

Lumbar Foraminal Stenosis Etiology

Lumbar foraminal stenosis (LFS) is one of the most frequent forms of [lumbar degenerative spondylosis](#) (LDS), a late consequence of [intervertebral disc degeneration](#) (IVD) and considered a wear-and-tear phenomenon that is at least partially [age](#)-related. The narrowing of the [intervertebral space](#) leads to secondary [hypertrophy](#) of the [intervertebral joints](#) as a reaction to overload, [ligamentous](#) overgrowth, and a reduction in [intervertebral foramen](#) diameter. This chain reaction is the main reason for [nerve root impingement](#) and distorted neurodynamics that lead to mixed pain in advanced spondylosis (axial and radicular pain) ¹⁾.

Lumbar Foraminal Stenosis can develop as a result of progressing [Degenerative spine disease](#) due to aging, causing [disc height loss](#) of an intervertebral disk, osteoarthritic changes in the facet joints, cephalad subluxation of the superior articular process of the inferior vertebra, and buckling of the [ligamentum flavum](#) or protrusion of the annulus fibrosus ²⁾ may lead to segmental instability and subsequent central/foraminal stenosis secondary to [ligamentum flavum hypertrophy](#) and [osteophyte](#) formation.

¹⁾

Urits I, Burshtein A, Sharma M, Testa L, Gold PA, Orhurhu V, Viswanath O, Jones MR, Sidransky MA, Spektor B, Kaye AD. Low Back Pain, a Comprehensive Review: Pathophysiology, Diagnosis, and Treatment. Curr Pain Headache Rep. 2019 Mar 11;23(3):23. doi: 10.1007/s11916-019-0757-1. PMID: 30854609.

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Hasegawa T, An HS, Haughton VM, Nowicki BH. Lumbar foraminal stenosis: critical heights of the intervertebral discs and foramina. A cryomicrotome study in cadavera. J Bone Joint Surg Am. 1995 Jan;77(1):32-8. PMID: 7822353.

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