

Low Back Assessment

Back pain, especially in the area of the lower back, is a common patient complaint. Patients may complain of muscle tension or stiffness often felt below the costal margin and above the inferior gluteal folds. The level of involvement starts at the superior lumbar spine and ends at the distal coccyx, and includes the musculoskeletal (e.g. intervertebral discs, nucleus pulposus, vertebrae) and nervous systems (central and peripheral) co-located in this region. Radiculopathy can occur with leg pain and/or numbness down one or both legs. Causes of low back pain include degeneration of intervertebral discs, fractures, arthropathies, muscular strain, spinal ligament sprains, osteoarthritis, presence of a lesion (malignancy, infection), and many others integral to the back. However, some causes can arise not from pathology of the lower back but other regions, such as the hip and pelvis, femur, and/or genitourinary system. Therefore a thorough assessment is needed for a comprehensive care plan. Careful assessments and inspections of signs of muscle wasting, asymmetry, abnormal gait, assessing movement, palpation, and range of motion are vital for diagnosis and treatment.



PLAY PICMONIC

Low Back Assessment

Inspection

Inspect

For proper inspection, the patient is draped in a gown open at the back. Stand away so you can inspect the entire area easily at a distance. Inspect and observe for an expectedly symmetrical and aligned spine. Imagine a line from the head through the spinous process and down to the gluteal cleft. Note symmetry of the shoulders', scapulae, iliac crests' and gluteal folds' horizontal positions. The arm and lateral thorax on both sides are expectedly equidistant. The patient's knees and feet are expectedly aligned with the trunk and pointing forward. Instruct the patient to bend forward or flex the spine to visualize abnormalities of the spine, such as scoliosis. Patients with scoliosis may present with one side of the spine, thorax and possibly the trunk raised in comparison to the other side.

Functional Exam

Movement

Dancing

Assess patients gross motor function, stability and balance by observing an expectedly upright posture and steady gait. If possible, inspect this while the patient is unaware. During a gait assessment, patients expectedly step and stride with the opposing arm to the advancing leg swinging lightly and unaided while maintaining balance. A benign assessment is when the patient walks in a straight line, turns, and returns to the point of origin.

Palpation

Paw

Before palpation, note current and previous locations of the patient's pain and tenderness, and be cautious when palpating these areas. Beginning with the superior lumbar spine, palpate the spinous processes by lightly pushing and tapping directly over the spine and assess for pain, instability, deformity or tenderness. The spinous process is expectedly straight and non-tender. Next, palpate the paravertebral muscles and note findings corresponding to the level of the spine (e.g. lumbar, sacral); they should feel firm with no tenderness or spasm. Finally, note any reproduction of radicular symptoms (e.g. shooting pain) down one or both legs during palpation.

Flexion and Extension

Flexing and Extension-cord

Range of motion can be assessed by asking the patient to bend forward and touch their toes (flexion). During movement, assess for smoothness and symmetry and note any pain or limitation. Any abnormal curvature to the spine will be observed more clearly during this movement.

Rotation

Rotate

Another ROM assessment advises the patient to twist or rotate shoulders from side to side while standing firmly and observe for pain, limitation or discomfort.

Lateral Bend

[Ladder Bend](#)

Instruct the patient to bend sideways by performing a lateral bend with feet planted and moving at the waist and repeat to the contralateral side.

Hyperextension

[Hiker-extending](#)

Instruct the patient in backwards movements by hyperextending the spine while standing with feet planted and noting an ability to perform this motion.

Special Tests

Straight Leg Raise Test

[Straight Leg Raising Test](#)

Finally, ask the patient to lay down on a flat surface (e.g. examination table) and perform a straight leg test by raising one leg at the hip and while leaving the other leg flat. The examiner supports the raised leg at the foot and posterior knee and finishes the technique by dorsiflexing the foot. If pain or limitation is experienced during the movement on either side, it may confirm the presence of sciatica or a herniated nucleus pulposus.