

Lumbar disc degeneration (LDD)

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One of the major causes of [Low Back Pain](#) is lumbar disc degeneration.

Lumbar disc degeneration (LDD) is associated with both genetic and environmental factors and affects many people worldwide. A hallmark of LDD is loss of proteoglycan and water content in the nucleus pulposus of intervertebral discs. While some genetic determinants have been reported, the etiology of LDD is largely unknown.

The findings from linkage and association studies on a total of 32,642 subjects consisting of 4,043 LDD cases and 28,599 control subjects, identified [carbohydrate sulfotransferase 3](#) (CHST3), as a susceptibility gene for LDD.

The etiology of LDD is not fully understood and is undoubtedly multifactorial. Contributing factors such as body weight, mechanical loading, physical activities, nutritional imbalances, and genetics have all been implicated. More recently, familial predisposition and twin studies have demonstrated a significant genetic contribution, with heritability estimates as high as 74%, but population cohort data on specific genes are lacking ¹⁾.

Classification

See [Intervertebral disc degeneration classification](#)

Gene

[carbohydrate sulfotransferase 3](#) (CHST3).

¹⁾

Gologorsky Y, Chi J. Genetic predisposition to lumbar disc degeneration. Neurosurgery. 2014 Feb;74(2):N10-1. doi: 10.1227/NEU.0000000000000275. PubMed PMID: 24435142.

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