

SPINE

Age and occupation

Pain: Where: Low back or leg

Which is worse?

Where about in the leg? Describe the radiation

How long? More than 6 wks need warrant evaluation

How the pain is now compared to the onset? Progressive or not

Any other factors that make your pain worse?

Any Rest pain or night pain? [Red flag].

Walk: How many blocks can you walk?

Claudication distance

Walking up hill or downhill,

Do you need to lean on the shopping trolley

[in spinal stenosis pain is better on walking down the hill or on leaning]

Any injury

Chronic situation: ask the patient to describe a typical day and to assess disability

Treatment history: Drugs or physio or steroid.

Any tingly or numbness in the leg. If yes show where?

Any weakness?

Bowels and bladder: Loss of bowel and bladder continence,

Numb bum means cauda equina

Per rectal examination is indicated to assess anal tone

Any Red flags: H/O Primary

Infection

Weight loss and sweating

General health Any diabetes or steroid or smoking, ay history of cancer

Any compensation or litigation?

In case of cervical spine:

History is similar with regard to neck pain and radiation to the upper limb.

Also include history of myelopathy?

Walking [unsteady gait]

Clumsiness in the hand [dropping things]

Electric shock like pain in the limbs on neck movement

Bowel and bladder problem

a. Inspection

1. Walking Check gait

Stooping: stenosis;

Foot drop gait

Gross motor assessment

Walk on his heel

Walk on his toe

2. Posture:

a. Normal posture

Head –is not tilted forward or backwards.

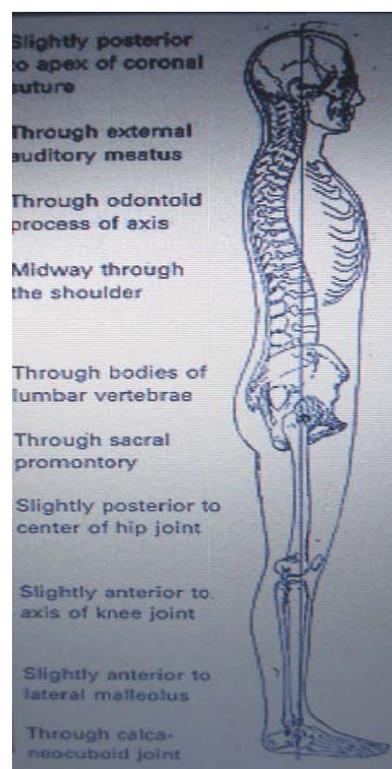
The back of the ear is directly over the top of the middle shoulder.

Upper Back –is a slight convex curve pointing backwards

Lower Back –is a slightly convex curve pointing forward

Pelvis – the pelvis is in a neutral position

Hip Joints – is not bent or not hyperextended.



b. Sway Back

Head – the head is forward of the shoulders

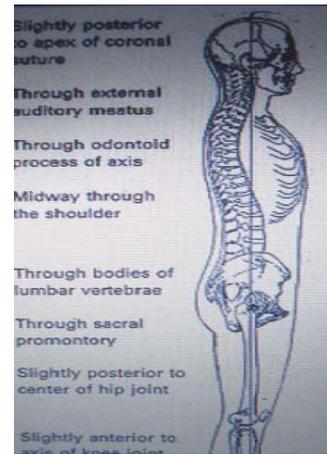
Neck – the neck is slightly extended

Upper Back – the Upper Back has an increased curve

Lower Back – the Lower back has a decreased curve

Pelvis – the top of pelvis is tilted backwards

Hip Joints – both hips are hyperextended with hips forward of ankles and knees



c. Round Back

Upper Back – the Upper Back has an increased curve

Lower Back – the Lower back has a decreased curve

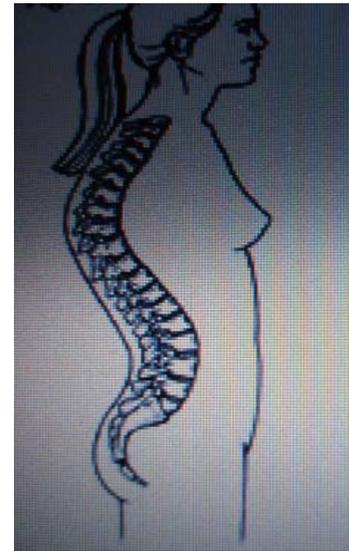
Standing: Undress: with underwear

Look for scar or deformity of the spine

Sagittal and coronal balance

Coronal: Plumb line from spinous process of C7 vertebra passes through the natal cleft

