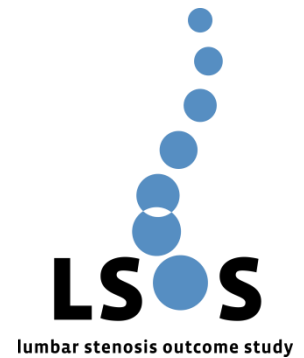


## Abstract

# Influence of paravertebral muscle quality on treatment efficacy of epidural steroid infiltration or surgical decompression in lumbar spinal stenosis – A Swiss Prospective Multicenter Cohort Study



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### Purpose

Epidural steroid infiltration and surgical decompression are established treatment options for symptomatic lumbar spinal stenosis (LSS).

We raised the question whether muscle quality, as reflected by fatty infiltration of lumbar paraspinal musculature, may affect the clinical outcome and failure rate of epidural steroid infiltration (ESI) or surgical decompression.

### Methods/Materials

The Swiss lumbar stenosis outcome study (LSOS), which is a prospective multicenter cohort study of patients with symptomatic lumbar spinal stenosis, was used as database. Patients with symptomatic LSS who received an epidural steroid infiltration (group I) or lumbar decompression surgery (group II), had a follow up of at least 12 months and a pre-treatment lumbar MRI were included (n=205). Paravertebral muscle quality was quantified by the degree of fatty infiltration (according to Goutallier/Fuchs) on the level L3. Clinical outcome was assessed using the Spinal Stenosis Measure (SSM), Numeric Rating Scale (NRS), Roland and Morris Disability Scale (RMDQ) and EQ-5D-3L sum score. Re-infiltration, surgery following infiltration or revision was defined as treatment failure.

### Results

Relevant fatty infiltration, as defined by a Goutallier stage  $\geq 2$ , was not associated with higher rates of treatment failures in neither those treated initially with epidural steroid infiltration (group I,  $p=0.21$ ) nor with surgical decompression (group II,  $p=0.81$ ). Clinical outcome in terms of SSM, NRS, RMDQ and EQ-5D-3L sum score was not influenced by the presence of fatty infiltration Goutallier stage  $\geq 2$ , in both groups, except for SSM symptoms in group II ( $p=0.04$ ).

### Conclusion

Relevant fatty infiltration, as a sign of low muscle quality, has low impact on clinical outcome, and no impact on failure rates of treatments with epidural steroid infiltration or decompression surgery.

