Lumbar disorders: physical examination of the lumbar spine

Physical examination of the lumbar spine

Observation

> General; willingness to move/sit/change position
> Standing; asymmetry, spinal deformity, muscle tone/bulk
> (erector spinae, abdominals, quadriceps, hamstrings, calves)
> lordosis/kyphosis/scoliosis, ASIS levels, skin changes
> Gait

Palpation

> Palpate for midline and paraspinal tenderness and muscle spasm

Active lumbar ROM

> Flexion, extension, lateral flexion, rotation

Neurological examination

> A thorough examination of muscle tone, power, reflexes and sensation should be performed and recorded accurately to enable monitoring of any neurological impairment or assessment of symptom progression.
> See below for requirements of a lower limb neurological examination.

Neural tests

> SLR
> Prone knee bend (femoral stretch test)

Quick screening tests of the hip joint

> Assess for fixed flexion deformity
> Hip IR /ER in 90 degrees hip flexion
> FABER test

Vascular assessment

> Observation of extremity, temperature
> Peripheral pulses, dorsalis pedis, posterior tibial

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Lower limb neurological examination

Muscle tone including clonus

Muscle power

Test particular muscle groups that correspond to specific nerve root supply.

Myotomes:

L2, L3: hip flexion

L3, L4: knee extension

L4, L5: ankle dorsiflexion

L5, S1: great toe extension, ankle eversion

S1, S2: ankle plantar flexion.

The Medical Research Council (MRC) has a recommended grading system for power:

MRC scale for muscle power	
0	no muscle contraction is visible
1	muscle contraction is visible but there is no movement of the joint
2	active joint movement is possible with gravity eliminated
3	movement can overcome gravity but not resistance from the examiner
4	the muscle group can overcome gravity and move against some resistance
5	full and normal power against resistance

Deep tendon reflexes (DTRs)

> Test the patellar (L3, L4) and achilles (S1, S2) reflexes. Reflexes can either hyperactive (+++), normal (++), sluggish (+) or absent (-). ± is used when the reflex is only present on reinforcement.

> Plantar (Babinski) response: up-going/down-going?

Sensation

An assessment of light touch sensation aims to define any areas of hypoaesthesia or dysaesthesia (see next page for illustration of dermatomal distributions). Regions of the leg that generally correlate with dermatomes include:

L2: upper thigh

L3: knee

L4: medial aspect of the leg

L5: lateral aspect of the leg, medial side of the dorsum of the foot

S1: lateral aspect of the foot, the heel and most of the sole

S2: posterior aspect of the thigh

S3-S5: concentric rings around the anus, the outermost of which is S3.

Note: upper motor neuron pathology is suggested by findings of: spastic tone, clonus, increased DTRs and up-going plantar (Babinski) response.

For detailed explanation and notes on interpretation see www.patient.co.uk/showdoc/40000059/

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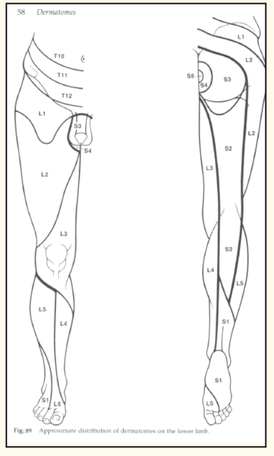

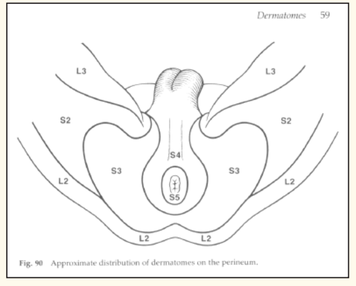

Reference: *Aids to examination of the peripheral nervous system, Brain, Bailliere Tindall, 1986.*

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