Sagittal: Ear through the highest point on the iliac crest



Normal spinal curvature:

Cervical Lordosis

Thoracic Kyphosis 25-40°

Lumbar Lordosis 25°

1. Define the deformity Where and what deformity

Scoliosis: increased lateral curvature of the spine

Kyphosis: increased convexity of the spine

Lordosis:

Scoliosis



Thoracic Kyphosis



2. Look for secondary deformity: With thoracic kyphosis, there is usually compensatory lumbar lordosis

3. Whether the deformity is fixed or correctible

Correctible deformity corrects on bending. I.e., bending forward in a case of flexible scoliosis, the deformity disappears



General examination should look for:
 Any syndromal association like Klippel Fail syndrome
Café au lait as seen in neurofibromatosis
 Tuft of hair as seen in Myelomeningocele



B. Palpation

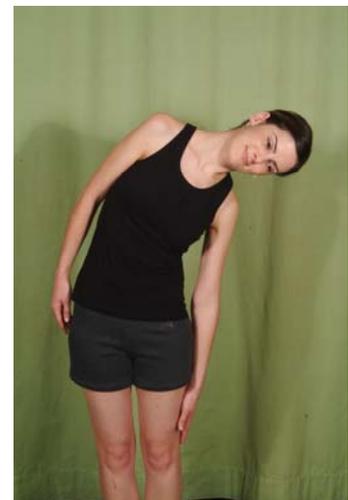
Feel for the step [positive in spondylolisthesis]
 Paraspinal spasm: feel the paravertebral muscle for spasm
 Feel for the step in the spinous process at L5 in spondylolisthesis

C. Range of movement

Flexion: Ask the patient to bend forward with knee straight. Measure the distance between the hand and the ground

Extension: Ask the patient to arch backwards to assess extension

Lateral flexion: Ask the patient to slide the hand down along the thigh to reach the knee



Movement in the thoracic and lumbar spine

Flexion	80-90° (Lumbar 60°; Thorax 40°)
Extension	20-35° (Lumbar > Thoracic)
Lateral flexion	20°
Lateral Rotation	40° (almost entirely Thoracic)

ROM in Cervical spine:

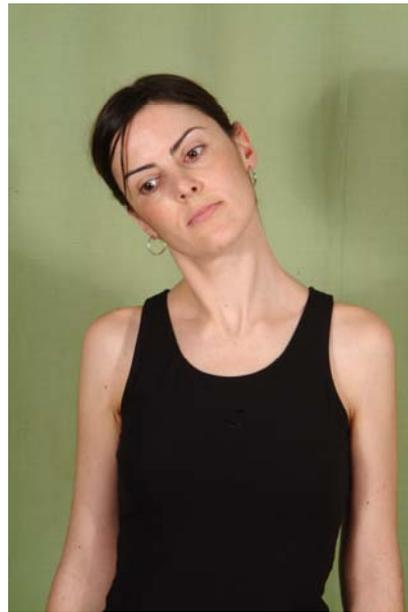
Flexion 45°;

Extension 55°



Rotation 70

Lateral flexion 40°



D.Straight leg raising test

Is a passive test

Technique

In supine, with knee extended with the examiner's one hand over the knee,

The hip is now flexed by lifting the leg with the other hand [gently]

