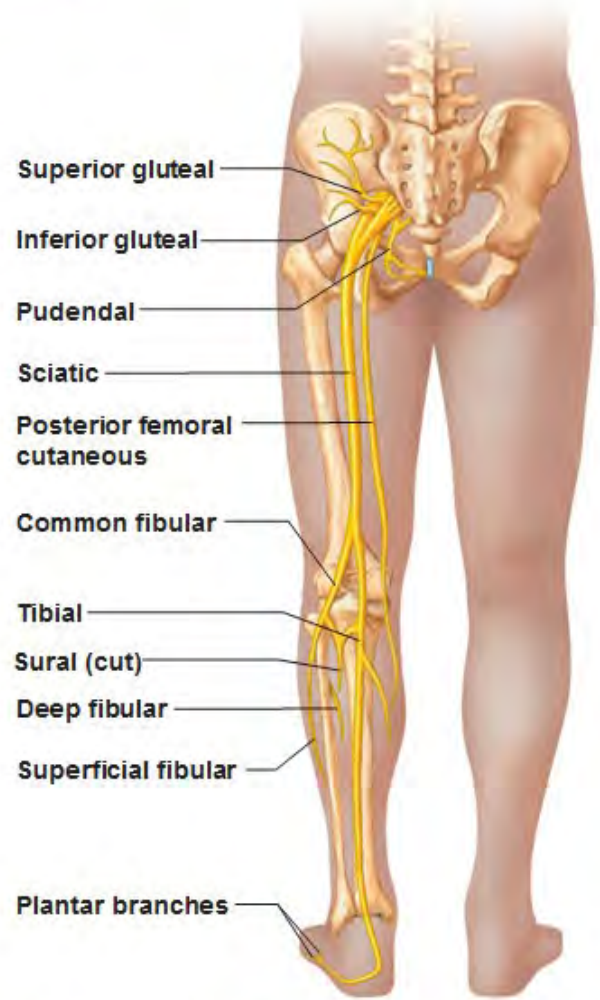
The Sacral Plexus



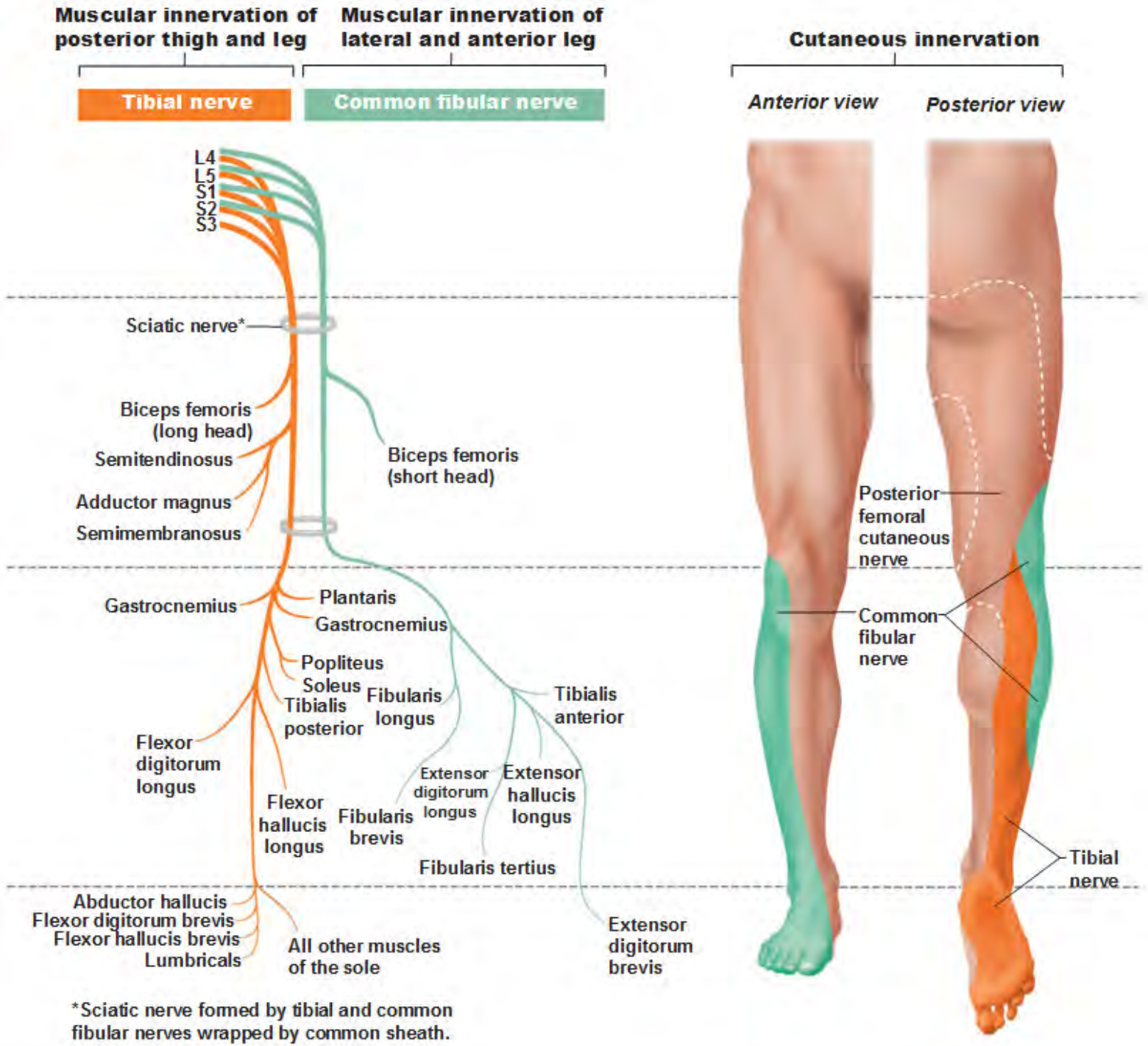
(a) Ventral rami and major branches of the sacral plexus

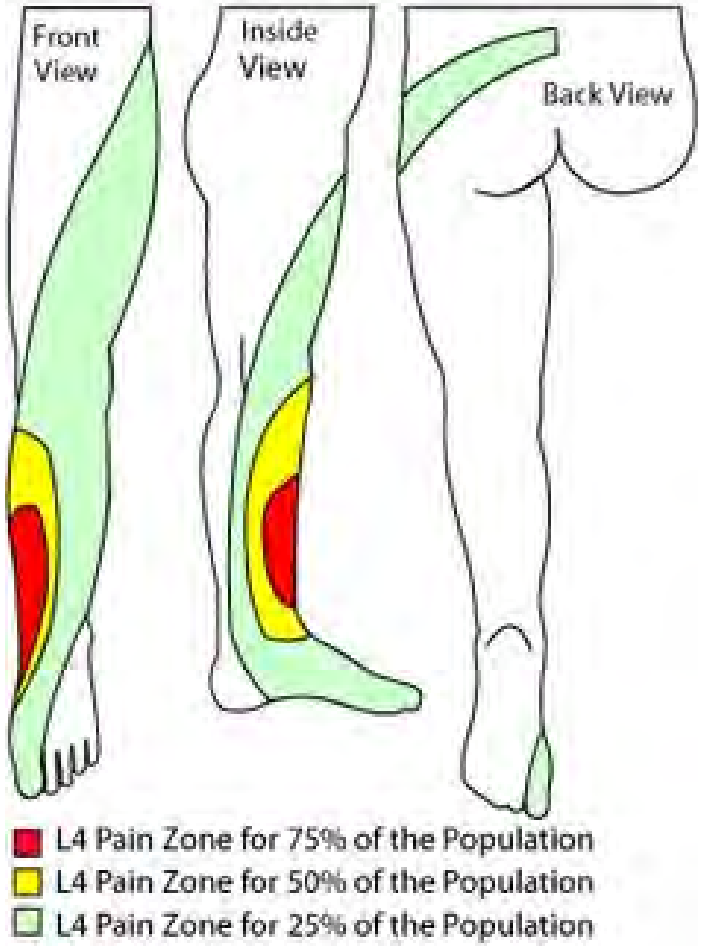


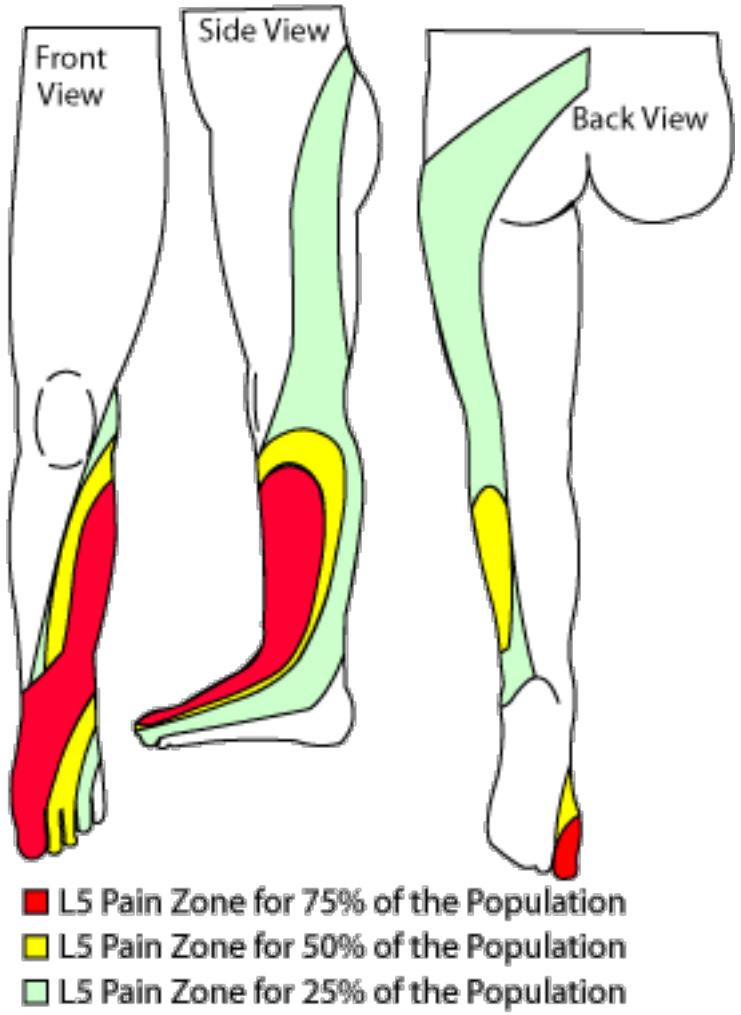
(b) Dissection of the gluteal region, posterior view

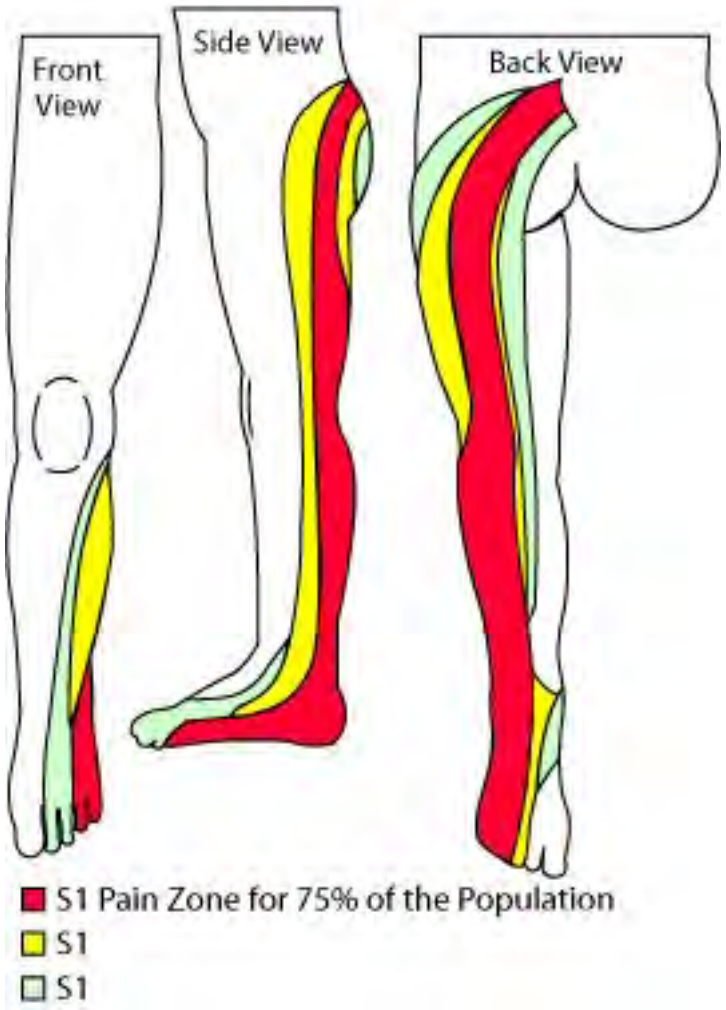


(c) Distribution of the major nerves from the sacral plexus to the lower limb


Muscular innervation of posterior thigh and leg
Muscular innervation of lateral and anterior leg
Tibial nerve
Common fibular nerve
L4
L5
S1
S2
S3
Sciatic nerve*
Biceps femoris (long head)
Semitendinosus
Adductor magnus
Semimembranosus
Biceps femoris (short head)
Gastrocnemius
Plantaris
Gastrocnemius
Popliteus
Soleus
Tibialis posterior
Fibularis longus
Tibialis anterior
Flexor digitorum longus
Flexor hallucis longus
Extensor digitorum longus
Fibularis brevis
Extensor hallucis longus
Fibularis tertius
Abductor hallucis
Flexor digitorum brevis
Flexor hallucis brevis
Lumbricals
All other muscles of the sole
Extensor digitorum brevis
*Sciatic nerve formed by tibial and common fibular nerves wrapped by common sheath.
Cutaneous innervation
Anterior view
Posterior view
Posterior femoral cutaneous nerve
Common fibular nerve
Tibial nerve


Front View
Inside View
Back View
L4 Pain Zone for 75% of the Population
L4 Pain Zone for 50% of the Population
L4 Pain Zone for 25% of the Population

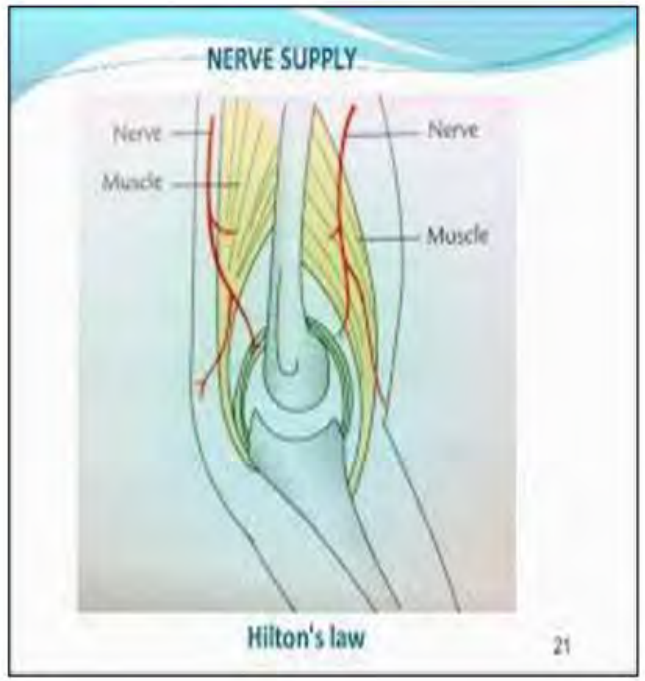

Front View
Side View
Back View
L5 Pain Zone for 75% of the Population
L5 Pain Zone for 50% of the Population
L5 Pain Zone for 25% of the Population


Front View
Side View
Back View
S1 Pain Zone for 75% of the Population
S1
S1

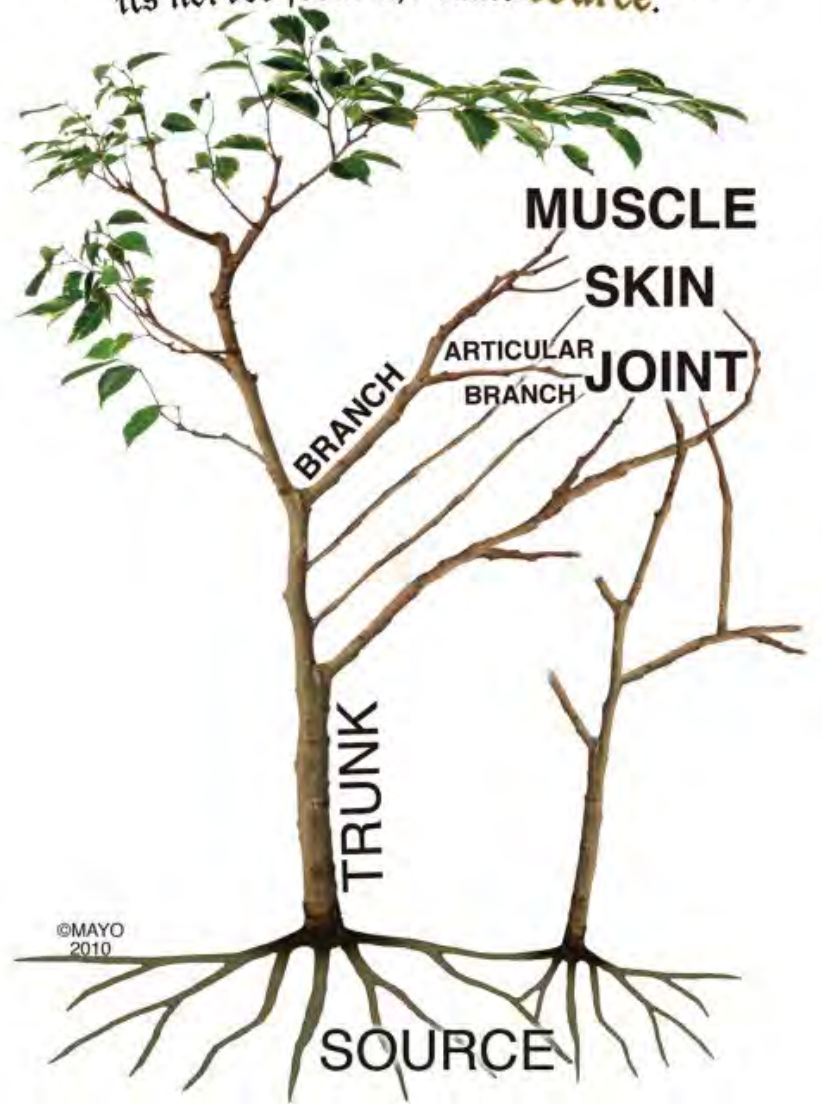
NERVE SUPPLY OF JOINTS

- The capsule and ligaments receive an abundant sensory nerve supply.
- ***HILTON'S LAW:***

  "A nerve supplying a joint also supplies the muscles moving that joint and the skin overlying the insertions of these muscles."



"The same trunks of nerves whose branches supply the groups of muscles moving a joint furnish also a distribution of nerves to the skin over the insertions of the same muscles; and--what at this moment more especially merits our attention--the interior of the joint receives its nerves from the same source."



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THE SPINE JOURNAL

The Spine Journal 14 (2014) 2028–2037

Clinical Study

Diagnostic accuracy of history taking to assess lumbosacral nerve root compression

Annemieke J.H. Verwoerd, MD, MSc[a,*], Wilco C. Peul, MD, PhD[b,c], Sten P. Willemsen, MSc[d], Bart W. Koes, PhD[a], Carmen L.A.M. Vleggeert-Lankamp, MD, PhD[b], Abdelilah el Barzouhi, MD, PhD[b], Pim A.J. Luijsterburg, PhD[a], Arianne P. Verhagen, PhD[a]

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Table 3
Multivariate logistic regression analysis of the six pre-selected history items in patients with sciatica (n=377)

Characteristics	Nerve root compression OR (95% CI)	Disc herniation OR (95% CI)
Age (y)	1.00 (0.97–1.03)	0.99 (0.96–1.02)
Male sex	1.77 (1.05–3.00)	1.51 (0.83–2.76)
Pain worse in leg than in back	1.67 (0.99–2.81)	1.45 (0.80–2.63)
Sensory loss	2.31 (1.10–4.85)	3.54 (1.64–7.64)
Muscle weakness	0.57 (0.31–1.05)	0.69 (0.35–1.36)
Pain worse on coughing/ sneezing/straining	1.20 (0.68–2.11)	1.10 (0.58–2.10)
AUC of the model	0.65 (0.58–0.71)	0.66 (0.58–0.74)

OR, odds ratio; CI, confidence interval; AUC, area under the receiver operating characteristic curve.

