

# Transdiscal screw fixation

Transdiscal fixation is defined as screw placement in the S1 pedicles, across the L5-S1 disc space, and penetrating into the L5 vertebral body.

Collados-Maestre et al. hypothesized that the transdiscal fixation is mechanically stronger to resist L5-S1 slipping compared with pedicle fixation, regardless of the fixation level proximal to L5<sup>1)</sup>

## Case series

Many case-series studies of lumbosacral fusion for spondylolisthesis have been reported, but only a few have focused on L5-S1 transdiscal screw fixations<sup>2) 3) 4)</sup>, and only 2 of these had more than 20 patients<sup>5) 6)</sup>.

Other studies had used transdiscal screwing associated with some other technique of fusion<sup>7) 8) 9) 10)</sup>.

see also [Pedicular transvertebral screw fixation](#)

1)

Collados-Maestre I, Lizaur-Utrilla A, Bas-Hermida T, Pastor-Fernandez E, Gil-Guillen V. Transdiscal screw versus pedicle screw fixation for high-grade L5-S1 isthmic spondylolisthesis in patients younger than 60 years: a case-control study. Eur Spine J. 2016 Jun;25(6):1806-12. doi: 10.1007/s00586-016-4550-0. Epub 2016 Apr 5. PubMed PMID: 27048540.

2)

Boachie-Adjei O, Do T, Rawlins BA (2002) Partial lumbosacral kyphosis reduction, decompression, and posterior lumbosacral transfixation in high-grade isthmic spondylolisthesis: clinical and radiographic results in six patients. Spine 27:161-168

3)

Francois J, Lauweryns P, Fabry G (2005) Treatment of high-grade spondylolisthesis by posterior lumbosacral transfixation with transdiscal screws: surgical technique and preliminary results in four cases. Acta Orthop Belg 71:334-341

4)

Logroscino CA, Tamburrelli FC, Scaramuzzo L, Schiro GR, Sessa S, Proietti L (2012) Transdiscal L5-S1 screws for the treatment of adult spondylolisthesis. Eur Spine J 21(Suppl 1):128-133

5)

Rodriguez-Olaverri JC, Zimick NC, Merola A, Vicente J, Rodriguez J, Tabuenca A et al (2008) Comparing the clinical and radiological outcomes of pedicular transvertebral screw fixation of the lumbosacral spine in spondylolisthesis versus unilateral transforaminal lumbar interbody fusion (TLIF) with posterior fixation using anterior cages. Spine 33:1977-1981

6)

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7)

Grob D, Humke T, Dvorak J (1996) Direct pediculobody fixation in cases of spondylolisthesis with advanced intervertebral disc degeneration. Eur Spine J 5:281-285

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Smith JA, Deviren V, Berven S, Kleinstueck F, Bradford DS (2001) Clinical outcome of trans-sacral

interbody fusion after partial reduction for high-grade L5-S1 spondylolisthesis. Spine 26:2227-2234

<sup>10)</sup>

Lakshmanan P, Ahuja S, Lewis M, Howes J, Davies PR (2009) Transsacral screw fixation for high-grade spondylolisthesis. Spine J 9:1024-1029

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