Observe patients face for any pain

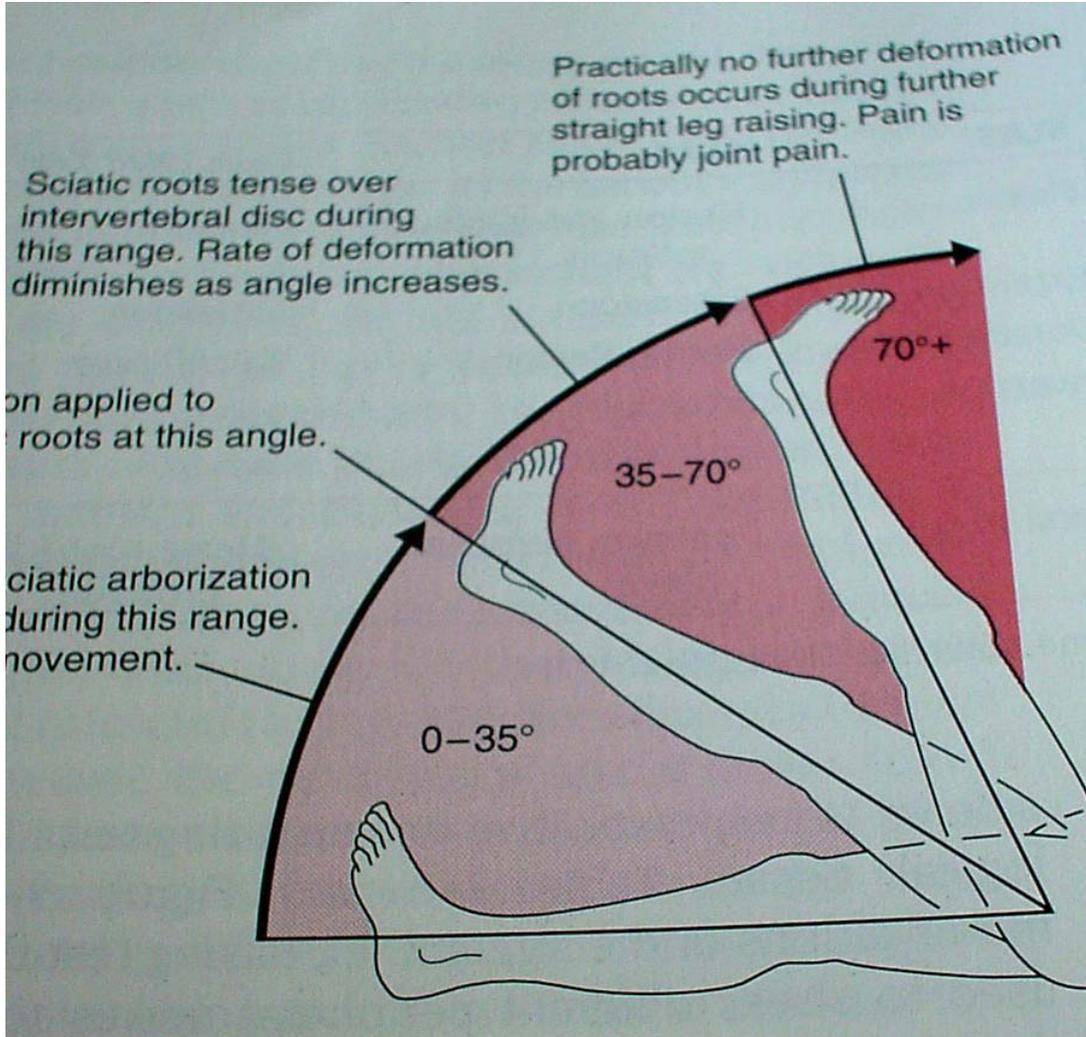
Note the angle at which pain is produced

Pain in the leg radiating to the ankle is significant



Now examiner drops leg back until the patient feels painless and at this angle if pain is reproducible on dorsiflexion of the foot, it is very suggestive of sciatica

As tension in the nerve begins at 35° and completes at 70°, test said to be positive when pain is provoked within this range.



Fajersztajn's sign (Cross leg or well leg SLR, Sciatic phenomenon)

Technique:

Lift the normal leg, patient gets sciatic pain in the opposite leg. This test is specific for disc lesion when positive

Reverse femoral stretch test

This test is positive in case of high disc above L4 or in case of far out disc at L4-5 with a far out disc pressing over L4 nerve root

Technique: Patient lies supine with hip in neutral and knee in 90° of flexion. Now examiner lifts the leg up [hyperextends] at the hip. This provokes pain in front of the thigh.

