

LOW BACK EVALUATION

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HISTORY

- **Pattern I:** worse in back, slow onset hours to days, lasts a long time(weeks to months), worse on flexion.-a disk
- **Pattern II:**Worse in back, ocoors suddenly (minutes to hours)short duration (days to weeks) aggravated by extension.-facet joint involvement.
- **Pattern III:** Worse in leg but aggravated by lumbar flexion. Gradual onset and lasts along time -usually a disk
- **Pattern IV:** Worse in leg and aggravated by walking. Better with rest and a change in posturelike sitting or bending. Neurogenic claudication from chronic nerve root compression. Vascular claudication does not require a posture change for pain relief.

1. Where is the pain the worst?
2. Have these attacks occurred previously? How long did they last?
3. Pattern of pain (onset and duration)?
4. Occupation? Hobbies?
5. Previous back surgery?
6. How does it affect job or life activities?
7. What makes pain worse?
8. What makes pain better?
9. What previous treatment have you had?

Physical Examination of the back

1. **Inspection (standing)** -inspect from the side and from the back. Is thoracic curve increased? Is increased lordosis present? Is it compensatory? A fixed thoracic kyphosis is ususally due to senil kyphosis, Shuermann's disease or ankylosing spondylitis. If an angular thoracic kyphosis is present (gibbus) the most common causes are fracture, TB of spine or congenital vertebral abnormality. Is the lumbar curve flat or reversed? Often seen with ankylosing spondylitis, ruptured disc, infections of vertebrae and arthritis. An increased lordosis may be normal but may be compensatory for hip flexion deformity or increased thoracic curvature. Also seen in spondylolisthesis.

From behind: Note Cafe au Lait spots, A fat pad or Hairy midline patch suggestive of spina bifida. Also note scarring or spinal surgery. Note any lateral curvature Often seen as a protection with ruptured disc. Are the shoulders and hips level? If there is a lateral curve reexamine from behind with the patient sitting. Is the scoliosis mobile as with a short leg? If it

Flexion
Straight Leg Right
Straight leg Left
Extension
Lateral Bending Right
Lateral Bending Left
Rotation Right
Rotation Left

Nomenclature and specific muscle testing

T2 to T12 intercostal muscles. Umbilicus divides T10 and T11. Beevor's sign umbilicus tests integrity of the segmental innervation of the rectus abdominus muscle.

To test T12, L1, L2, AND L3 THERE IS NO SPECIFIC MUSCLE FOR EACH ROOT SO THE ILIOPSOAS is tested. Have them sit on edge of table with legs dangling. Stabilize pelvis and have him raise his thigh off the table. Now have him raise it higher against resistance. Compare sides. Also weak after knee or hip surgery.
Now test QUADS. (L2, L3, L4) femoral nerve. Have them stand after squatting. Extension lag of the knee is often associated with a weak quadriceps. Place one hand above the ankle the other just above the knee. Have him extend his knee (push up on the foreleg) against your resistance. Lastly test Hip ADDUCTORS. Place on side and have him resist your hand by trying to adduct the hips from an abducted position.

TESTS

Lay person on back. hold ankle and bend knee 90 degrees. Test hip motion first.

1. STRAIGHT LEG RAISING TEST(Lasegue) DEGREES PAIN
repeat 3 times measuring angle

Hamstring pain is not significant. If a radicular type pain is elicited at less than 60 degrees this is significant.

2. BRAGGARD'S SIGN: Passive dorsiflexion with leg raised just below the point where they were having pain in test #1.

3. Ask him to sit up so you can check his back
Does he bend his knees?

4. TEST POWER OF GREAT TOE DORSIFLEXION. OK WEAK
(L5)

5. TEST PERONEAL STENGTH (L5,S1) Put hand to encircle outer portion of feet. Push inward against an outward rotated foot that is resisting

6. TEST TIBIALIS ANTERIOR :(L4) The opposite of above. Foot is rotated inward and resists your testing

7. HOOVER TEST: Put both heels in your hands. Ask them to raise one leg. Do they use the opposite heel to press against your hand?

| | | | | | |
|------------------|------------|-----------|-------------------|------------|-----------|
| LEFT HEEL | YES | NO | RIGHT HEEL | YES | NO |
|------------------|------------|-----------|-------------------|------------|-----------|

8. KERNIG TEST: Hands behind the back of your head clasped. Raise up slowly. Is low back pain generated?

| | |
|------------|-----------|
| YES | NO |
|------------|-----------|

9.MILGRAM TEST: Raise both feet off the table and hold for 30 seconds. Can you? Which leg can't?

COMMENTS:

10. GAENSLER'S TEST: Put supine patient close to end of table. Have him bring one leg down to the side of the table. Protect him so he doesn't fall. Is pain reproduced? (a test for Sacroiliac involvement)

11. REFLEXES: L3- KNEE JERK **OK REDUCED or ABSENT**

**L4- Patella
L5-NONE
S1-ANKLE JERK**

12. SENSATIONS:

**S3,S4 and S5 -BEDPAN
S1- LATERAL MALLEOLUS AND
5TH TOE
L5-DORSUM OF FOOT, GREAT
TOE AND TOES 2&3;
L4- MEDIAL FORLEG AND ANKLE**

13. TREDELEBERG REST- stand patient. If patients bends one knee and raises the foot, with a L5 lesion the opposite hip will drop due to weakness of the opposite involved hip abductor.

14. ELY'S TEST Positive test produces pain in anterir thigh and indicates L2,3,4 radicular invovement from stretching the femoral nerve or posterior facet disease.

15. Toe raises times 10 to test plantar flexion power (S1).

16. Babinski Reflex

Summary:

**L4 - Positive Ely's test, altered sensations
medial foreleg and ankle**

Weak ANTERIOR TIBIALIS test. Invert and dorsiflex the foot then push

while resists. Cannot walk to heels with feet inverted . Tendency for

dropped foot or steppage gait. Sensation reduced mesial foot.

Medial

to the sharp crest of the tibia on the leg.below the patella.

L5 - Great toe extension weakness

Sensory changes on dorsum of foot, great toe and second and third

toes and lateral to the tibial ridge on leg.

Hip abductor power weakness unilateral

Dorsal ankle or peroneus power weakness

S1- Ankle reflex

Sensation lateral malleolus and 5th toe

plantar flexion with test 15_