

# Evaluation of the EQ-5D-3L and 5L Versions in Low Back Pain Patients

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## Research

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# Abstract

**Background:** The EuroQol EQ-5D is the most widely researched and applied patient-reported outcome measure worldwide. The original EQ-5D-3L and more recent EQ-5D-5L include three and five response categories respectively. Evidence from healthy and sick populations shows that the additional two response categories improve measurement properties but there has not been a concurrent comparison of the two versions in patients with low back pain (LBP).

**Methods:** LBP patients taking part in a multicenter randomized controlled trial of lumbar total disc replacement and conservative treatment completed the EQ-5D-3L and 5L in an eight-year follow-up questionnaire. The 3L and 5L were assessed for aspects of data quality including missing data, floor and ceiling effects, response consistency, and based on a priori hypotheses, associations with the Oswestry Disability Index (ODI), Pain-Visual Analogue Scales and Hopkins Symptom Checklist (HSCL-25).

**Results:** At the eight-year follow-up, 151 (87%) patients were available and 146 completed both the 3L and 5L. Levels of missing data were the same for the two versions. Compared to the EQ-5D-5L, the 3L had significantly higher floor (pain discomfort) and ceiling effects (mobility, self-care, pain/discomfort, anxiety/depression). For these patients the EQ-5D-5L described 73 health states compared to 28 for the 3L. Shannon's indices also showed the 5L outperformed the 3L in tests of classification efficiency. Correlations with the ODI, Pain-VAS and HSCL-25 were largely as hypothesized, the 5L having slightly higher correlations than the 3L. In a multivariate regression analysis, ODI, Pain-VAS and HSCL-25 scores explained 13% more variation in EQ-5D-5L scores compared to 3L scores.

**Conclusion:** The EQ-5D assesses important aspect of health in LBP patients and the 5L improves upon the 3L in this respect. The EQ-5D-5L is recommended in preference to the 3L version, however, further testing in other back pain populations together with additional measurement properties, including responsiveness to change, is recommended.

**Trial Registration:** retrospectively registered: <https://clinicaltrials.gov/ct2/show/NCT01704677>.

## Full Text

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