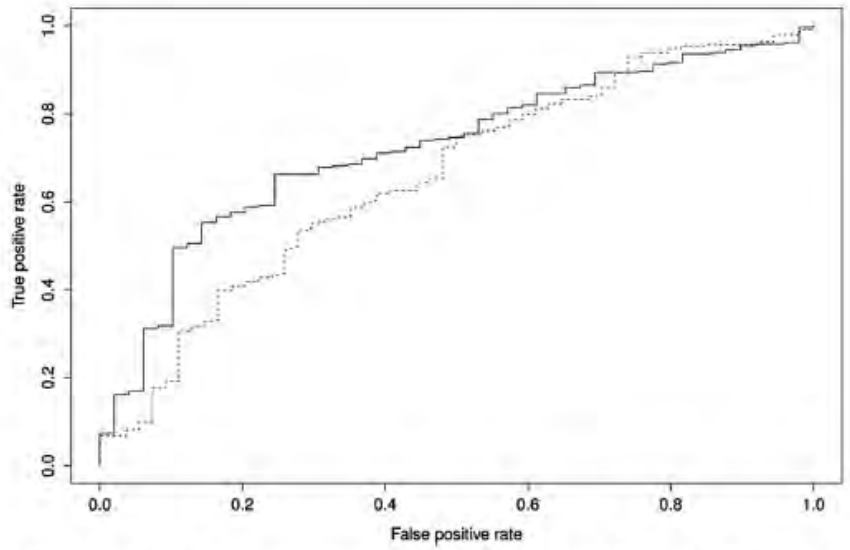

Fig. 3. Receiver operating characteristic curves of the models with outcome disc herniation. Dotted line: model of the six pre-selected history items. Solid line: model of the six pre-selected history items after adding "BMI" and "sudden onset" (significant [p<.05] in univariate analysis). BMI, body mass index.

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The Spine Journal 13 (2013) 657–674

THE SPINE JOURNAL

Review Article

Neurological examination of the peripheral nervous system to diagnose lumbar spinal disc herniation with suspected radiculopathy: a systematic review and meta-analysis

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Received 23 August 2011; revised 9 May 2012; accepted 8 February 2013

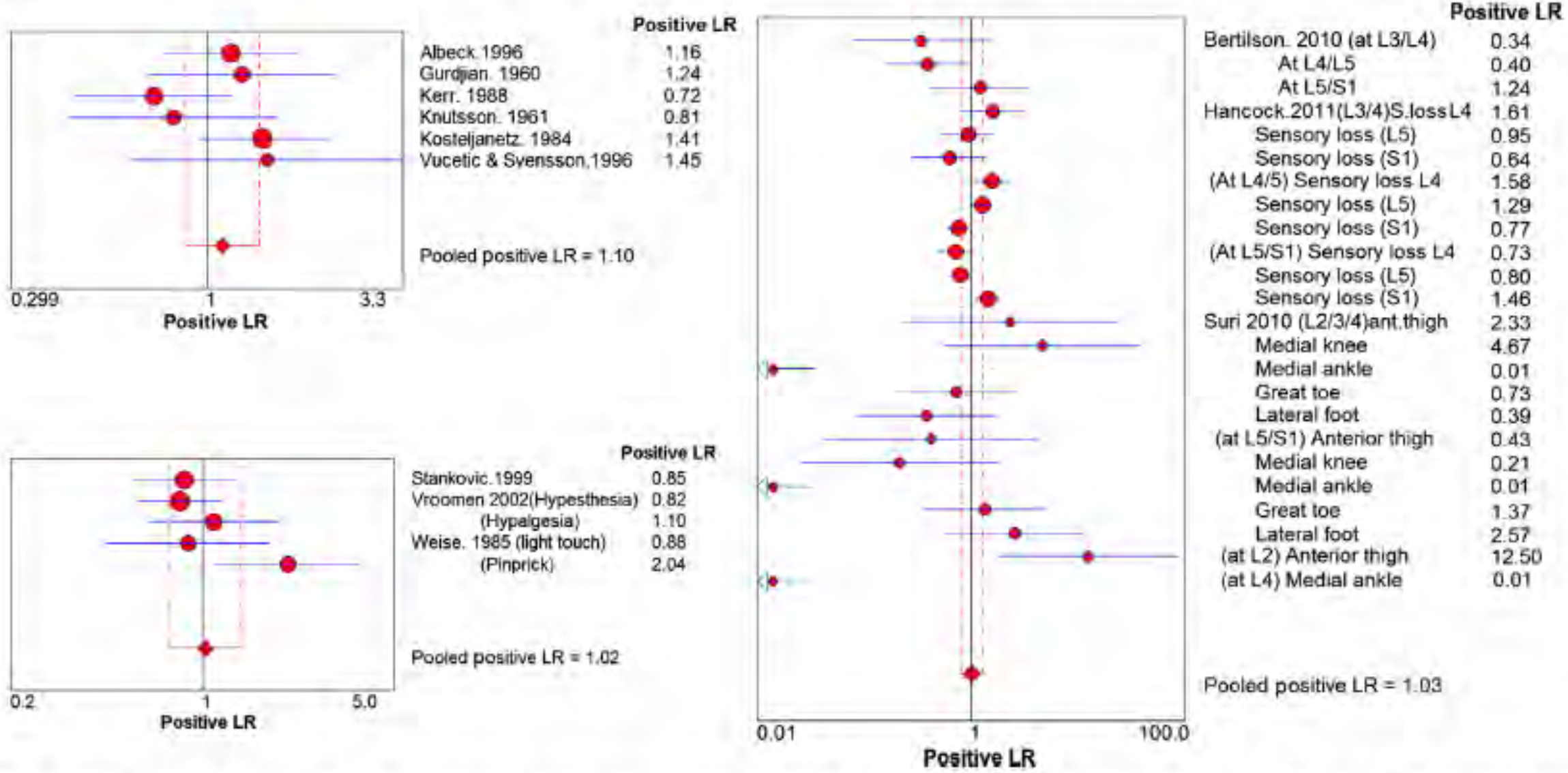

Fig. 2. Forest plots for sensory deficits based on the reference standard. (Top Left) Surgical findings, (Right) radiographic findings at specific lumbar disc herniated levels, and (Bottom Left) radiographic findings. LR, likelihood ratio.

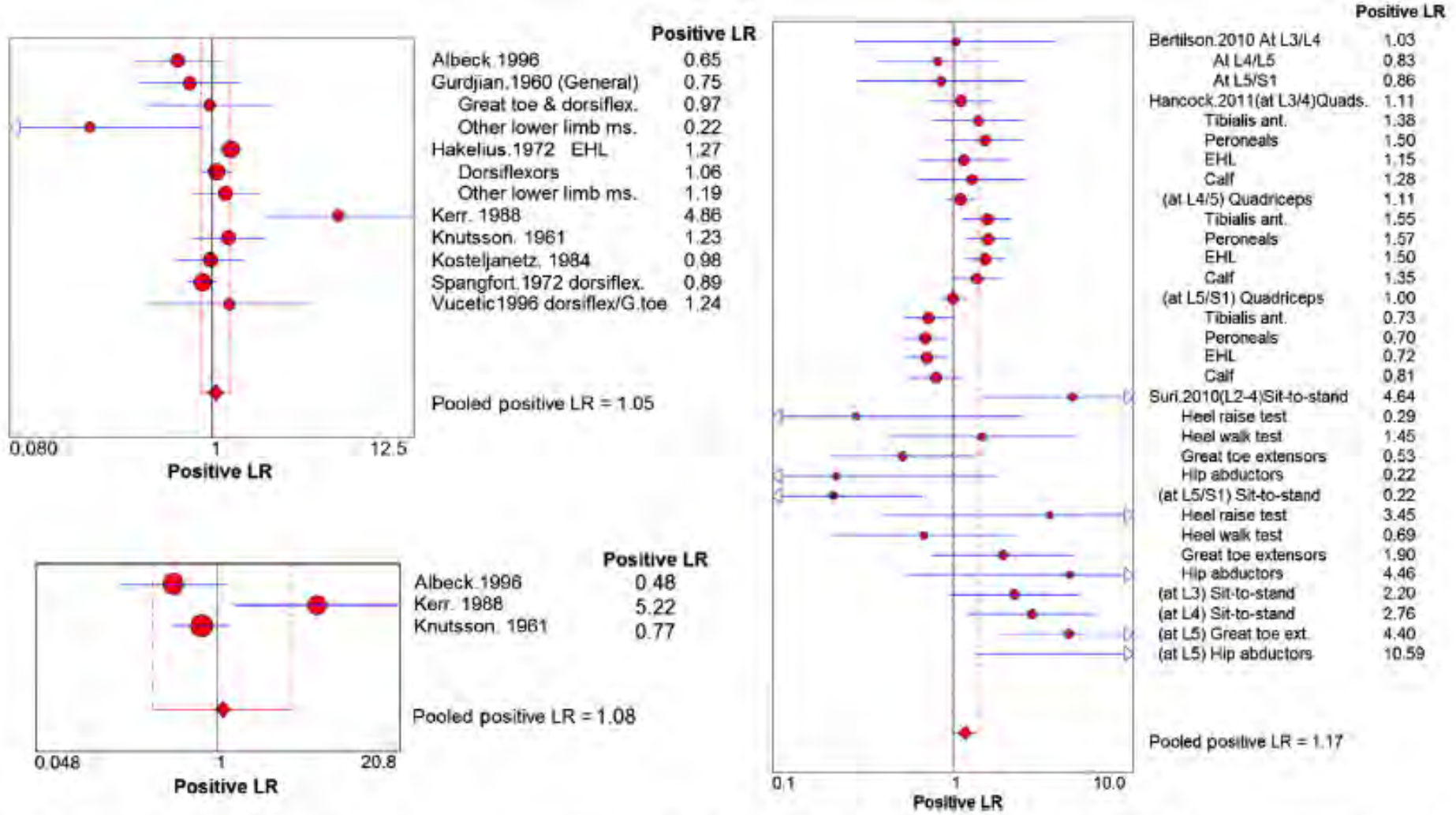

Fig. 3. Forest plots for motor deficits based on the reference standard. (Top Left) Surgical findings (paresis), (Right) radiographic findings at specific lumbar disc herniated levels (paresis), and (Bottom Left) surgical findings (atrophy). LR, likelihood ratio.

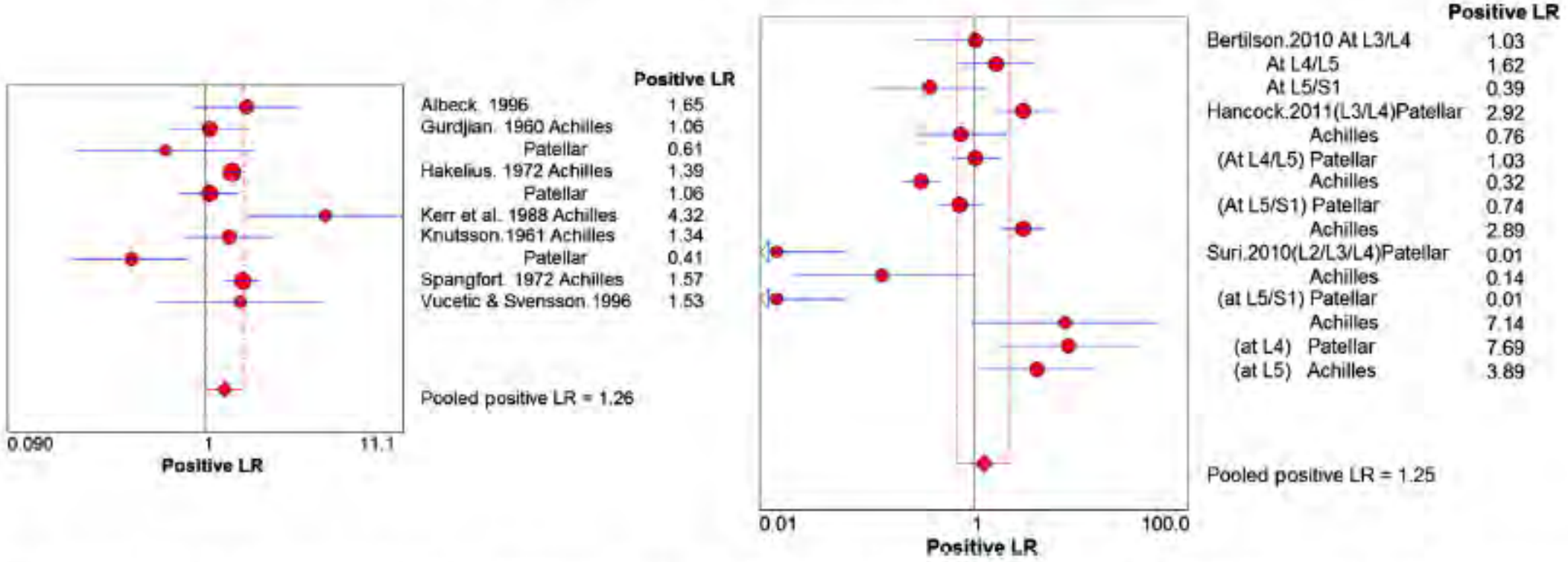

Fig. 4. Forest plots for reflex deficits based on the reference standard. (Left) Surgical findings and (Right) radiographic findings at specific lumbar disc herniated levels. LR, likelihood ratio.

Diagnostic Accuracy Studies tool, and where appropriate, a meta-analysis was performed.
RESULTS: A total of 14 studies that investigated three standard neurological examination components, sensory, motor, and reflexes, met the study criteria and were included. Eight distinct meta-analyses were performed that compared the findings of the neurological examination with the reference standard results from surgery, radiology (magnetic resonance imaging, computed tomography, and myelography), and radiological findings at specific lumbar levels of disc herniation. Pooled data for sensory testing demonstrated low diagnostic sensitivity for surgically (0.40) and radiologically (0.32) confirmed disc herniation, and identification of a specific level of disc herniation (0.35), with moderate specificity achieved for all the three reference standards (0.59, 0.72, and 0.64, respectively). Motor testing for paresis demonstrated similarly low pooled diagnostic sensitivities (0.22 and 0.40) and moderate specificity values (0.79 and 0.62) for surgically and radiologically determined disc herniation, whereas motor testing for muscle atrophy resulted in a pooled sensitivity of 0.31 and the specificity was 0.76 for surgically determined disc herniation. For reflex testing, the pooled sensitivities for surgically and radiologically confirmed levels of disc herniation were 0.29 and 0.25, whereas the specificity values were 0.78 and 0.75, respectively. The pooled positive likelihood ratios for all neurological examination components ranged between 1.02 and 1.26.
CONCLUSIONS: This systematic review and meta-analysis demonstrate that neurological testing procedures have limited overall diagnostic accuracy in detecting disc herniation with suspected radiculopathy. Pooled diagnostic accuracy values of the tests were poor, whereby all tests demonstrated low sensitivity, moderate specificity, and limited diagnostic accuracy independent of the disc herniation reference standard or the specific level of herniation. The lack of a standardized classification criterion for disc herniation, the variable psychometric properties of the testing procedures, and

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Systematic Literature Review of Imaging Features of Spinal Degeneration in Asymptomatic Populations

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Table 2

Age-specific prevalence estimates of degenerative spine imaging findings in asymptomatic patients[a]

	Age (yr)						
Imaging Finding	20	30	40	50	60	70	80
Disk degeneration	37%	52%	68%	80%	88%	93%	96%
Disk signal loss	17%	33%	54%	73%	86%	94%	97%
Disk height loss	24%	34%	45%	56%	67%	76%	84%
Disk bulge	30%	40%	50%	60%	69%	77%	84%
Disk protrusion	29%	31%	33%	36%	38%	40%	43%
Annular fissure	19%	20%	22%	23%	25%	27%	29%
Facet degeneration	4%	9%	18%	32%	50%	69%	83%
Spondylolisthesis	3%	5%	8%	14%	23%	35%	50%

[a]Prevalence rates estimated with a generalized linear mixed-effects model for the age-specific prevalence estimate (binomial outcome) clustering on study and adjusting for the midpoint of each reported age interval of the study.

The most common causes of LBP with sciatic radiation are:

- Lumbar intervertebral disc hernia
- Lumbar spinal stenosis, in the elderly population
- Spondylolisthesis (vertebra misalignment)
- Pelvic or lumbar muscular spasm and/or inflammation
- Spinal or paraspinal mass.

MEANINGLESS WITHOUT PREVALENCE DATA

Table 1: Lower back pain with sciatic irradiation differential diagnosis

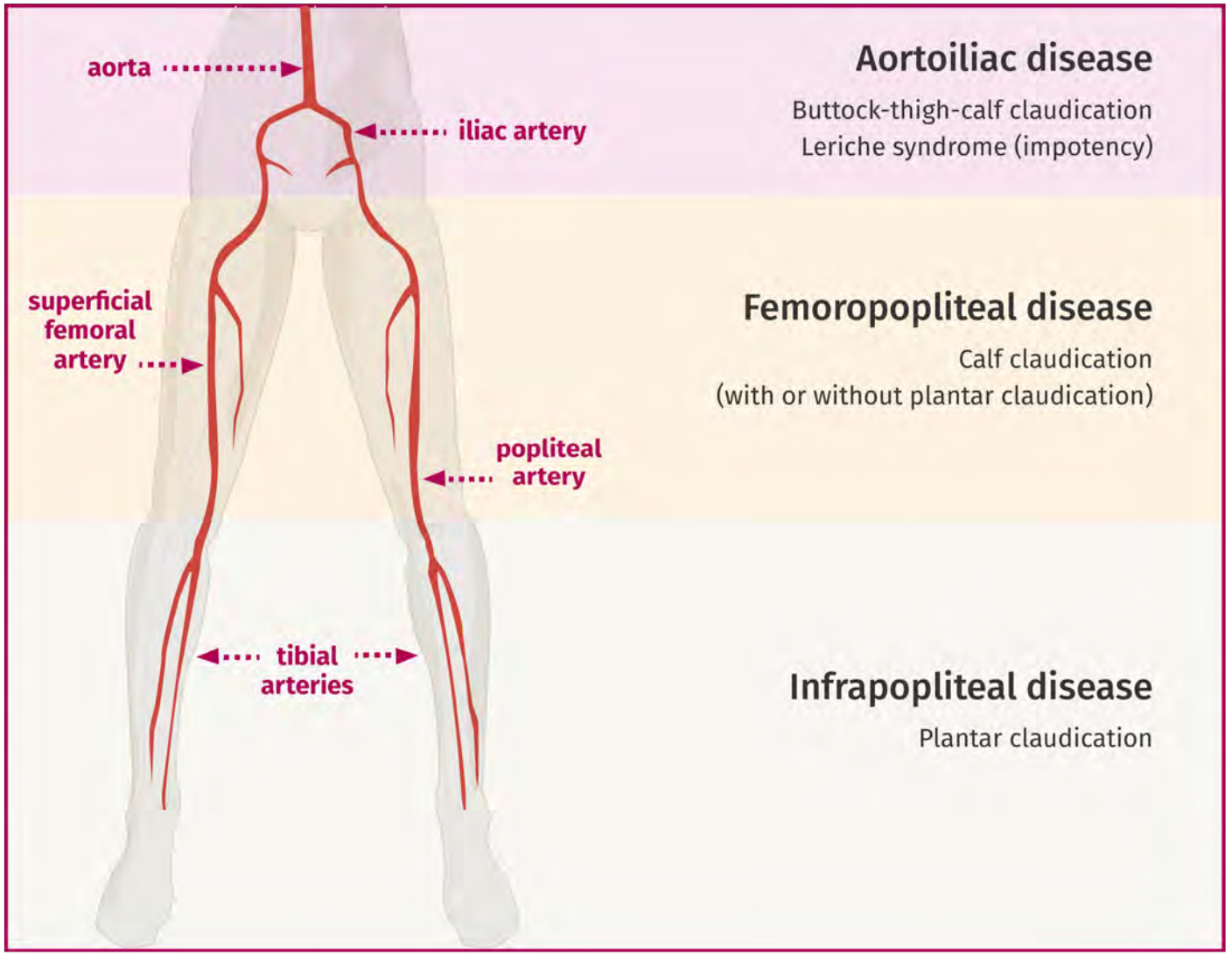
Degenerative disc disease
Facet joint arthropathy and pseudo-radiculopathy
Pyramidal syndrome: It is a syndrome caused by the piriform muscle compressing the sciatic nerve as it exists the pelvis, thus producing radiating pain that can be confused with the L5 root compression.
Myofascial (muscle spasm) pain
Annular tears of the nucleus pulposis
Ligamentous pain of the spinal ligaments
Herniated nucleus pulposis and radiculopathy (pinched nerve)
Bertolotti's syndrome (lumbar spine)
Failed back surgery syndrome
Medical (diabetes, hypothyroidism, hypovitaminosis D, etc.),
Rheumatologic causes of back pain (ankylosing spondylitis, rheumatoid arthritis, Sjogren's syndrome etc.)
Infectious diseases (Lyme disease, neurosyphilis, etc.)
Neoplastic (lymphoma, gammopathy, paraneoplastic syndromes, etc.)