E. Neurologic [refer neurology]

Examine Motor [Feel the tendon]

Examine Reflexes including Babinski reflex

Sensation

Position sensation

Try to test: pin prick [cauda equina lesion]

F. Always include examination:

Abdomen: any abdominal aneurysm, distended bladder

SI Joint; Hip joint for osteoarthritis

G. Any inconsistency with clinical finding: Wadel's test for Malingering

1. Non-anatomic tenderness: Disproportionate pain to light touch does not correspond to the radicular distribution

2. Axial compression test: [axial pressure over the head]: Normal: pain or paresthesia in the distribution of the nerve root in the upper limb. Abnormal if patient gets pain in the lower limb

3. Distraction sign: Straight leg raising in sitting

4. Glove and stocking type instead of radicular

5. Overreaction: Reacts physically or verbally in an inappropriately theatrical manner to light forms of palpation

6. Hoover's test: Straight leg raise S LR (downward thrust in the opposite leg)

Distraction Sign



Hoover's test

Normal: Active SLR is associated with downward thrust at the opposite heel.

In malingering: No downward thrust in the opposite heel



Spurling test

Axial compression with neck
In extension and laterally flexed

Positive in cervical disc herniation

**Lhermitte's maneuver**

Patient sitting and asked to flex cervical and
thoracic spine maximally

In Cervical spinal stenosis causes parasthesia
in multiple extremities on sudden flexion
of the neck

**Beevor's sign:**

Stroke radially from umbilicus
Stroke lightly
Watch for abdominal contraction
When no contraction, Beevor's sign is positive
Is a type of upper motor reflex

**Hoffman's test:**

Flip middle finger and look for flexion in the
thumb and index



Test for spondylolysis

Test for unilateral spondylolysis

Straddle position with one leg in extension at the hip and other leg neutral at the hip.

Ask the patient to extend the back

Eg: of spondylolysis on the right side

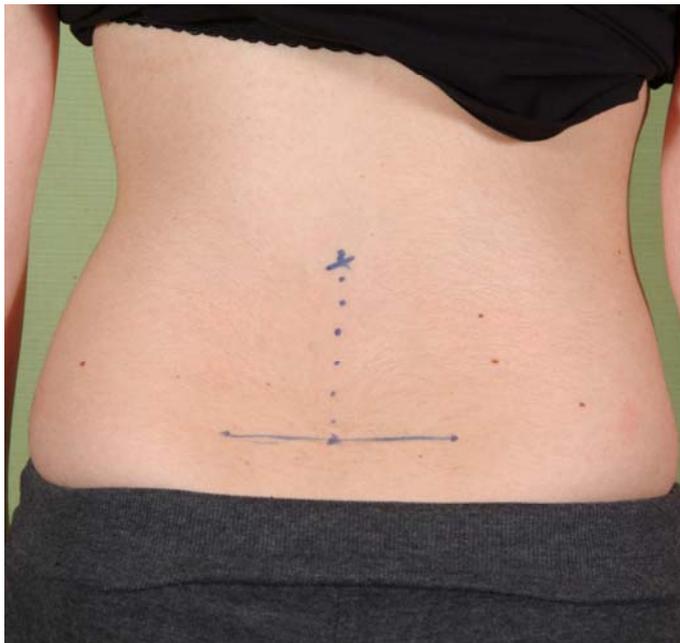


Test for Ankylosing spondylitis (Schober test)

A vertical distance in the midline is measured from posterior superior iliac spine to proximally for 10 cm and 2 points where marked.

Measure the distance on full flexion, and in neutral position

Normally the distance between two points increases more than 5 cm. In Ankylosing spondylitis this is less than 5 cm



Wall test

Patient cannot stand against a wall with the heel shoulders and occiput touching the wall

**Chest expansion**

When chest expansion is less than 2.5 cm, it is said to be limited and may indicate ankylosing spondylitis

Do not forget:

1. Dorsalis pedis pulsation
2. Gross hip examination [check rotation]
3. Abdominal examination
4. Mention: Per rectal examination