**Outcome of unilateral approach versus standard open midline approach for bilateral decompression in lumbar spinal stenosis.**

**Is “over the top” really better?**

**Object** The purpose of our study was to assess which surgical approach, namely a) the unilateral laminotomy with bilateral spinal canal decompression (ULBD ; also called “over the top”), or b) the standard open bilateral decompression (SOBD) achieves better clinical outcome in the long term follow-up. We used data from the LSOS, the Swiss multi-center prospective cohort study, to explore outcome in this issue.

**Methods** The main outcomes of this study are changes in Spinal Stenosis Measure (SSM) symptoms score, SSM function score, and quality of life (EQ-5D-EL sum score) over time. These outcome parameters are measured at baseline, at 6-, 12-, 24- and 36-month follow-up. To obtain an unbiased result on the effect of ULBD and the SOBD-approach we choose matching techniques relying on propensity scores. The latter is calculated based on a logistic regression model including relevant confounders. Further additional outcomes of interest are raw changes in main outcomes and in Roland and Morris Disability Questionnaire from baseline to 6, 12, 24 and 36 months.

**Results** For this study, 277 patients meet the inclusion criteria. One hundert fourty-nine patient were treated by the ULBD approach, 128 were treated by the SOBD-approach. After propensity score matching, 128 patients are left in each group. In the matched cohort, the estimated difference of ULBD and SOBD-approach for changes in SSM symptoms score from baseline to 6 months is XXX (95% CI XXX to XXX), to 12 months XXX (XXX to XXX), to 24 months XXX (XXX to XXX), and to 36 months XXX (XXX to XXX). For changes in SSM function score, the estimated difference from baseline to 6 months is XXX (-XXX to XXX), to 12 months XXX (XXX to XXX), to 24 months XXX (XXX to XXX), and to 36 months XXX (XXX to XXX). Differences in changes between groups in EQ-5D-EL sum score are estimated to be XXX (XXX to XXX), XXX (XXX toXXX), XXX (XXX to XXX), and XXX (XXX to XXX) from baseline to 6, 12, 24, and 36 months. None of the group differences between the ULBD and the SOBD group are statistically significant. All matched patients improve over time in all additional outcomes.

**Conclusions** This multi-center study with 277 patients provides good outcome comparison of the ULBD and SOBD-approaches after three years follow-up. We conclude that both surgical techniques provide equally effective treatment options for DLSS patients. Both approaches, despite their varying degrees of aggressiveness, do not appear to be different in the final outcome after three years. We can further determine that the technically more challenging ULBD approach seems not to be superior to the standard open laminotomy even after three years of follow-up.