Any Questions

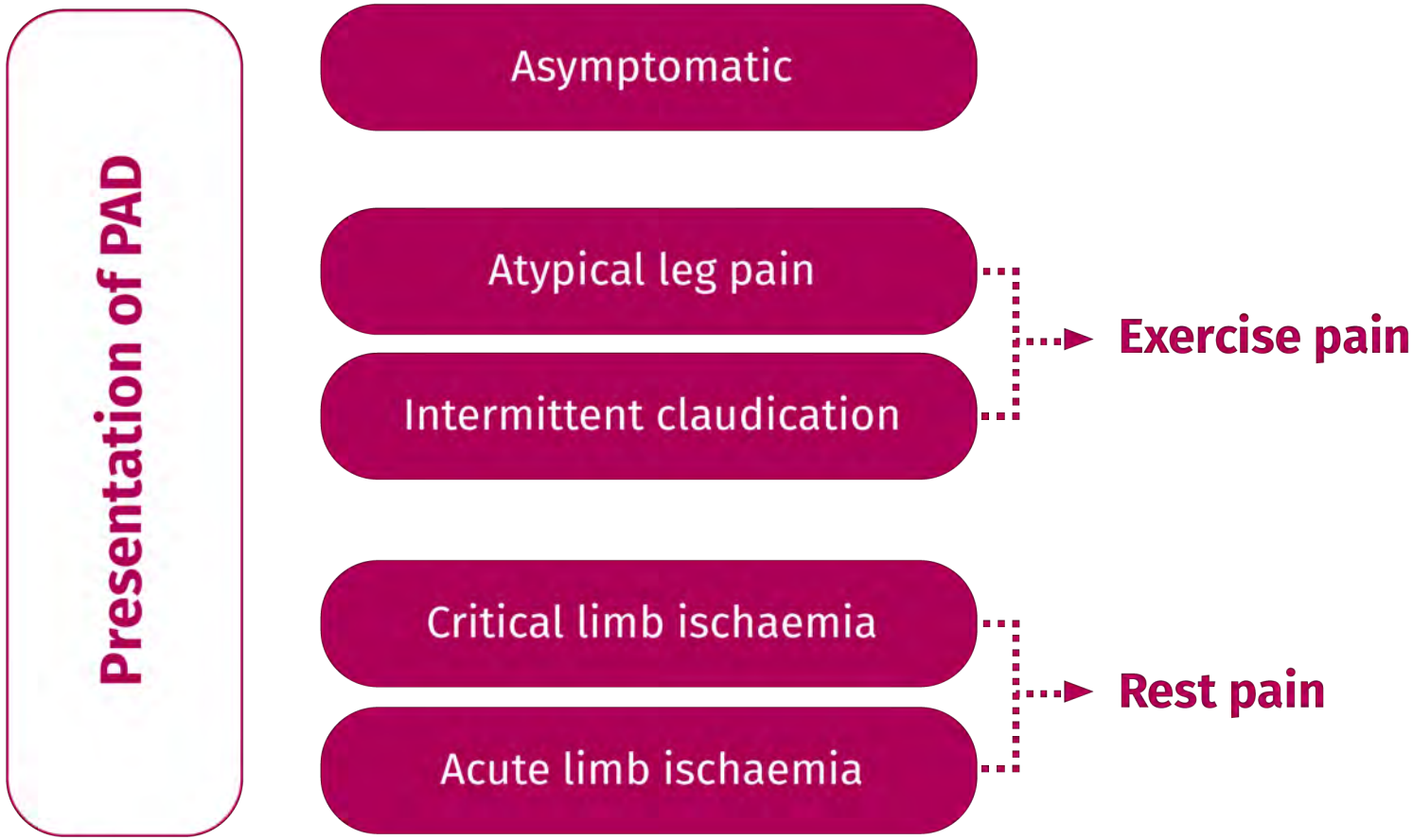
LEFT S1 RADICULOPATHY
LEFT L5S1 DISC HERNIATION

REST PAIN
CALF AND FOOT

PERIPHERAL VASCULAR DISEASE



Serrano Hernando FJ, Conejero AM. *Rev Esp Cardiol* 2007;60:969-982



PAD, peripheral artery disease

1. Norgren L *et al* - Inter-Society Consensus for the Management of PAD (TASC II), *J Vasc Surg* 2007;45:S5-S67;
2. Gerhard-Herman MD *et al* - AHA/ACC lower extremity PAD Guidelines, *J Am Coll Card* 2016; doi:10.1016/j.jacc.2016.11.007;
3. Hirsch AT *et al, Circulation* 2006:113:e463-654

GENERAL VASCULAR EXAMINATION

INSPECT

Breathless?

Can patient lie flat? (exclude orthopnoea)

Skin / mucous membranes — pallor / cyanosis

JVP — elevated in cardiac failure

PALPATE

Abdomen
For abdominal aortic aneurysm

Pulses
Radial — for rate and rhythm
Carotid — for pulse volume and wave form

Ankles
For bilateral pitting oedema as evidence of cardiac failure

AUSCULTATE

Heart sounds
Heart murmurs / signs of cardiac failure

Arterial bruits
Abdominal aorta, carotids, subclavians, renals and femorals

Lung bases
Crepitations as evidence of cardiac failure

VASCULAR EXAMINATION OF LIMBS

INSPECT

Take down any dressings

Is active limb and hand / foot movement normal (motor activity)

Colour change or pigmentation — white / red / blue / black

Previous amputation of digits

Surgical scars e.g. bypass graft

Always inspect for ulceration between toes and under heels

Trophic (nutritional) changes i.e tissue loss / gangrene / ulceration
— are surrounding tissues involved (e.g. bone)
— ulcer — site, size, shape / shallow or deep / granulation tissue or slough at the base / pus or discharge

PALPATE

Skin temperature
Use back of hand; compare similar parts of both limbs

Capillary refill
Press big toe; refill should be less than 2 seconds

Peripheral pulses
Femorals, popliteals, dorsalis pedis and posterior tibials — is pulse palpable / how strong (-,+,++) / possible aneurysm

Neurological examination
In possible neuropathic ulcers, test vibration sense (tuning fork)

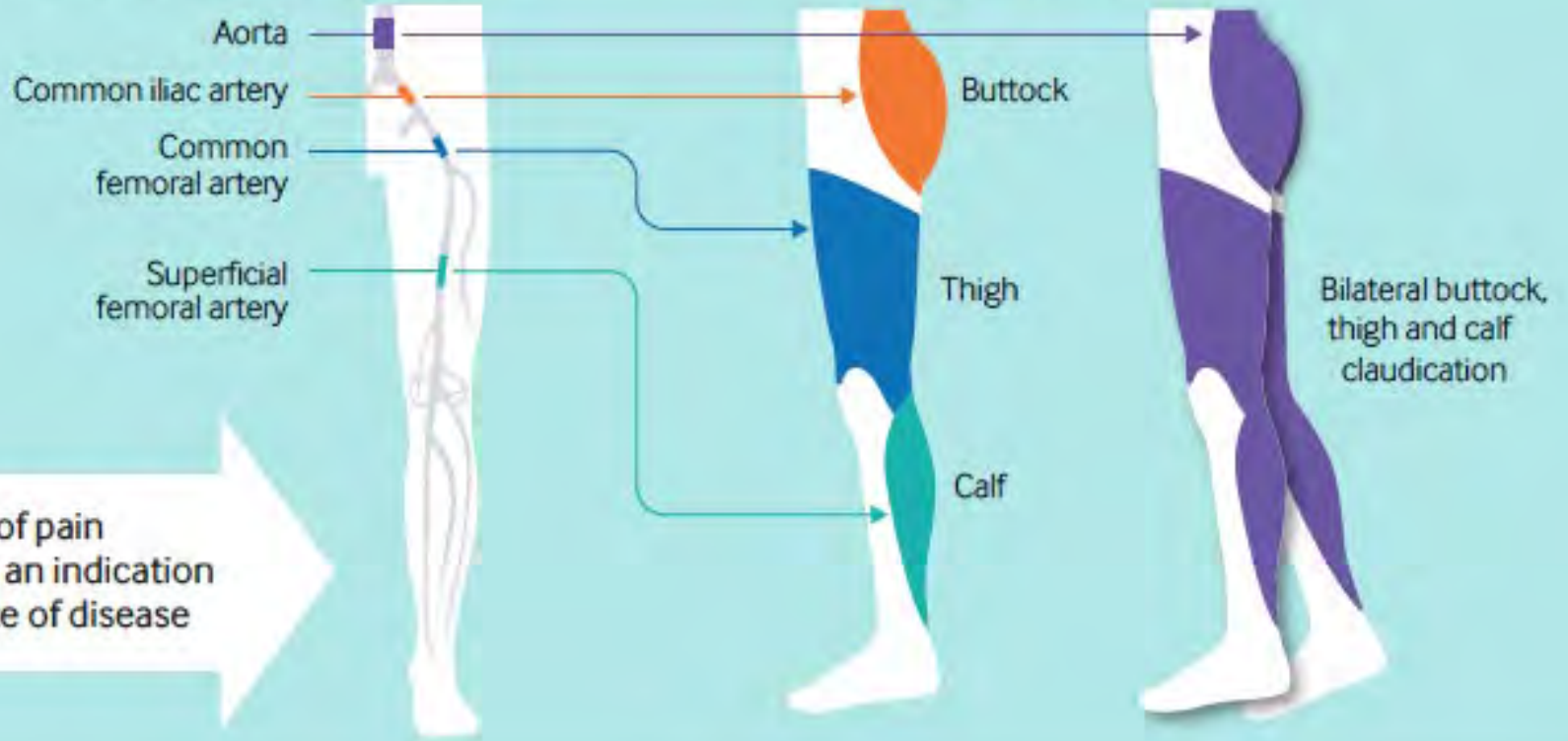
AUSCULTATE

Arterial bruits
Abdominal aorta, carotids, subclavians, renals and femorals

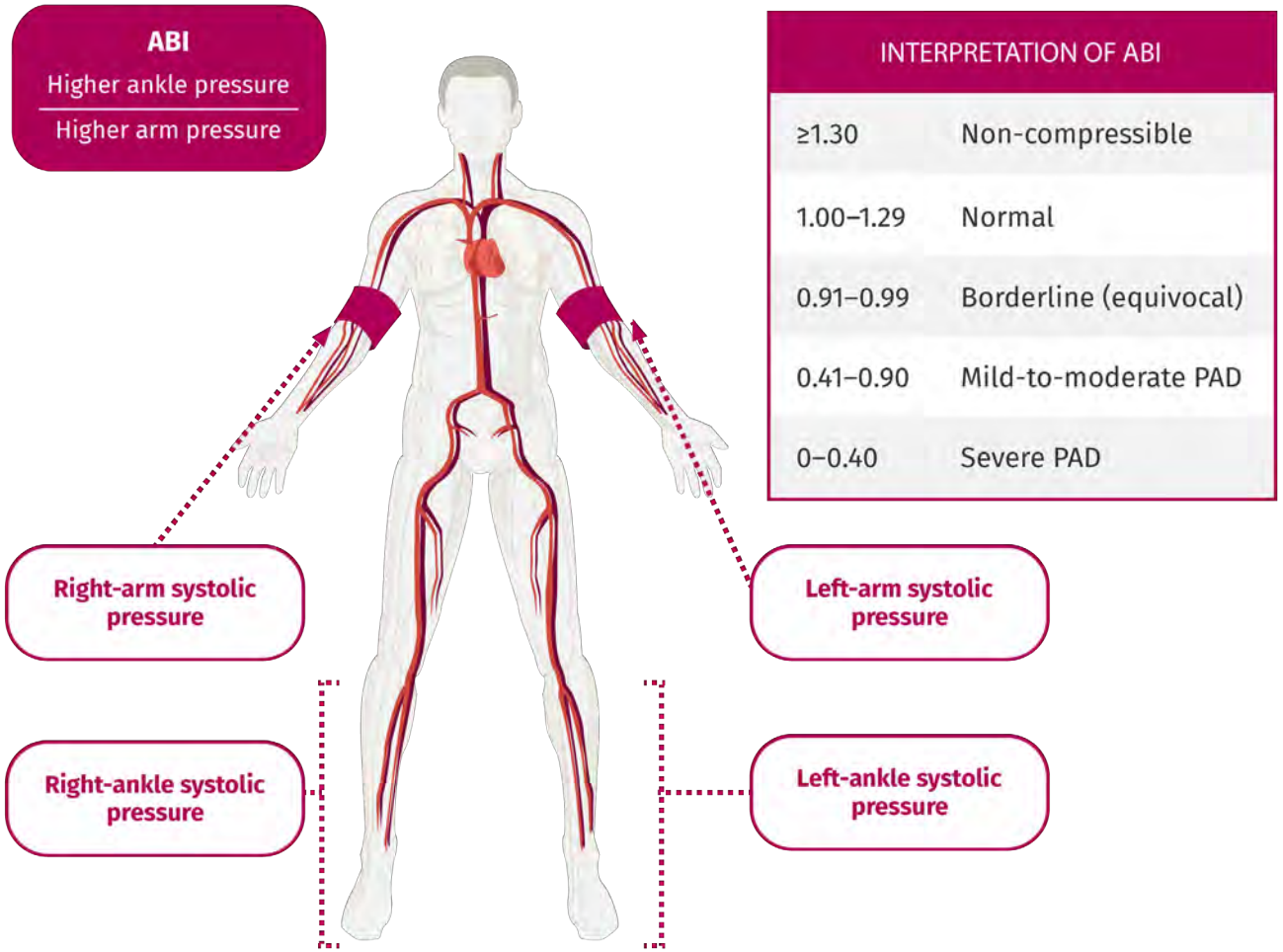
Claudication

- Aching or burning in leg muscles
- Reliably reproduced at a set distance of walking
- Relieved within minutes on rest
- Never present at rest
- Not exacerbated by position

The site of pain provides an indication of the site of disease

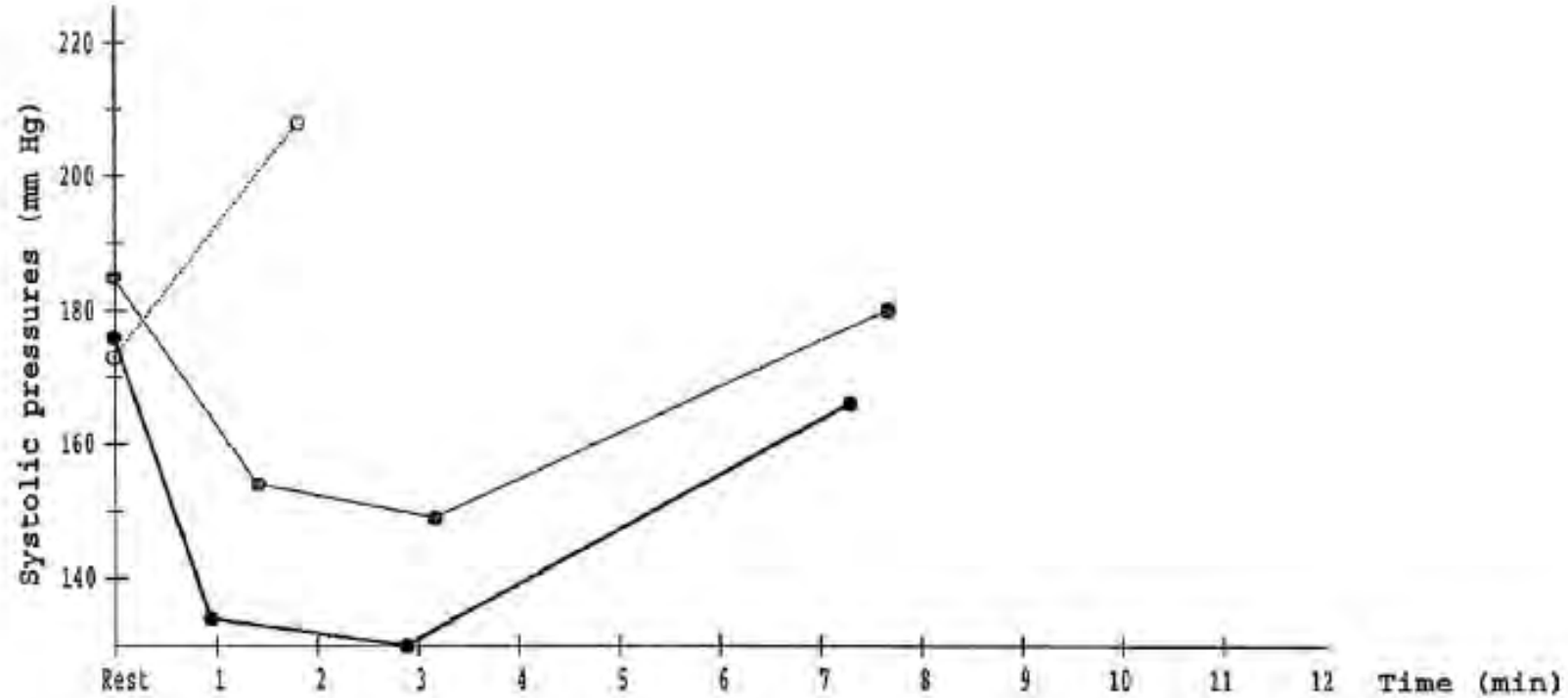


PAD can be diagnosed by measurement of resting ankle-brachial index (ABI)[1]



ABI, ankle–brachial index; PAD, peripheral artery disease

1. Hiatt WR. *N Engl J Med* 2001;344:1608



	R Ankle	Time	Index	Brach	Time	Index	Time	L Ankle
Rest	176	0:00	1.02	173	0:00	1.07	0:00	185
1st Time	134	0:57	0.64	208	1:50	0.74	1:26	154
2nd Time	130	2:54	0.62			0.72	3:11	149
3rd Time	166	7:19	0.80			0.87	7:41	180
4th Time	--	--	--			--	--	--
5th Time	--	--	--			--	--	--

(*) Vessel calcification may cause falsely elevated systolic pressures.

