Sex differences in lumbar degenerative disc disease

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OBJECTIVES
A growing number of studies focus on sex differences in the pre- and postoperative setting in patients with degenerative disc disease (DDD). The exact pathomechanism behind this phenomenon, however, remains unclear. The objective of this study was to investigate pre- and postoperative sex differences in patients with lumbar DDD.

PATIENTS AND METHODS
In a prospective two-center study, back and leg pain (Visual Analogue Scale (VAS)), functional disability (Oswestry Disability Index (ODI) and Roland-Morris Disability Index) and health-related quality of life (HRQoL) (EuroQol 5D and Short-Form (SF12)) were collected for patients scheduled for lumbar spine surgery. In addition to the subjective functional impairment (SFI), objective functional impairment (OFI) was estimated using age- and sex-adjusted cut-off values for the timed-up-and-go (TUG) test. The 6-week responder status was defined using minimally clinically important differences of the ODI, SF12 PCS, VAS back and leg pain in all patients. Six months and one year follow-up (FU) was available in n=127 and n=87 patients, respectively.

RESULTS
The patient cohort comprised of n=214 patients (41.6% females). Preoperatively, female patients scored significantly worse on VAS back and leg pain, ODI and SF12 PCS (p<0.033), while OFI was similar (p=0.334). At the 6 week FU, sex-related differences had resolved for SFI and OFI was similar as well (p=0.333). There were no sex differences in the mean improvement after 6 weeks for all measures of pain intensity, functional impairment and HRQoL (p>0.182). Male and female patients profited equally on measures of SFI and HRQoL up to six months and one year after surgery (p>0.091).

CONCLUSION
Preoperatively, female patients scored worse in terms of SFI, while OFI was similar. Consecutively, OFI appears to be less prone to sex bias and may thus serve as a valuable surrogate-marker of disability. The disadvantageous preoperative SFI-status did not translate into worse postoperative results, as no sex differences were present at the 6-week, 6-months and 1-year follow-up.