

Intervertebral Disc

Disc Bulge

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A disc bulge is defined as generalized mild extension of the outer boundary of the intervertebral disc beyond the border of the adjacent bone. If there is not other evidence of disc abnormality it may be considered a normal variant. Disc volume and shape will adapt and change under different loading and positional states. A symmetric disc bulge which involves between 50 and 100% of the circumference of the disc is not considered a form of herniation and is more likely to represent a normal state.

Disc bulges are very common occurring in over 50% of adults at some level of the spine. It is more common in individuals who are more than 30 years of age. Disc bulges become more prevalent with advancing age.

Most disc bulges are not associated with symptoms. If symptoms do occur it may involve one or more of the following.

- Neck or back stiffness
- Spinal segment dysfunction (subluxation)
- Midline neck or back pain

In the presence of other spine pathology it may be associated with nerve root symptoms such as

- Radiating extremity pain
- Extremity numbness and tingling
- Muscle weakness

A disc bulge without other pathology will not be identified at all on an X-ray study. If there is some associated age-related disc degeneration, an X-ray study may reveal reduced disc space height between vertebrae. There may be signs of arthritis with bone spurs and enlargement of the spinal (facet) joints. CT assessment may confirm the generalized extension of the outer portion of the disc beyond the boundary of the adjacent vertebrae. MR imaging is the most revealing of the imaging tests for disc bulge. It typically presents with reduced signal on T2 weighting consistent with some disc degeneration. It may reveal thickening of some of the spinal ligaments and degenerative joint changes. MRI may reveal tears of the disc fibers (annulus) if present.

A disc bulge needs to be differentiated from other conditions including:

- Disc Protrusion
- Ossification (Calcification) of the Posterior Longitudinal Ligament
- Vertebral Bone Spur

The may be genetic predisposition to developing disc degeneration and associated disc bulge. Environmental factors such as heavy lifting, rotation, repetitive flexion-extension and injury can lead to disc fiber compromise and generalized disc bulging. Age related change sin the water content of the disc as ell as the biochemical composition of the disc can lead to disc bulging. Poor posture and repetitive physical microtrauma can also lead to a disc bulge. Any condition which promote disc degeneration such as reduced nutrient supply to the disc secondary to degenerative endplate changes. Increased loads place upon a disc can lead to temporary disc bulging secondary to pressure placed down upon the disc.

Most disc bulges are not associated with symptoms and represent a normal disc state. If there are bone spurs, thickening of spinal ligaments of spinal joint enlargement (facet hypertrophy) there may be crowding of the central or lateral spinal canal. This would leave less room for a spinal nerve in the presence of a disc bulges. Most patients with a bulging disc usually respond to conservative care. A small percentage of individuals may go on to develop chronic or progressive neurological involvement. The pain associated with disc bulges is usually self-limited. If a disc bulge is associated with annular tears in the disc, the condition is more likely to progress to a disc herniation and disc degeneration. An asymptomatic disc bulge requires no treatment. Treatment options include:

Conservative

- Rest
- Spinal Manipulation
- Spinal Traction (Disc Decompression)
- NSAIDS
- Physical Therapy
- Epidural Injection
- Rehabilitation and exercise

Surgical

- IDET (Intradiscal ElectroThermal Therapy)
- Discectomy with stabilization if intractable pain