Fig. 1. An exercise test carried out on a treadmill at a gradient of 12° and at a rate of 5 km/h. The ankle brachial pressure index is normal at rest, but there is a reduction with exercise that is more marked on the right side than on the left. ▬, right ankle; ▬, left ankle; ••••, brachial.

Critical limb ischaemia

1 or more of:

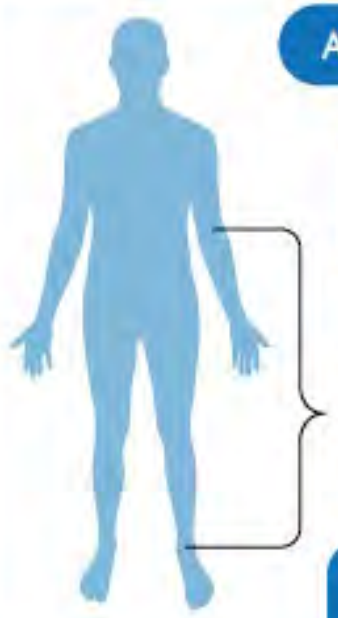
- Ulceration
- Gangrene
- Rest pain in foot for more than 2 weeks

May be resistant to opiate analgesia

Difficult to distinguish from neuropathy

Patients frequently hang their leg out of bed to try to relieve their pain

Ankle-brachial pressure index (ABPI)



ABPI of 0.9 or less is diagnostic of PAD

ABPI of 0.5 or less suggests critical limb ischaemia

ABPI is the ratio of blood pressure at the ankle to blood pressure at the arm

⚠

Incompressible (ABPI >1.2) and falsely elevated values are seen in patients with arterial calcification, notably people with diabetes and/or chronic kidney disease

Ulceration or wound + PAD (Irrespective of ABPI) → Critical limb ischaemia (Urgent referral)

Acute limb-threatening ischaemia

- Rare but important not to miss
- Classically presents with sudden onset symptoms
- Also indicated by sudden deterioration of claudication

One or more of the '6 Ps':

- P Pain at rest
- P Paraesthesia
- P Pallor
- P Paralysis
- P Pulseless
- P 'Perishingly' cold

Table 2. Differentiation of vascular and neurogenic claudication

Signs and symptoms	Vascular	Neurogenic
walking distance	• fixed	• variable
type of pain	• cramps, tightness	• dull ache, numbness
relief at cessation of activity	• immediate	• delayed
back pain	• rarely	• occasionally
pain relief	• standing	• flexion and sitting
posture provocation	• uncommon	• common
walking up hill	• pain	• no pain
bicycle riding	• pain	• no pain
pulses	• absent	• normal
trophic changes	• likely	• absent
muscle atrophy	• rarely	• occasionally

Table 14-1 Differential Diagnosis of Claudication

Condition	Location of Pain or Discomfort	Characteristic Discomfort	Onset Relative to Exercise	Effect of Rest	Effect of Body Position	Other Characteristics
ARTERIAL CONDITIONS						
Intermittent claudication of the calf	Calf muscles	Cramping pain	After same degree of exercise	Quickly relieved	None	Reproducible
Intermittent claudication of the hip, thigh, buttock	Hip, thigh, buttocks	Aching discomfort, weakness	After same degree of exercise	Quickly relieved	None	Reproducible
Popliteal artery entrapment	Calf muscles	Cramping pain	After exercise	Quickly relieved	Aggravated by extension of the foot	Typically seen in younger patients
VENOUS CONDITIONS						
Venous claudication	Entire leg, but usually worse in the thigh and groin	Tight, bursting pain	After walking	Subsides slowly	Relief speeded by elevation	History of iliofemoral deep venous thrombosis, signs of venous congestion, edema
Venous compartment syndrome	Calf muscles	Tight, bursting pain	After much exercise (e.g., jogging)	Subsides very slowly	Relief speeded by elevation	Typically, heavily muscled athletes
NEUROLOGIC CONDITIONS						
Nerve root compression (e.g., herniated disk)	Radiates down leg, usually posteriorly	Sharp lancinating pain	Soon, if not immediately after onset	Not quickly relieved (also often present at rest)	Relief may be aided by adjustment of back position	History of back problems
Neurospinal root compression	Hip, thigh, buttocks (follows dermatome)	Weakness more than pain	After walking or standing for same time	Relieved by stopping only if position changed	Relieved by lumbar spine flexion (sitting or stooping forward)	Common history of back problems; provoked by increased intra-abdominal pressure

The reliability of differentiating neurogenic claudication from vascular claudication based on symptomatic presentation

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Background: Intermittent claudication can be neurogenic or vascular. Physicians use a profile based on symptom attributes to differentiate the 2 types of claudication, and this guides their investigations for diagnosis of the underlying pathology. We evaluated the validity of these symptom attributes in differentiating neurogenic from vascular claudication.

Methods: Patients with a diagnosis of lumbar spinal stenosis (LSS) or peripheral vascular disease (PVD) who reported claudication answered 14 questions characterizing their symptoms. We determined the sensitivity, specificity and positive and negative likelihood ratios (PLR and NLR) for neurogenic and vascular claudication for each symptom attribute.

Results: We studied 53 patients. The most sensitive symptom attribute to rule out LSS was the absence of "triggering of pain with standing alone" (sensitivity 0.97, NLR 0.050). Pain alleviators and symptom location data showed a weak clinical significance for LSS and PVD. Constellation of symptoms yielded the strongest associations: patients with a positive shopping cart sign whose symptoms were located above the knees, triggered with standing alone and relieved with sitting had a strong likelihood of neurogenic claudication (PLR 13). Patients with symptoms in the calf that were relieved with standing alone had a strong likelihood of vascular claudication (PLR 20.0).

Conclusion: The classic symptom attributes used to differentiate neurogenic from vascular claudication are at best weakly valid independently. However, certain constellation of symptoms are much more indicative of etiology. These results can guide general practitioners in their evaluation of and investigation for claudication.

Contexte : La claudication intermittente peut avoir une étiologie neurogène ou vasculaire. Les médecins utilisent un profil fondé sur les particularités des symptômes pour distinguer l'une de l'autre et ceci oriente leur choix des méthodes de diagnostic de la pathologie sous-jacente. Nous avons évalué la validité de ces particularités des symptômes utilisées pour distinguer la claudication d'origine neurogène de la claudication d'origine vasculaire.

Méthodes : Des patients atteints d'une sténose spinale lombaire (SSL) ou d'une maladie vasculaire périphérique (MVP) avérées qui se plaignaient de claudication ont répondu à 14 questions afin de caractériser leurs symptômes. Nous avons déterminé la sensibilité, la spécificité et les rapports de probabilité positifs et négatifs (RPP et RPN) à l'égard de la claudication neurogène ou vasculaire pour chacune des particularités des symptômes.

Résultats : Notre étude a regroupé 53 patients. La particularité des symptômes dotée de la sensibilité la plus élevée pour ce qui est d'écarter le diagnostic de SSL a été l'absence de « déclenchement de la douleur à la simple station debout » (sensibilité 0,97; RPN 0,050). Les données sur ce qui soulageait la douleur et sur la localisation des symptômes ont eu une faible portée clinique en ce qui a trait à la SSL et à la MVP. La présence d'une constellation de symptômes a donné lieu aux associations les plus solides : les patients qui manifestaient un signe du « panier d'épicerie » positif et dont les symptômes étaient localisés au-dessus du genou, déclenchés par la station debout seule et soulagés en position assise présentaient une forte probabilité de claudication d'origine neurogène (RPP 13). Chez les patients dont les symptômes étaient localisés au mollet et qui étaient soulagés par la station debout, on notait une forte probabilité de claudication d'origine vasculaire (RPP 20,0).

Conclusion : Considérés individuellement, les attributs classiques des symptômes utilisés pour distinguer la claudication d'origine neurogène de la claudication d'origine vasculaire sont au mieux faiblement valides. Toutefois, certaines constellations de symptômes éclairent bien davantage l'étiologie. Ces résultats peuvent guider l'omnipraticien dans son examen et dans son diagnostic de la claudication.

Table 1. Statistical calculations used for analysis[27]

Term	Definition	Formula
Sensitivity	Likelihood that the diagnostic test will indicate the presence of disease when the disease is actually present	$T+ \div (T+ + F-)$
Specificity	Likelihood that the diagnostic disease will indicate the absence of disease when the disease is actually absent	$T- \div (T- + F+)$
Positive likelihood ratio	Indicates how much more likely it is to get a positive test in a person with than without the disease	$\frac{\text{Sensitivity}}{(1 - \text{Specificity})}$
Negative likelihood ratio	Indicates how much more likely it is to get a negative test in a person without than with the disease	$\frac{(1 - \text{Sensitivity})}{\text{Specificity}}$

F+ = false positive; F– = false negative; T+ = true positive; T– = true negative.

Table 2. Interpretation of likelihood ratio values for clinical application[27]

Likelihood ratio	Interpretation
> 10	Strong evidence to rule in the disease
5–10	Moderate evidence to rule in the disease
2–5	Weak evidence to rule in the disease
0.5–2	No significant change in the likelihood of the disease
0.2–0.5	Weak evidence to rule out the disease
0.1–0.2	Moderate evidence to rule out the disease
< 0.1	Strong evidence to rule out the disease

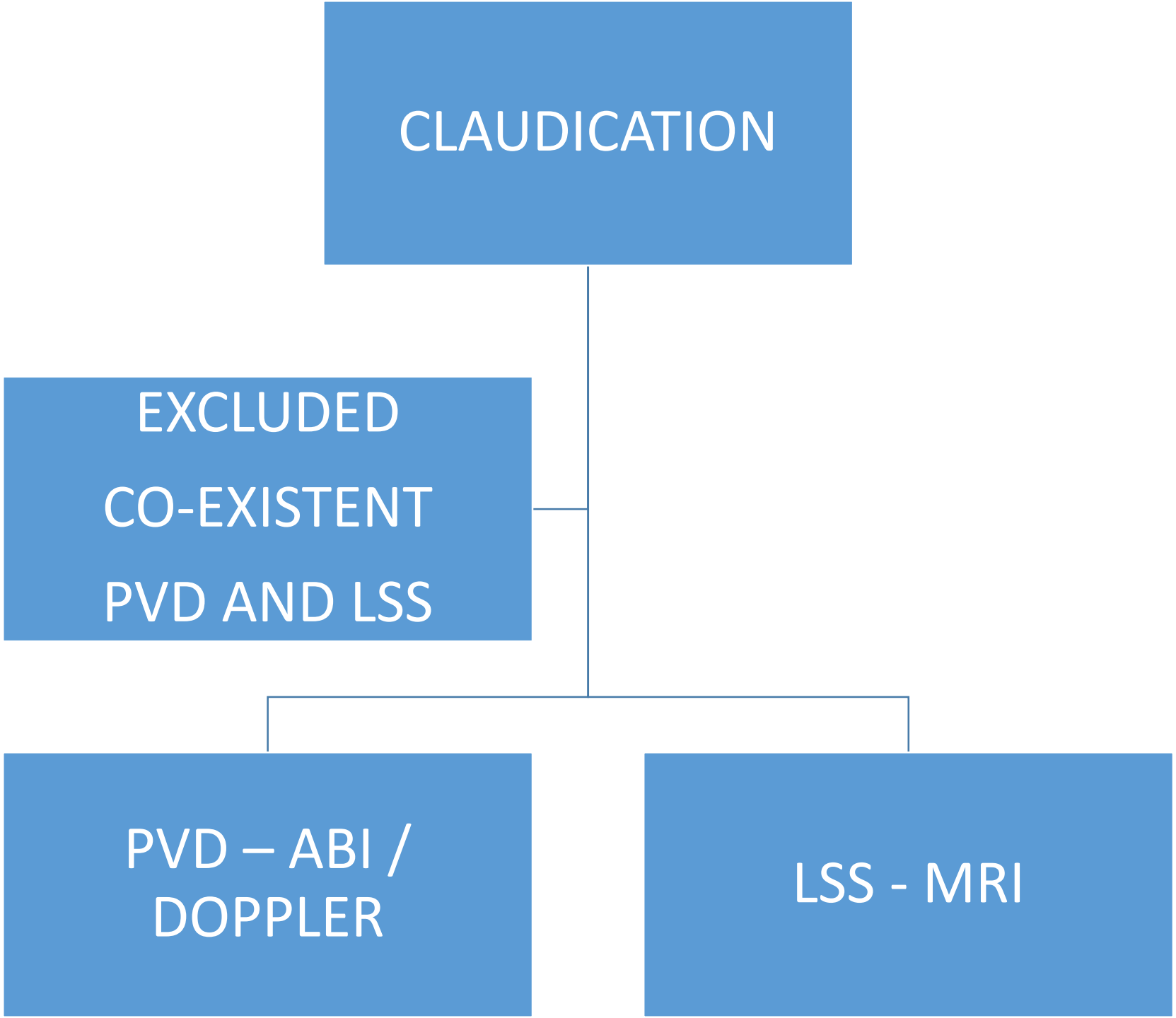

CLAUDICATION
EXCLUDED
CO-EXISTENT
PVD AND LSS
PVD – ABI / DOPPLER
LSS - MRI

Table 3. Symptom attributes for neurogenic intermittent claudication

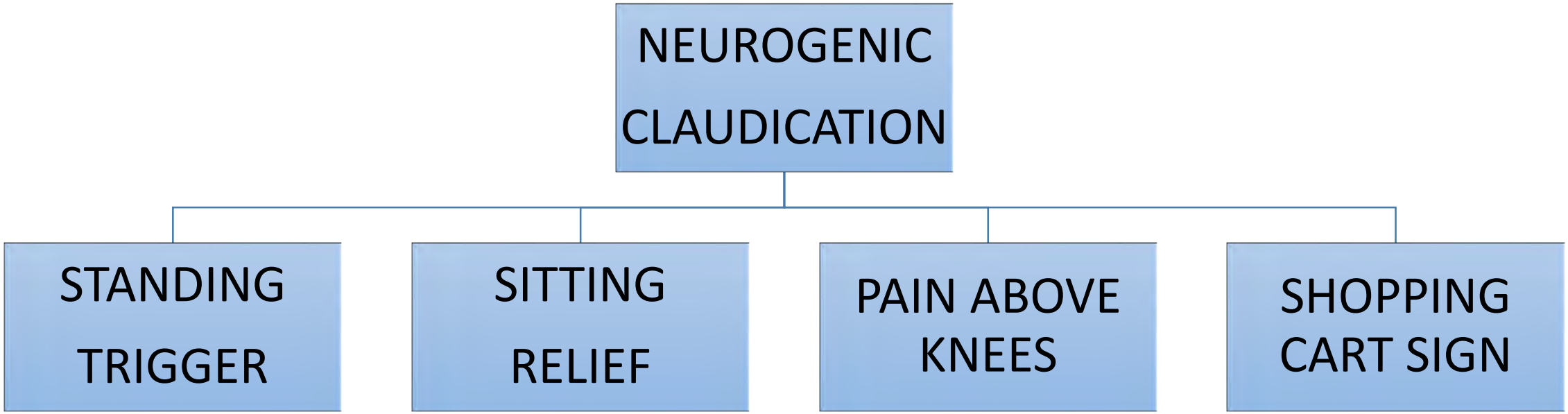
Attribute*	Measure (95% CI)			
	Sensitivity	Specificity	PLR	NLR
Single symptom attributes				
Trigger				
Standing (1)	0.97 (0.81–1.0)	0.70 (0.47–0.86)	3.2 (1.7–5.9)†	0.04 (0.0067–0.34)†
Walking (2)	0.90 (0.72–0.97)	0.04 (0.0023–0.24)	0.94 (0.81–1.1)	2.30 (0.12–43)
Alleviator				
Sitting (3a)	0.83 (0.65–0.94)	0.78 (0.56–0.92)	3.80 (1.7–8.5)†	0.21 (0.083–0.44)†
Posture				
Shopping cart sign (4)	0.80 (0.61–0.92)	0.52 (0.31–0.73)	1.70 (1.1–2.7)†	0.38 (0.17–0.85)†
Walking uphill (7)	0.23 (0.11–0.43)	0.78 (0.55–0.92)	1.07 (0.39–2.9)	0.98 (0.79–1.2)
Nature				
Numbness (8)	0.75 (0.55–0.89)	0.41 (0.21–0.63)	1.30 (0.84–1.9)	0.61 (0.28–1.3)
Cramping (9)	0.53 (0.35–0.71)	0.35 (0.17–0.57)	0.82 (0.52–1.3)	1.30 (0.78–2.3)
Burning pain (10)	0.62 (0.42–0.79)	0.52 (0.31–0.73)	1.30 (0.78–2.2)	0.73 (0.42–1.3)
Weakness (11)	0.43 (0.25–0.63)	0.59 (0.37–0.79)	1.00 (0.54–2.0)	0.97 (0.66–1.4)
Location				
Above the knees (5)	0.80 (0.61–0.92)	0.65 (0.43–0.83)	2.30 (1.3–4.1)†	0.31 (0.14–0.66)†
Time for relief				
> 10 min	0.30 (0.15–0.50)	0.78 (0.56–0.92)	1.40 (0.53–3.6)	0.89 (0.69–1.1)
Constellation of symptom attributes				
Triggered with standing (1), alleviated with sitting (3a)	0.80 (0.61–0.92)	0.87 (0.65–0.97)	6.10 (2.1–18)†	0.23 (0.11–0.48)†
Triggered with standing (1), alleviated with sitting (3a), located above the knees (5)	0.67 (0.47–0.82)	0.91 (0.70–0.98)	7.70 (2.0–30)†	0.37 (0.22–0.61)†
Triggered with standing (1), alleviated with sitting (3a), located above the knees (5), positive shopping cart sign (4)	0.57 (0.38–0.74)	0.96 (0.76–1.0)	13.00 (1.9–91)†	0.45 (0.30–0.68)†

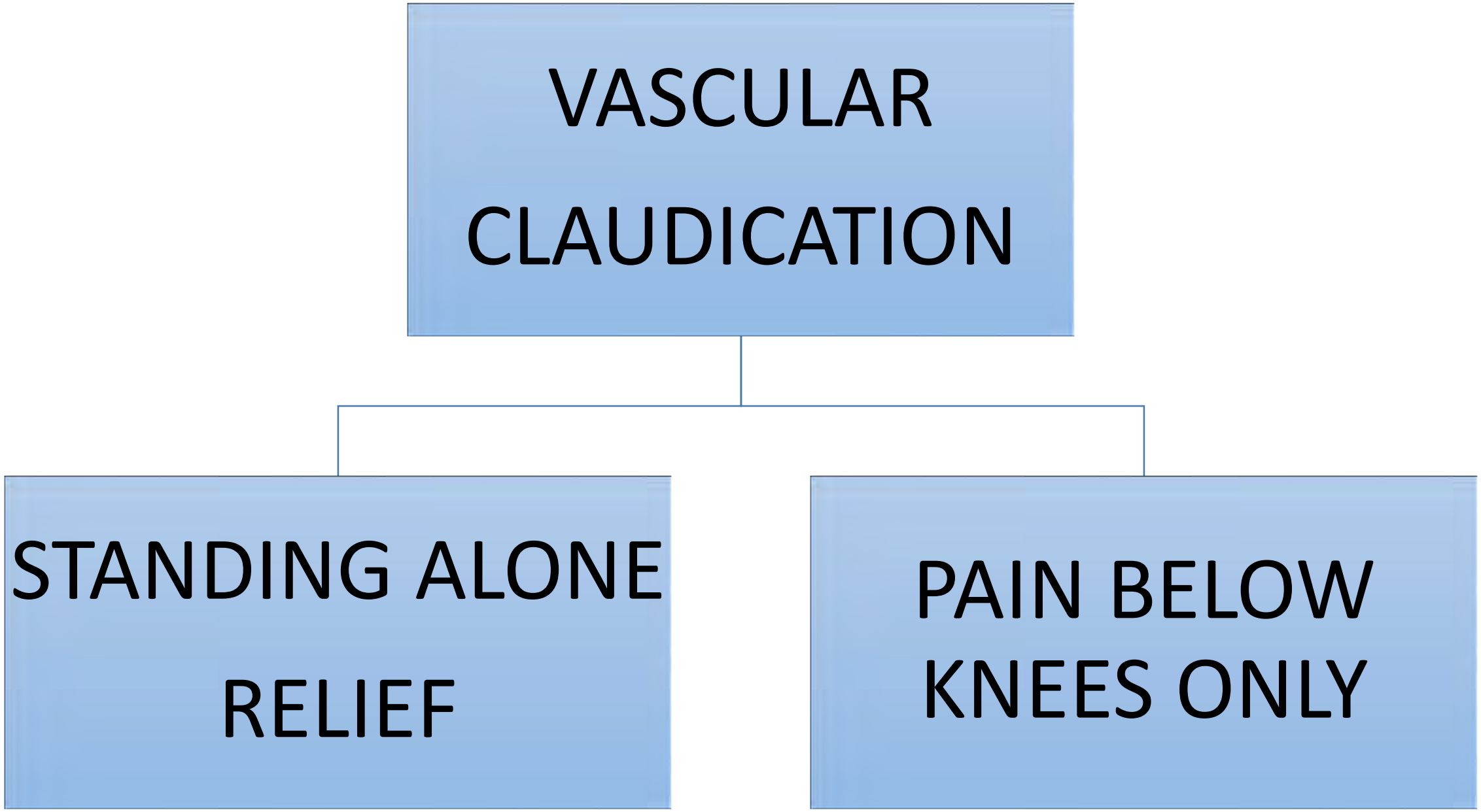
CI = confidence interval; NLR = negative likelihood ratio; PLR = positive likelihood ratio.
*Numbers in brackets represent the corresponding question number in the questionnaire (see the Appendix, available at cma.ca/cjs).
†Numbers whose values represent clinical significance.

Table 4. Symptom attributes for vascular intermittent claudication

Attribute*	Measure (95% CI)			
	Sensitivity	Specificity	PLR	NLR
Single symptom attribute				
Trigger				
Walking (2)	0.96 (0.76–1.00)	0.10 (0.03–0.28)	1.10 (0.92–1.2)	0.43 (0.04–5.3)
Symptom onset				
Predictable (2a)	0.87 (0.65–0.97)	0.37 (0.21–0.56)	1.37 (1.0–1.9)	0.36 (0.11–1.1)
Alleviator				
Standing (3)	0.78 (0.56–0.92)	0.90 (0.72–0.97)	7.80 (2.6–23)†	0.24 (0.11–0.53)†
Nature				
Numbness (8)	0.59 (0.37–0.79)	0.25 (0.11–0.45)	0.79 (0.52–12)	1.60 (0.80–3.3)
Cramping (9)	0.65 (0.43–0.83)	0.47 (0.29–0.65)	1.20 (0.78–1.9)	0.75 (0.40–1.9)
Burning pain (10)	0.47 (0.27–0.69)	0.38 (0.21–0.58)	0.77 (0.46–1.3)	1.37 (0.83–2.3)
Weakness (11)	0.41 (0.21–0.63)	0.57 (0.37–0.75)	0.95 (0.49–1.8)	1.00 (0.69–1.5)
Location				
Calves (6)	0.78 (0.56–0.92)	0.73 (0.54–0.87)	2.90 (1.6–5.5)†	0.30 (0.13–0.66)†
Time for relief				
1–2 min (11a)	0.57 (0.35–0.76)	0.57 (0.38–0.74)	1.30 (0.76–2.2)	0.77 (0.46–1.3)
Constellation of symptom attributes				
Alleviated with Standing (3), located in the calves (6)	0.65 (0.43–0.83)	0.97 (0.81–1.0)	20.00 (2.8–140)†	0.36 (0.21–0.63)†

CI = confidence interval; NLR = negative likelihood ratio; PLR = positive likelihood ratio.
*Numbers in brackets represent the corresponding question number in the questionnaire (see the Appendix, available at cma.ca/cjs).
†Numbers whose value represent clinical significance.


NEUROGENIC CLAUDICATION
STANDING TRIGGER
SITTING RELIEF
PAIN ABOVE KNEES
SHOPPING CART SIGN


VASCULAR CLAUDICATION
STANDING ALONE RELIEF
PAIN BELOW KNEES ONLY


RIGHT THIGH / GROIN PAIN
RIGHT HIP OA

Acta Orthop. Belg., 2005, 71, 540-547

Do pain referral patterns determine patient outcome after total hip arthroplasty ?

John STREET, Brian LENEHAN, Robert FLAVIN , Eilish BEALE , Padraig MURRAY

From Cappagh National Orthopaedic Hospital, Dublin, Ireland

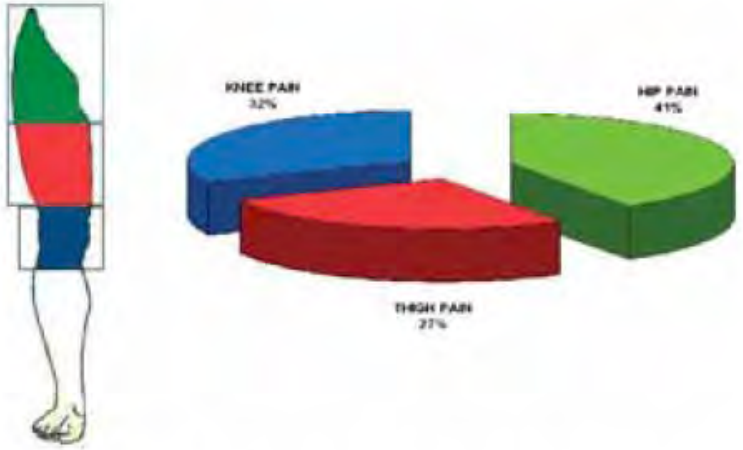


Fig. 1. — Frequency of pain referral distribution

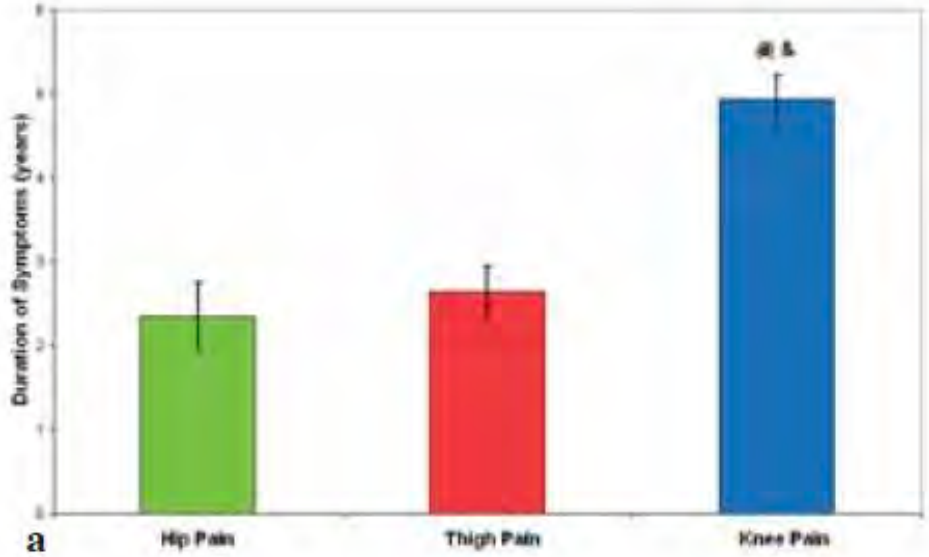


Fig. 2a. — Duration of Symptoms

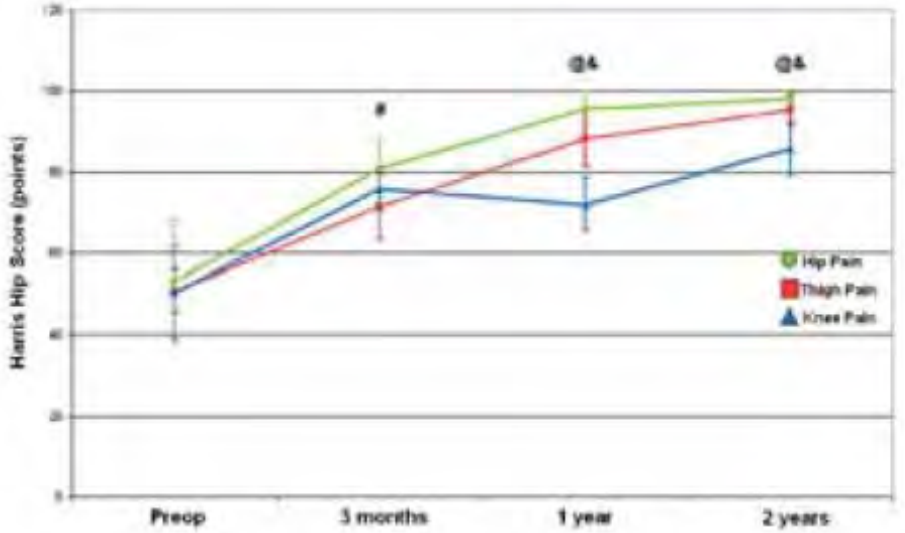


Fig. 3. — Post-op changes in Harris Hip Score

Similarities between symptomatic LSS and Hip OA

- The prevalence of discernible hip pathology in patients who underwent spinal surgery was 32.5%.(Lee, 2012)

- In a study of patients presenting to a spine clinic, 12.5% of patient had a diagnosis referable to a hip joint.(Sembrano, 2009)

Similarities between symptomatic LSS and Hip OA

- Thigh and lower leg pain is frequently associated with low back pain.
  - In a study of 93 adults with back pain, the symptom of pain radiating into the buttocks or leg had a sensitivity of 88% but a specificity of only 34% for lumbar spinal stenosis.(Katz,1995)

Similarities between symptomatic LSS and Hip OA

- Hip OA and LSS are both age-related, degenerative musculoskeletal disorders
- Both increase in prevalence within the same aging population
  - must be considered when evaluating patients with pelvic and leg pain associated with walking. (NIH Consensus, 1994; Weinstein,1983)
- Most people have only one of these conditions
- Both can occur concurrently
  - Radiographic hip OA seen in as many as 1/3 of patients with spinal stenosis. (Lee, 2012, Moreland, 1990: Croft, 1990)
  - LSS is present in up to ¼ of patients with hip OA. (McNamara, 1993; Sambrano, 2009; Van Zyl, 2010)

ELSEVIER

CrossMark

THE SPINE JOURNAL

The Spine Journal 17 (2017) 1464–1471

Clinical Study

Clinical classification criteria for radicular pain caused by lumbar disc herniation: the radicular pain caused by disc herniation (RAPIDH) criteria

Stéphane Genevay, MD[a,*], Delphine S. Courvoisier, PhD[a,b], Kika Konstantinou, PhD[c], Francisco M. Kovacs, MD[d], Marc Marty, MD[e], James Rainville, MD[f], Michael Norberg, MD[g], Jean-François Kaux, MD[h], Thomas D. Cha, MD[i], Jeffrey N. Katz, MD[j], Steven J. Atlas, MD[k]

Table 2
Generalized estimating equation model with logit link and exchangeable correlation matrix to predict radicular pain caused by lumbar disc herniation

	Estimate	OR	p	Score
Intercept	–4.407	0.012	<.001	-
Monoradicular: not monoradicular	1 (reference)	1 (reference)		
Monoradicular: L3 or L4	2.983	19.743	<.001	3.0
Monoradicular: L5 or S1	2.903	18.221	<.001	2.9
Decreased ankle reflex: absence of	1 (reference)	1 (reference)		
Decreased ankle reflex: unilateral	1.623	5.069	.02	1.6
Decreased ankle reflex: bilateral	-0.945	0.389	.15	–0.9
Femoral stretch test or SLR≤60°	1.878	6.540	<.001	1.9
Muscle weakness: absence of	1 (reference)	1 (reference)		
Muscle weakness: unilateral	1.435	4.200	.02	1.4
Muscle weakness: bilateral	–0.767	0.465	.40	–0.8
Patient-reported unilateral leg pain	1.175	3.237	.03	1.2

SLR, straight leg raise; OR, odds ratio.
SLR≤60: SLR is positive if a typical leg pain is produced between 0° and 60°.

Table 4
Results of the final (S6) generalized estimating equation model to predict the diagnosis of radiculopathy caused by lumbar disc herniation

	Estimate	OR	p	Score
Intercept	–4.69	0.01	<.001	—
Monoradicular leg pain distribution	2.88	17.89	<.001	2.9
Unilateral decreased ankle reflex	1.70	5.45	.01	1.7
SLR≤60° (L5 and S1) or positive femoral stretch test (L3 and L4)	1.83	6.26	<.001	1.8
Unilateral muscle weakness (ref. none or bilateral)	1.44	4.24	.02	1.4
Unilateral patient-reported pain in the leg	1.42	4.14	.003	1.4

SLR, straight leg raise; ref., reference; OR, odds ratio.
SLR≤60: SLR is positive if a typical leg pain is produced between 0° and 60°.

Table 5
RAPIDH score (simplified weighted score)

Item	Points
Monoradicular leg pain	6
SLR≤60° or positive femoral stretch test	4
Unilateral ankle reflex decrease	4
Unilateral muscle weakness	3
Unilateral patient-reported pain in legs	3

SLR, straight leg raise; RAPIDH, radicular pain caused by disc herniation.

SLR≤60: SLR is positive if a typical leg pain is produced between 0° and 60°.

The patient is classified as having RAPIDH if the total score is 11 (range 0–20) or more (specificity 90.4%, sensitivity 70.6%).

ANOTHER PREDICITVE MODEL

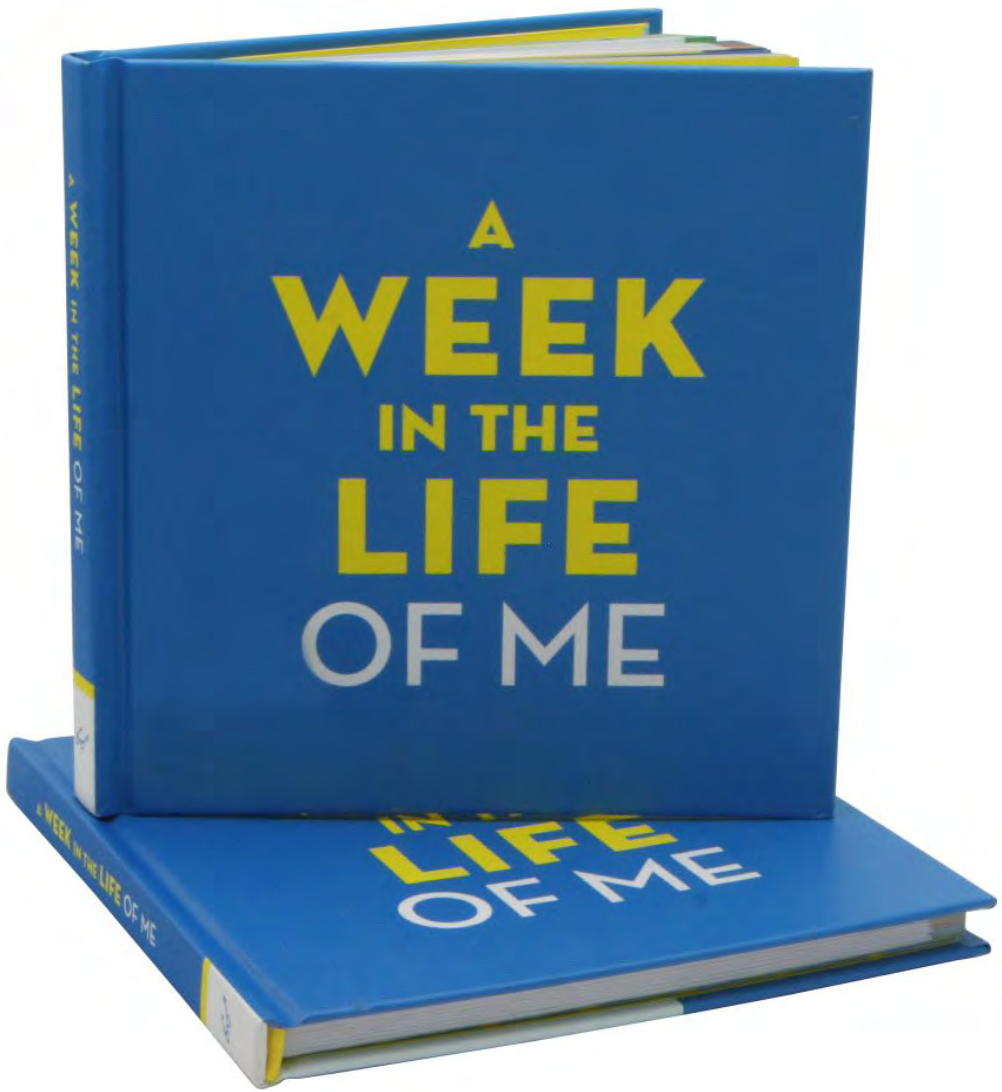
Table 4. Scoring tool based on model (i) for clinical assessment items and corresponding predicted probability of sciatica.

Variable in the model	Does the patient:	Score
Subjective sensory changes	Report any pins and needles or numbness in the involved lower limb	1
Below knee pain	Report pain below the knee	2
Leg pain worse than back pain	Report that their leg pain is worse than their back pain	2
Neural Tension tests	Have a positive straight leg raise test and/or femoral nerve test and/or slump test	3
Neurological deficit	Have any myotome/ reflex or sensory deficit in the involved lower limb	2
	Sum Score	....

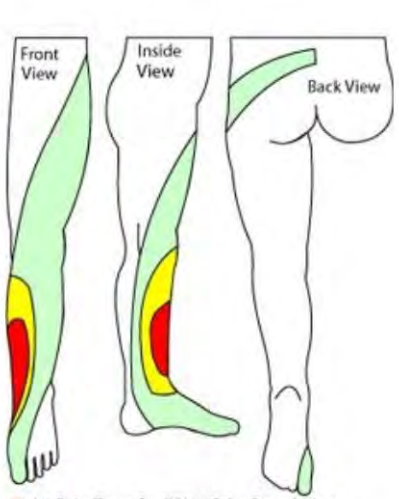
Sum Score	0	1	2	3	4	5	6	7	8	9	10
N	36	19	19	20	21	47	29	41	61	25	76
Observed Sciatica (%)	3	11	11	50	67	85	86	100	97	100	100
Mean predicted probability of Sciatica (%)	4	9	19	42	63	83	93	96	99	100	100

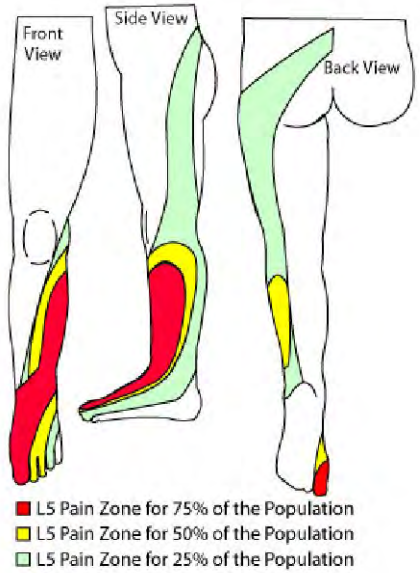
https://doi.org/10.1371/journal.pone.0191852.t004

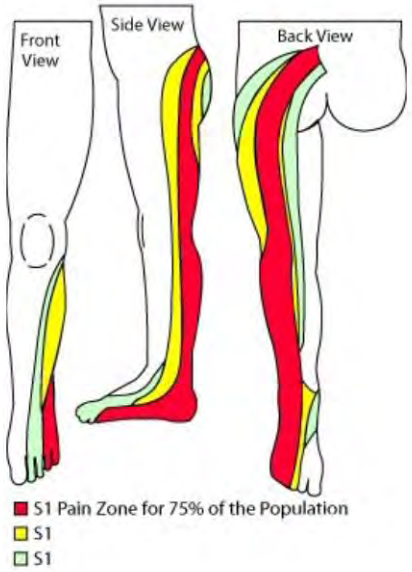

Don't put all your eggs in one basket
Do not put all your resources in one possibility.
UCLnet.com

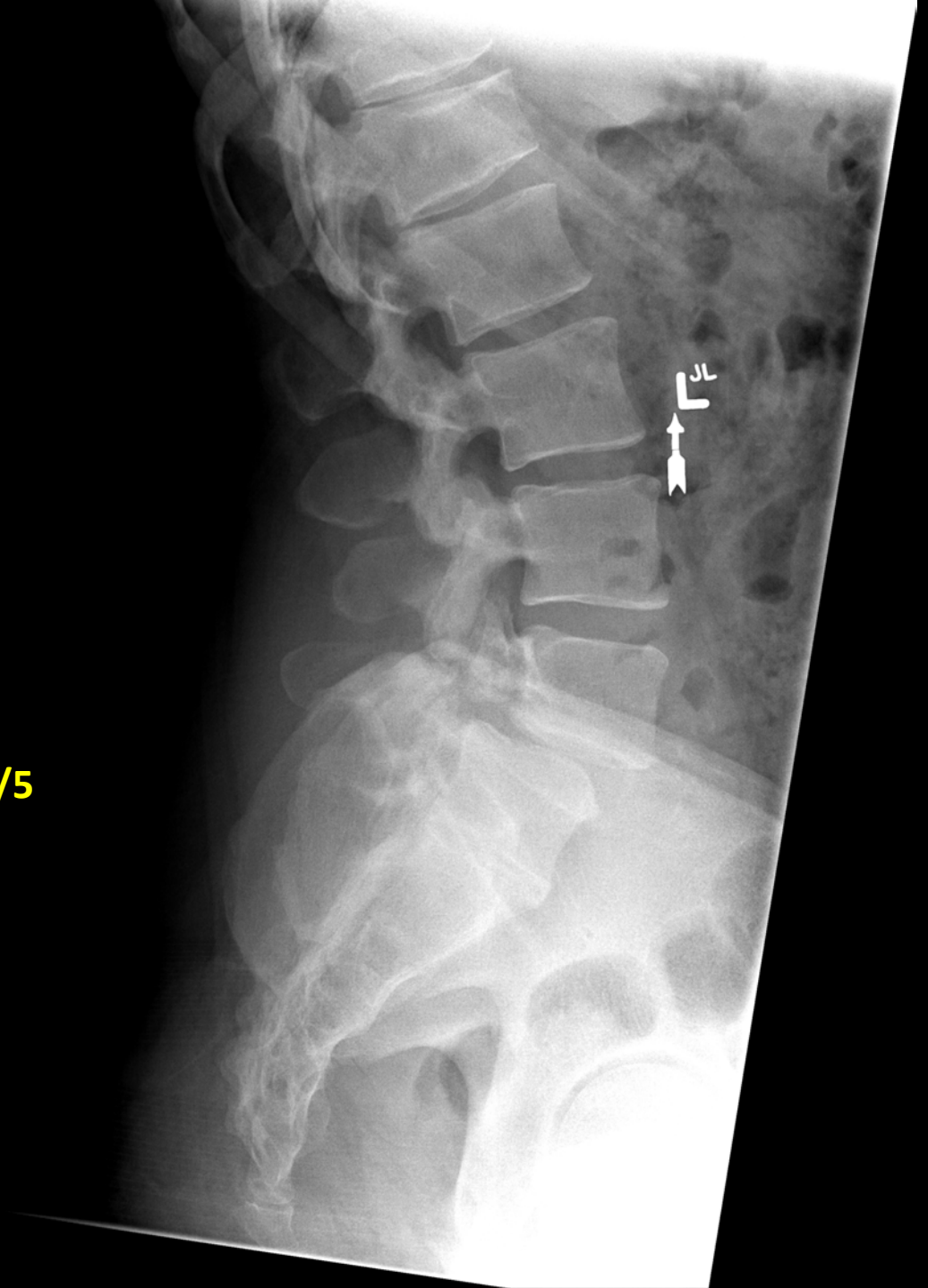

A
WEEK
IN THE
LIFE
OF ME

LEFT S1 RADICULOPATHY
LEFT L5S1 DISC HERNIATION


Front View
Inside View
Back View
L4 Pain Zone for 75% of the Population
L4 Pain Zone for 50% of the Population
L4 Pain Zone for 25% of the Population


Front View
Side View
Back View
L5 Pain Zone for 75% of the Population
L5 Pain Zone for 50% of the Population
L5 Pain Zone for 25% of the Population

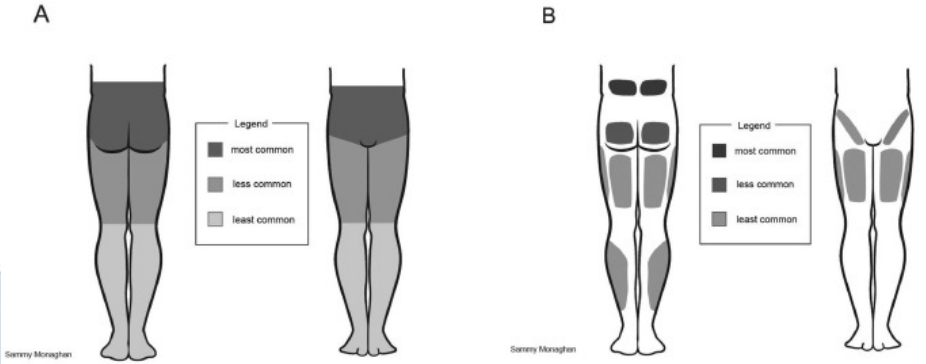

Front View
Side View
Back View
S1 Pain Zone for 75% of the Population
S1
S1

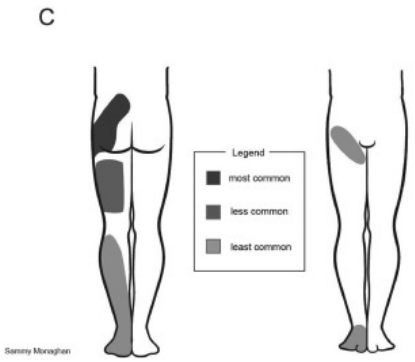


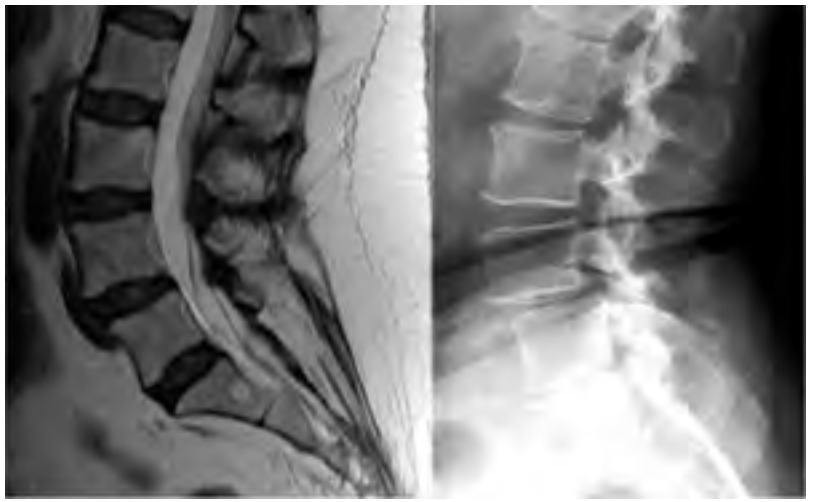
RIGHT L5 RADICULOPATHY
DEGENERATIVE SPONDYLOLISTHESIS L4/5

Table 1: General principles of degenerative spondylolisthesis.

General principles
• Displacement of 1 vertebra over subjacent vertebra • Associated with degenerative changes • Most common in people older than 50 years old • Female-to-male ratio of 5:1 • The most affected segment is L4-L5 • Symptoms: neurogenic claudication, lumbar pain, with or without radicular pain • Conservative treatment is the first-line therapy • Evaluation include panoramic radiographs, magnetic resonance imaging and electromyography







Lower Limb

Wash Hands	
Introduce	
Patients Name	
Explain Procedure	
Consent	
Expose Legs to underwear	
Position Upright	
Inspect	
Patient General Appearance	
Muscle Wasting	
Fasciculation	
Asymmetry	
Scars	
Gait	
Deformities	
Tone	
Shake leg at knee	
Clonus	
Power	
Lift leg to touch hand	
Resist pushing down	
Lower leg	
Resist pushing up	
Flex Knee	
Pull Heel to Bottom	
Kick Away	
Cock back foot	
Plantarflex	
Cock Foot Down	
Dorsiflex	
Reflexes	
Knee (L4)	
Heel (S1 S2)	
Plantar (L5-S2)	
Sensation	
Cotton wool on arm	
Side to side, each dermatome	
Superficial/deep pain	
Temperature	
Vibration 128 Hz (Fig 1)	
Two point discrimination • Using a compass or similar	
Sensory Inattention • Touch one foot or both feet with patients eyes closed and ask pt which was touched	
Proprioception • Hold big toe at sides and move up and down	
Coordination	
Heel to shin	

Close	
Thank Patient	
Cover Patient	
Wash Hands	

Overall			
U	B	S	M

Figure 1

What would indicate an upper motor neuron problem?
Hyperreflexia
Upgoing plantar
Increased Tone
Clonus
General Muscle Weakness

What would indicate a lower motor neuron problem?
Hyporeflexia
Specific muscle group weakness
Hypotonia

NORMAL

RIGHT L5 RADICULOPATHY
ISTHMIC SPONDYLOLISTHESIS L5S1

PHALEN-DIXON SIGN

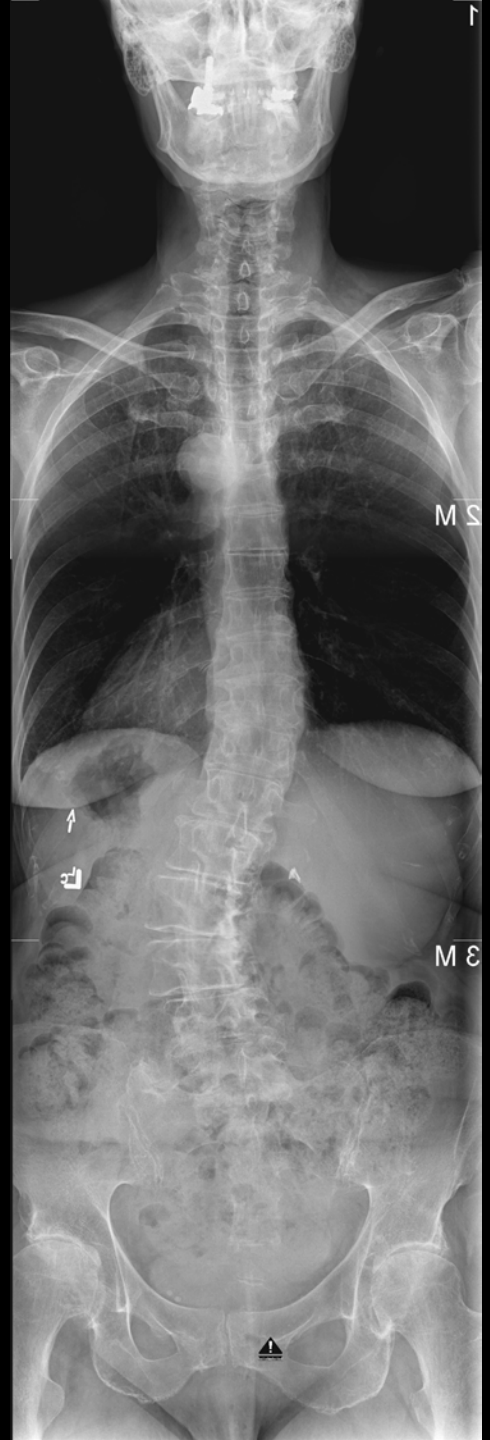
- sciatic crisis typically seen in high grade adolescent spondylolisthesis
- sign includes
  - sciatic pain
  - vertical sacrum and pelvis
  - lumbosacral kyphosis
  - tight hamstrings
  - hyperlordotic lumbar spine
  - waddling gait

Walking on toes S1

NORMAL

Walking on heels L5

WEAKNESS



LEFT L5 RADICULOPATHY
DEGENERATIVE SCOLIOSIS

NORMAL

Lower Limb

Wash Hands	
Introduce	
Patients Name	
Explain Procedure	
Consent	
Expose Legs to underwear	
Position Upright	
Inspect	
Patient General Appearance	
Muscle Wasting	
Fasciculation	
Asymmetry	
Scars	
Gait	
Deformities	
Tone	
Shake leg at knee	
Clonus	
Power	
Lift leg to touch hand	
Resist pushing down	
Lower leg	
Resist pushing up	
Flex Knee	
Pull Heel to Bottom	
Kick Away	
Cock back foot	
Plantarflex	
Cock Foot Down	
Dorsiflex	
Reflexes	
Knee (L4)	
Heel (S1 S2)	
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Cotton wool on arm	
Side to side, each dermatome	
Superficial/deep pain	
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Coordination	
Heel to shin	

Close	
Thank Patient	
Cover Patient	
Wash Hands	

Overall			
U	B	S	M

Figure 1

What would indicate an upper motor neuron problem?
Hyperreflexia
Upgoing plantar
Increased Tone
Clonus
General Muscle Weakness

What would indicate a lower motor neuron problem?
Hyporeflexia
Specific muscle group weakness
Hypotonia

Lower Extremity

Special Tests

- *Gluteus medius tendinopathy*
- *Superior gluteal nerve palsy*

Trendelenburg Test

- **Pt Position** | Standing, initially with bilateral LE support

- **Description** | Pt is instructed to switch from double leg support to single leg support.
  - *I am defining the ipsilateral LE as the weight-bearing LE.*
  - PT monitors for the following:
    - Contralateral pelvic drop.

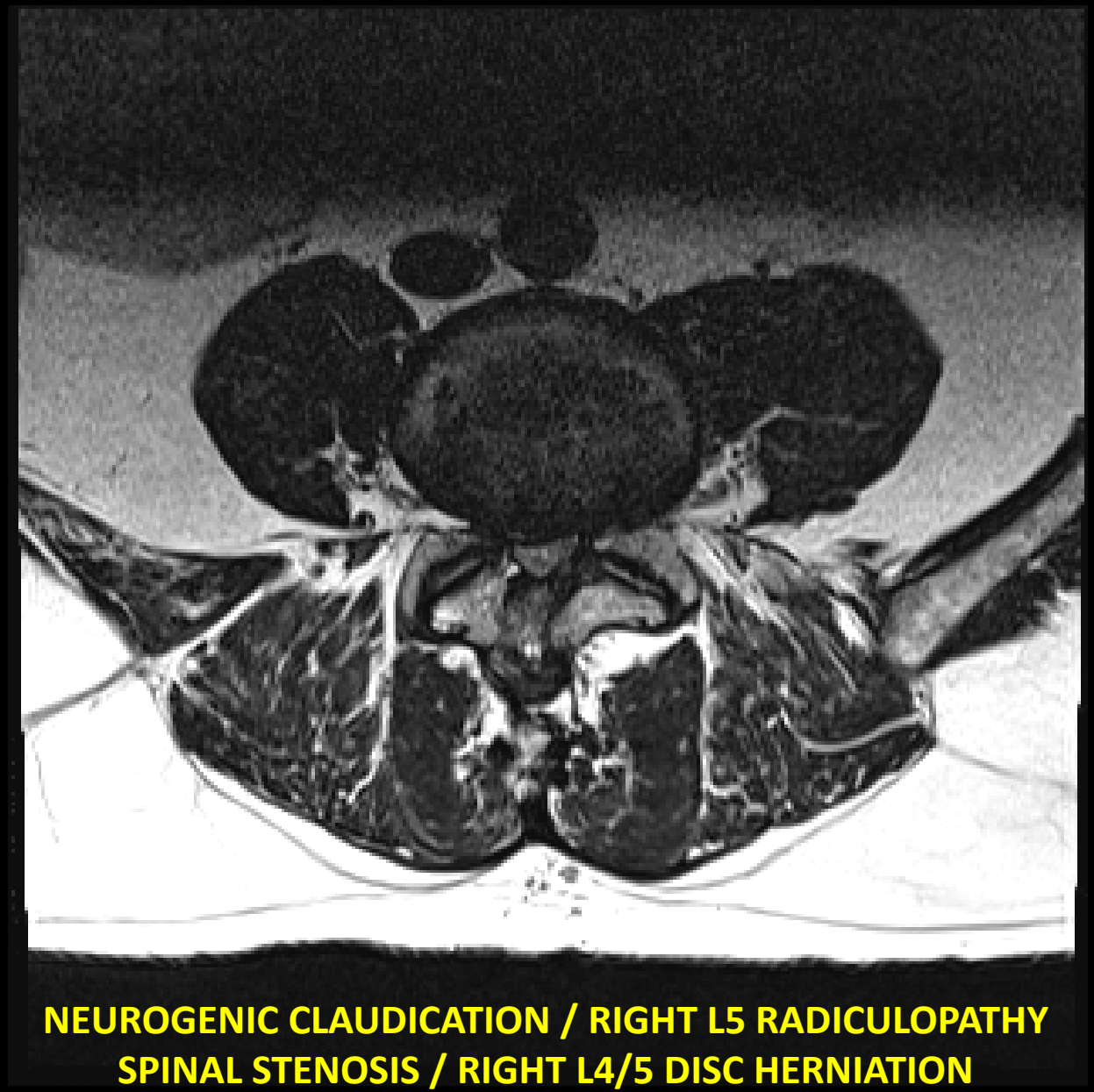
- **(+) Test** | contralateral pelvic drop

NORMAL

Only slight R & L pelvic tilt
~5° L and 5° R

(+) Trendelenburg

- R gluteus medius weaknkess [OR R superior gluteal nerve lesion]
  - R stance
    - R pelvic elevation [>>>5°]
    - L pelvic drop [>>>5°]



NEUROGENIC CLAUDICATION / RIGHT L5 RADICULOPATHY
SPINAL STENOSIS / RIGHT L4/5 DISC HERNIATION

Lower Limb

Wash Hands	
Introduce	
Patients Name	
Explain Procedure	
Consent	
Expose Legs to underwear	
Position Upright	
Inspect	
Patient General Appearance	
Muscle Wasting	
Fasciculation	
Asymmetry	
Scars	
Gait	
Deformities	
Tone	
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Heel to shin	

Close	
Thank Patient	
Cover Patient	
Wash Hands	

Overall			
U	B	S	M

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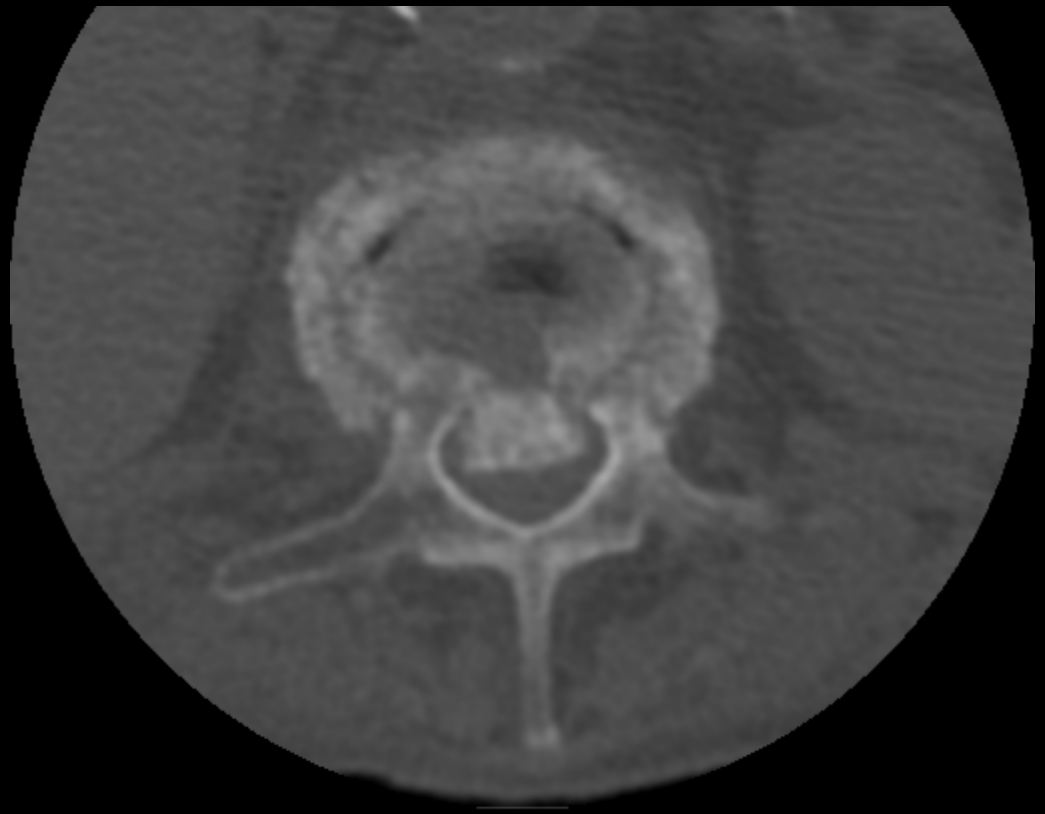
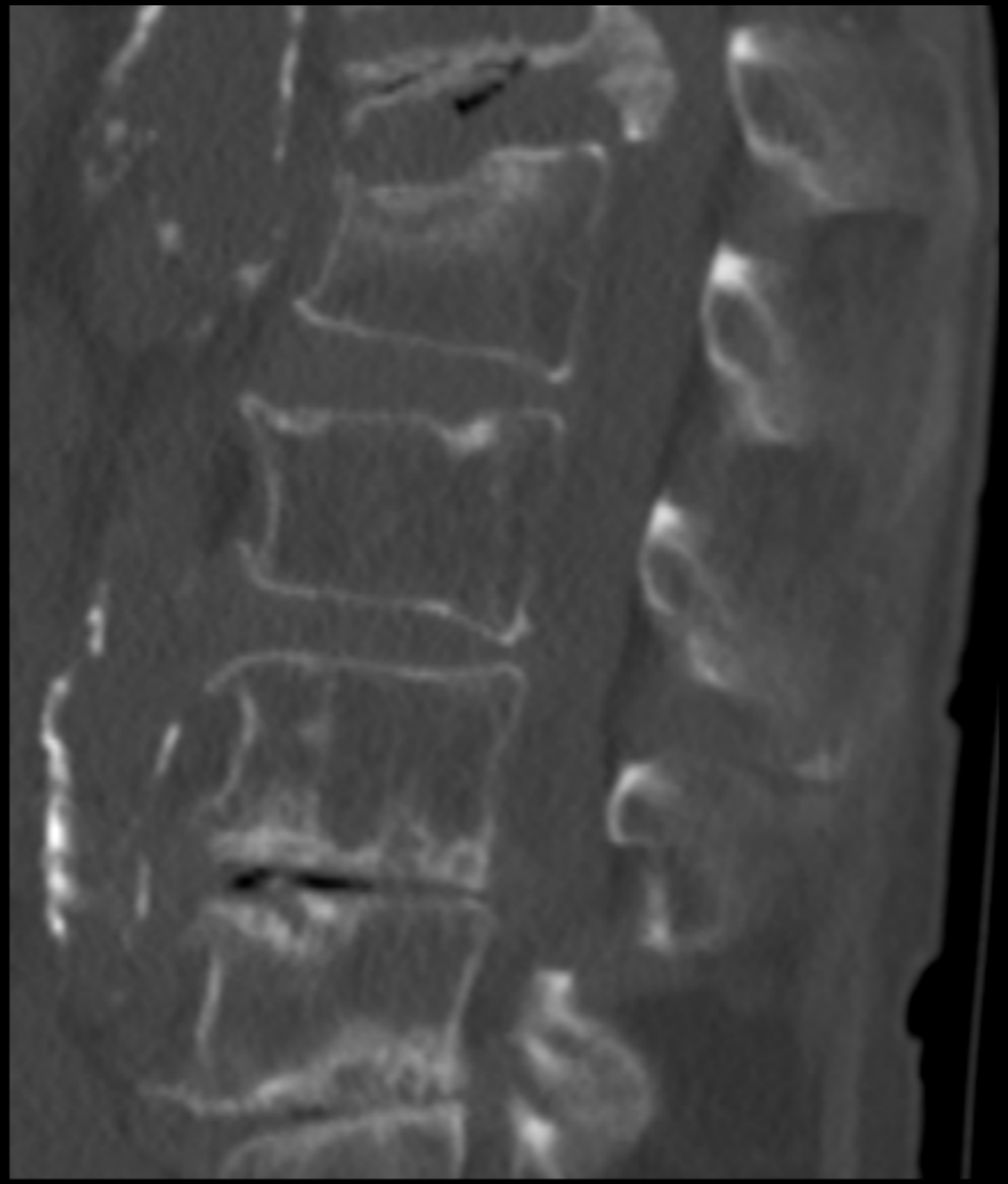
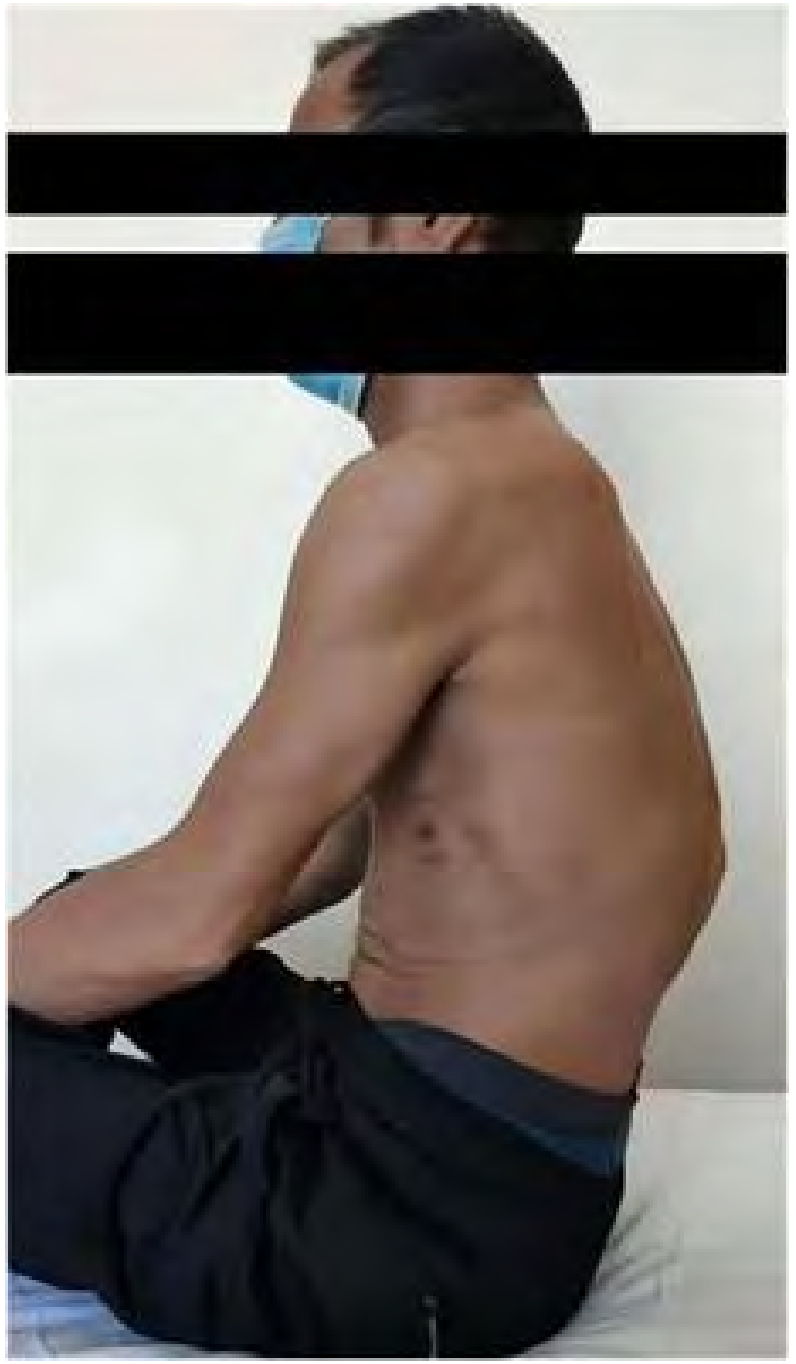
What would indicate a lower motor neuron problem?
Hyporeflexia
Specific muscle group weakness
Hypotonia

NORMAL



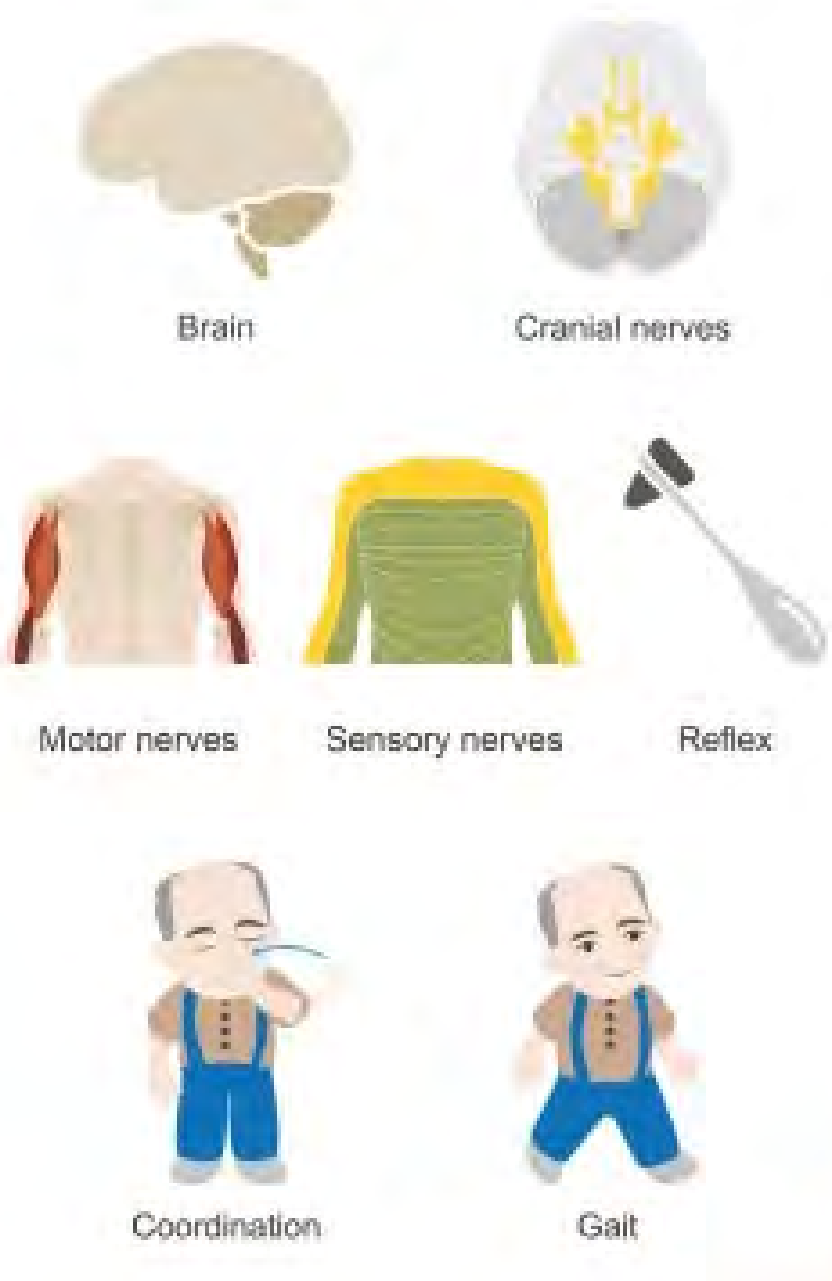


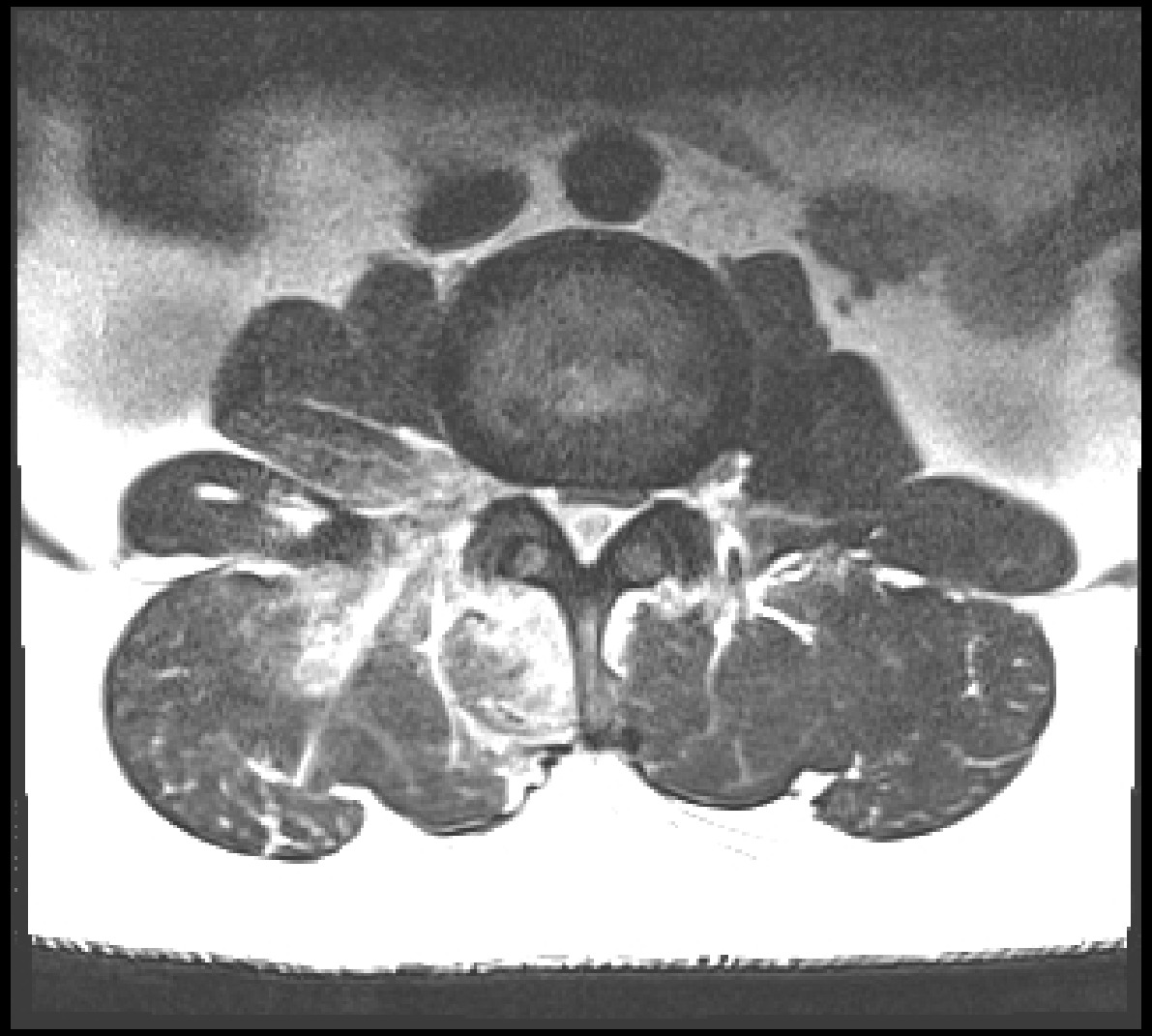
LEFT L2 RADICULOPATHY
OSTEOPOROTIC FRACTURE L1

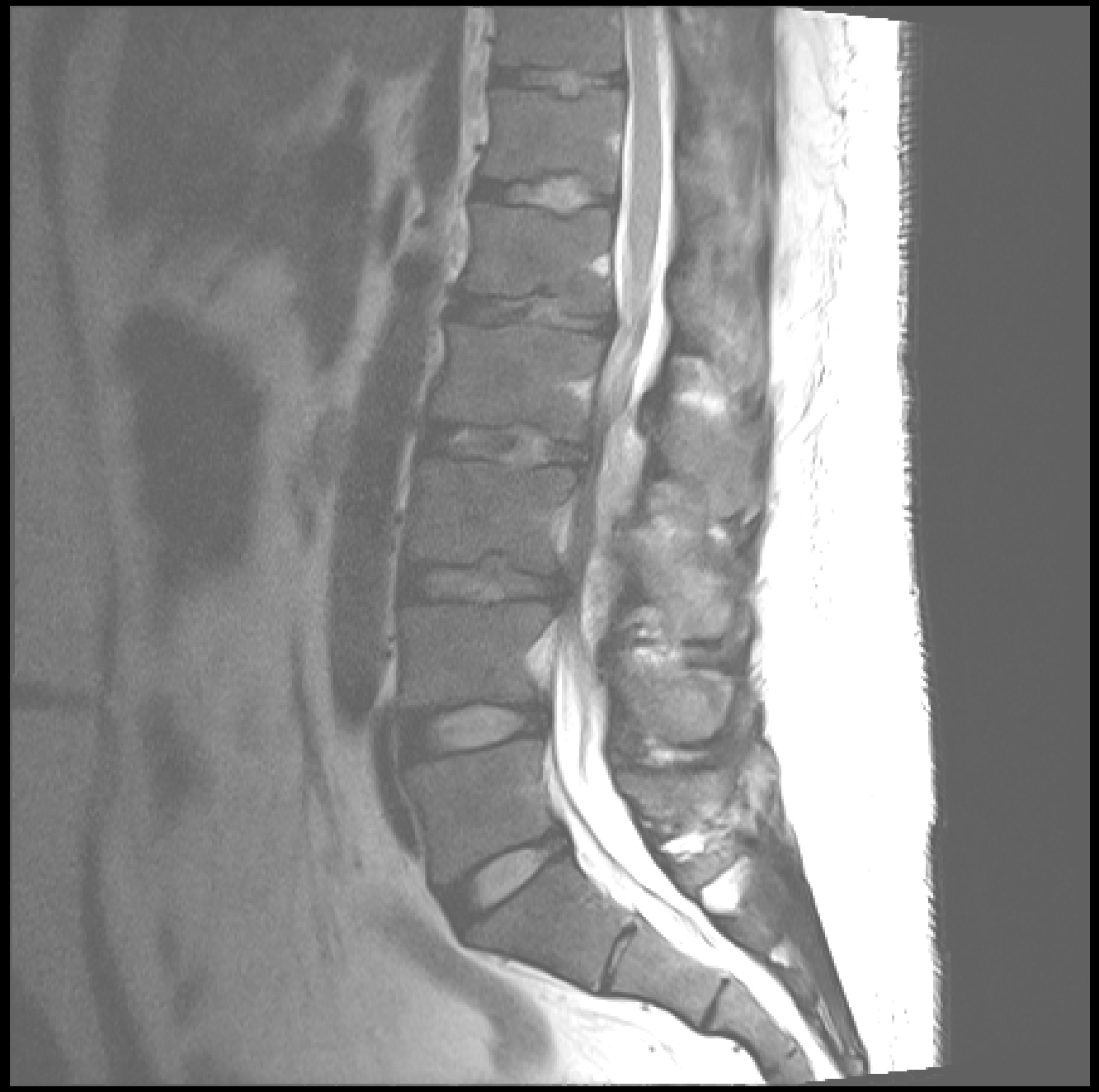


THORACIC MYELOPATHY

1. Hyperreflexia
2. Clonus
3. Babinski sign
4. Crossed adductor sign
5. Increased muscle tone
6. Spasticity
7. Loss of proprioception
8. Dermatomal sensory lev
9. Romberg sign
10. Loss of balance
11. Spastic gait
12. Unsteady gait

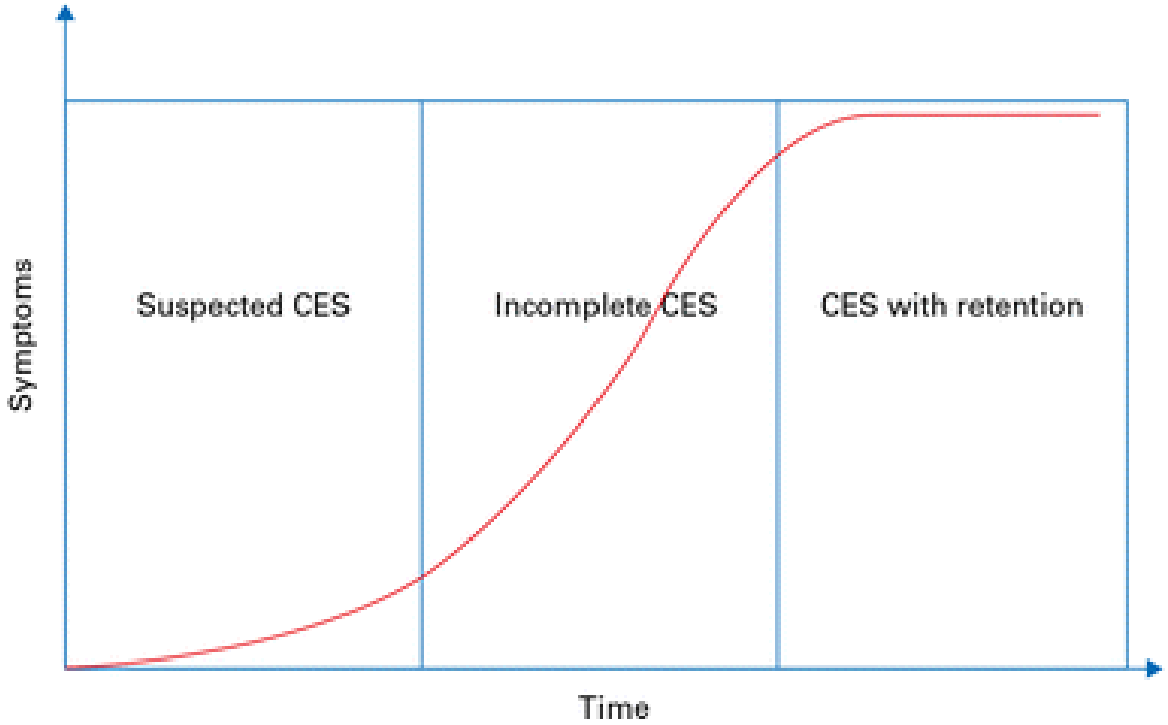






BILATERAL L3 RADICULOPATHY
EPIDURAL ABSCESS

Back pain
Bilateral leg pain
Perianal sensation
Bladder function
Per rectal (PR) tone



Imperial College Healthcare NHS Trust

Suspected Cauda Equina Syndrome (CES) Pathway

Clinical Signs and Red Flags

History
- Back pain with uni / bilateral sciatica ☐
- Lower limb weakness ☐
- Altered perianal sensation ☐
- Faecal incontinence ☐
- Acute urinary retention / incontinence ☐

Examination
- Limb weakness ☐
- Other neurological deficit / gait disturbance ☐
- Hyper-reflexia, clonus, up-going plantars ☐
- Urine retention – bladder scan PVR >400ml ☐
- Saddle anaesthesia ☐
- DRE: Loss of anal tone ☐

National Pathway of Care for Low Back and Radicular Pain
Society of British Neurological Surgeons 2014

DON'T FORGET!
- Aortic Dissection
- AAA
- Cord Compression [AOS MSCC Pathway]

In-hours: 8AM – 10PM

ED Consultant Review

CES Unlikely
Good pain control & able to mobilise?
- Yes → **Discharge**
- No → **Admit CDU**

→ **GP Follow-Up**
Pain Control / Refer to Pain Team / GP to book outpatient MRI ± NS referral

Suspect CES → **Urgent MRI**
ED Senior decision maker to liaise with Neuroradiology
Send FBC, U&Es, G&S Clotting, Urine Dip

- **No CES on MRI**
  - → **Discharge / CDU**
  - → **Refer Medicine**
    Bleep 8998 - If urgent Neurology review required
  - → **Refer NS**
    If other urgent NS pathology
- **MRI Confirms CES**
  Refer to NS – Bleep 8075
  → **Admit Under NS**

Out of hours: 10PM – 8AM

Discuss with NS
Registrar Bleep 8075
Able to review in <1 hour?
- No → **ED SpR Review**
  - **Suspect CES** → **Urgent MRI**
  - **CES Unlikely**
    Good pain control & able to mobilise?
    → **Discharge / CDU**
- Yes → **Refer NS**

ED: Emergency Department
MRI: Magnetic Resonance Imaging
CDU: Clinical Decisions Unit
NS: Neurosurgery
GP: General Practitioner
PVR: Post-void residual volume
AOS: Acute oncology service

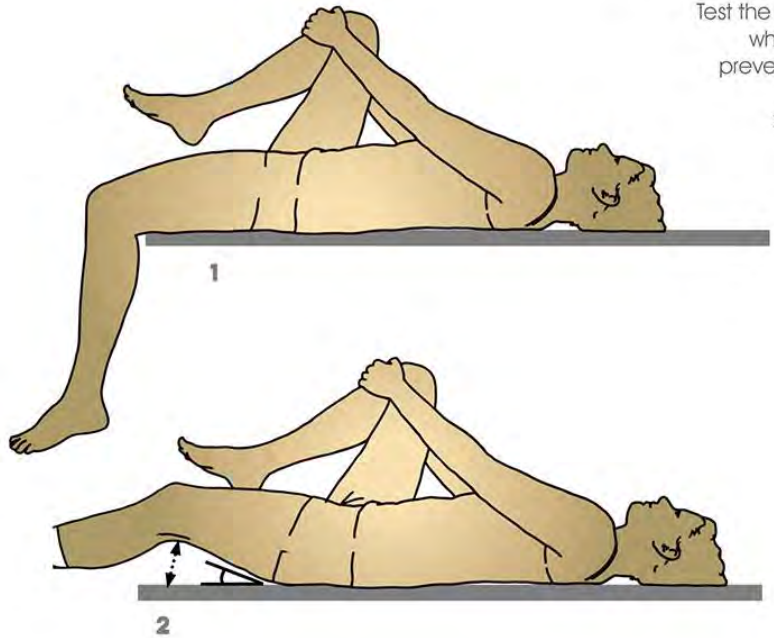

RIGHT THIGH / GROIN PAIN
RIGHT HIP OA

Symptoms of Hip Osteoarthritis

- Stiffness – difficulty putting on shoes and socks
- Pain deep in the front or side of the hip or in the buttock - "C sign"
- Pain can refer down the leg
- Difficulty with daily activities
- Pain walking – worse if faster, further or on hard or uneven surfaces
- May develop a limp
- Bent up positions painful, e.g. Sitting or squatting.
- Hip ache at night and/or morning stiffness
- Pain rising from a chair

THOMAS TEST

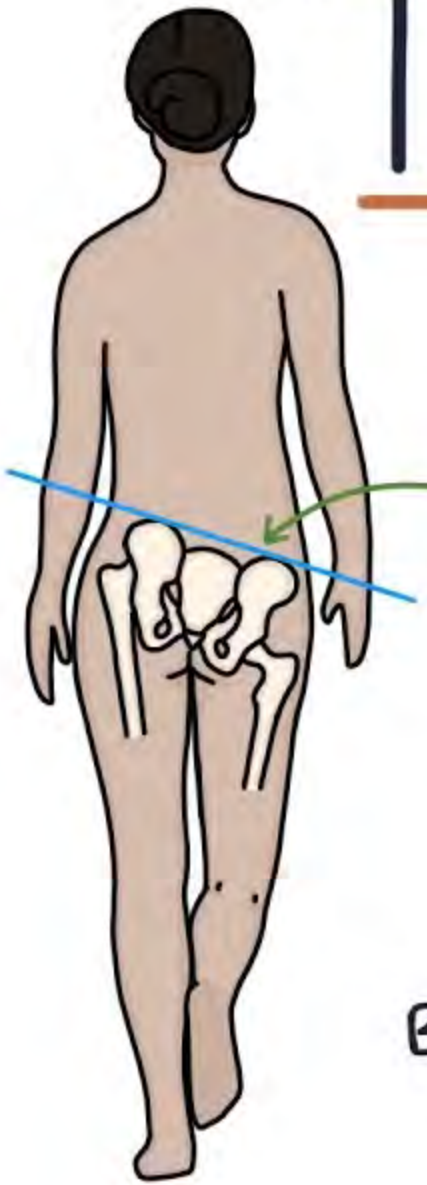
Test the rectus femoris muscle which may be restricted, preventing flattening of leg.
1: normal condition
2: restricted condition



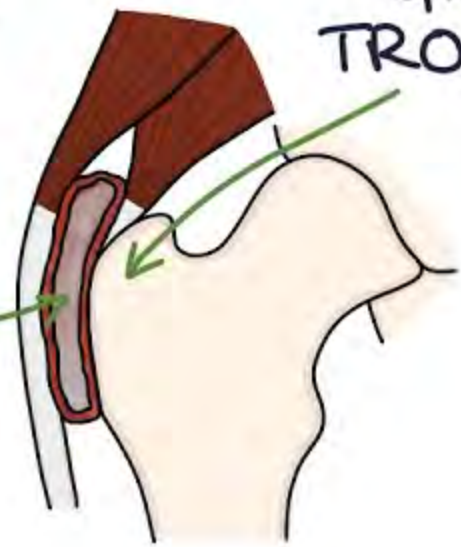
RIGHT BUTTOCK / THIGH PAIN

TROCHANTERIC BURSITIS

TROCHANTERIC BURSITIS

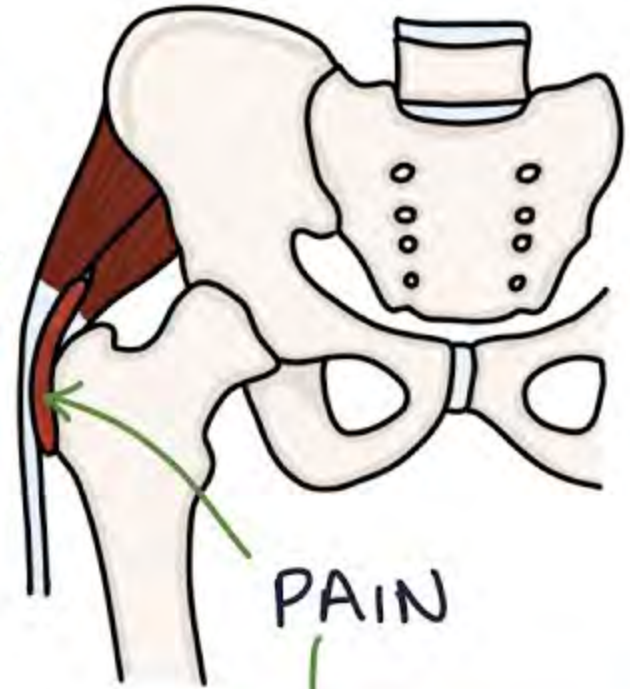


TRENDELENBURG TEST



GREATER TROCHANTER

BURSITIS



PAIN

RESISTED ABDUCTION


L
LEFT KNEE / LEG PAIN
LEFT KNEE OA

CRITERIA FOR THE CLINICAL DIAGNOSIS OF KNEE OA

		NICE	EULAR	ACR
	☐ AGE	≥ 45 🟢	≥ 40 🟢	≥ 50 🟡
SYMPTOMS	☐ ACTIVITY/USAGE-RELATED JOINT PAIN	🟢	🟢	🟢
SYMPTOMS	☐ NO EMS, OR EMS ≤ 30 MINS	🟢	🟢	🟡
SYMPTOMS	☐ FUNCTIONAL LIMITATION		🟢	
CLINICAL SIGNS	☐ CREPITUS		🟡	🟡
CLINICAL SIGNS	☐ RESTRICTED ROM		🟡	
CLINICAL SIGNS	☐ BONE ENLARGEMENT		🟡	🟡
CLINICAL SIGNS	☐ BONE MARGIN TENDERNESS			🟡
CLINICAL SIGNS	☐ NO PALPABLE WARMTH			🟡
	MINIMUM CRITERIA: ALL 🟢 PLUS		≥ 1 🟡	≥ 3 🟡

REST PAIN
CALF AND FOOT

PERIPHERAL VASCULAR DISEASE

Odds Ratios for Risk Factors

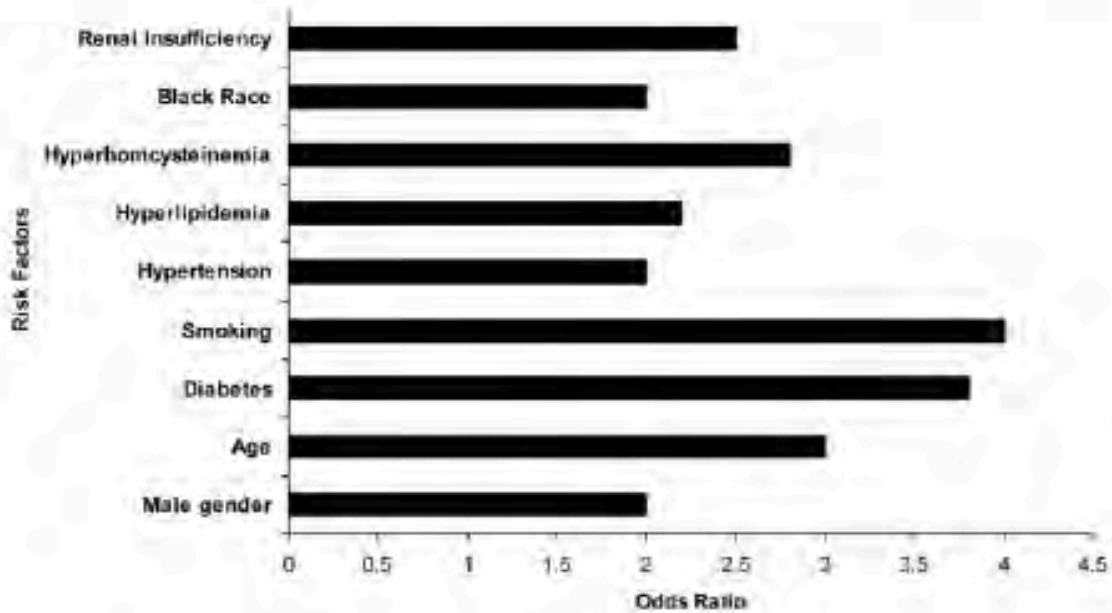


Fig 1. The approximate odds ratios (ORs) for risk factors associated with the development of peripheral arterial disease (PAD). Adapted from Inter-Society Consensus for the Management of Peripheral Arterial Disease (TASC II).[9]

Vascular Exam: Inspection

- Appearance of skin
  - Demarcation or transition
  - Shiny

- Hair growth
- Discoloration or rash
- Swelling
- Ulcer or wound

Vascular Exam: Inspection and Palpation

- Muscle atrophy
- Toenail growth

- Touch
  - Skin texture
  - Temperature
  - Pain level

Vascular Exam: Palpation

- Abdomen
- Distal pulses
- Capillary refill

Buerger's test

Patient on his back

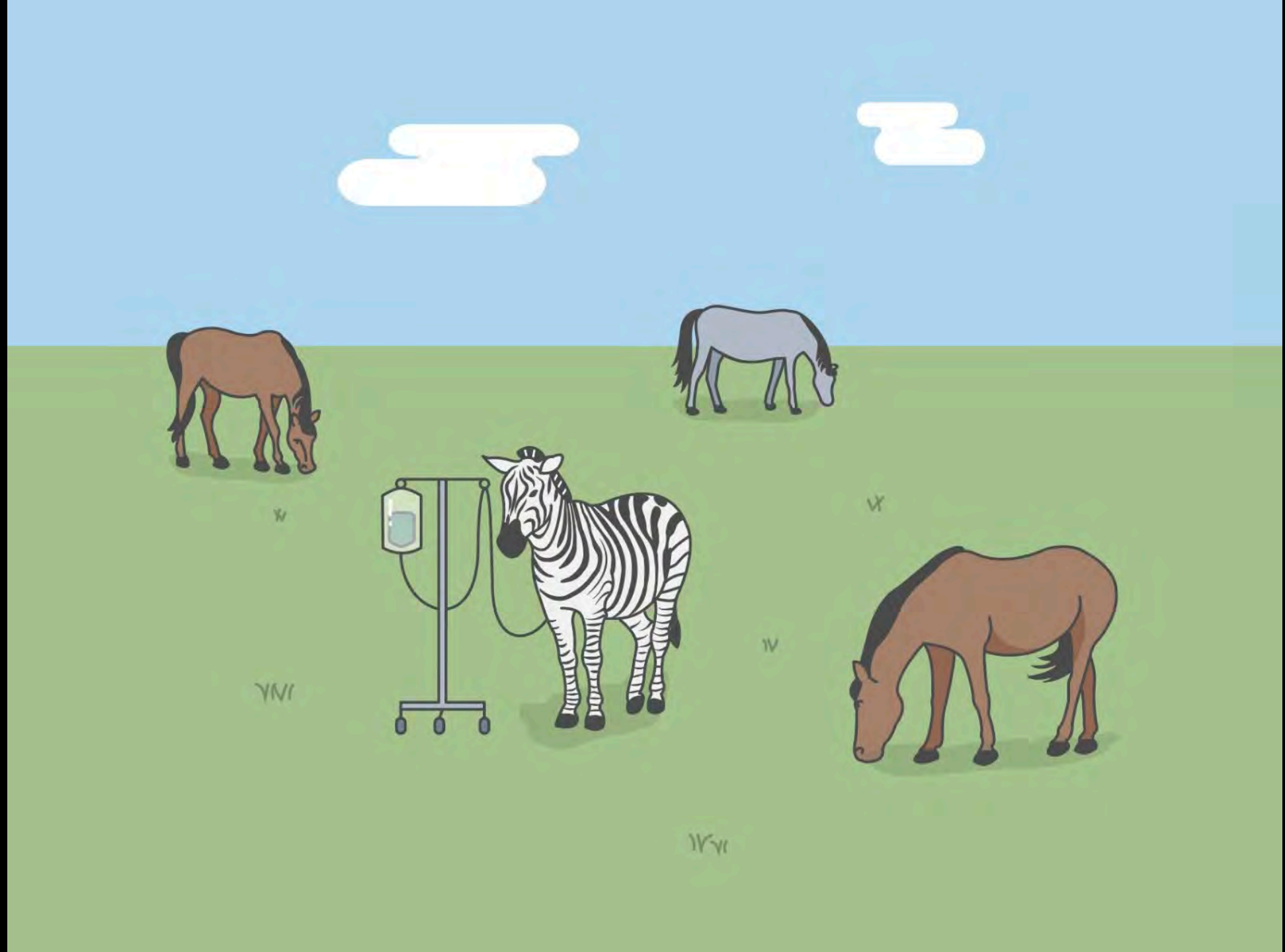
A-Rising the affected limb cause **blanching** within 2-3 M.

B-Lowering the leg below the below the horizontal plane leads to **cyanotic congestion**

Bureger's angle : is the angle of elevation ay which the pallor occurs

Normally no change of color occur whatever the position of the limb.


Don't put all your eggs in one basket
Do not put all your resources in one possibility.
UCLnet.com



ALL THAT'S LEG PAIN IS NOT SCIATICA

ANY QUESTIONS?