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The Limitations of EQ-5D-5L for Healthcare Decision Making: A Sytematic Literature Review

Messner T[1], Oteiza F[1], **Hustad M[1]**, Bugge C[1]

[1] Oslo Economics AS, Norway.

CONTACT US

BACKGROUND

Since NICE UK designated the EQ-5D as its preferred measure of health-related quality of life in 2008, it has become the predominant instrument for deriving utilities for QALY-based cost-effectiveness analyses. Its ability to detect clinically meaningful changes over time is, thus, crucial for accurately evaluating the value of new treatments.

The EQ-5D was designed to support comparisons across disease areas rather than capture all disease-specific changes in life quality. Assessing its responsiveness across the disease area spectrum is therefore a policy relevant question.

A systematic literature review (SLR) from 2016 found that the EQ-5D-3L tool was responsive in fewer than half of the conditions studied (45%), while evidence was inconclusive in 48% and absent in 7% [1]. Given the recent adoption by NICE of the EQ-5D-5L version, we conducted an updated SLR in spring 2026 focusing on EQ-5D-5L instead.

METHODS

We searched electronic databases (Medline, Embase) in the period from 2014 – 2026. Titles/ abstracts and full texts were screened according to inclusion criteria, with study selection summarized in Figure 1.

We summarized evidence by disease area using reported standardized response mean (SRM), effect size (ES), area under the receiver-operating characteristic curve (AUROC), or other responsiveness statistics where available. Cohen's categories for magnitude of ES and SRM were used to identify small (<0.5), moderate (0.5 – 0.79), and large (≥0.8) effect sizes. AUROC values were interpreted as small (< 0.59), moderate (0.6 – 0.69) and large (0.7 – 1.0) responsiveness.

RESULTS

EQ-5D-5L responsiveness varies by population and setting (Table 1). The strongest responsiveness was found in conditions with clear physical health changes, e.g., orthopedic surgery and acute respiratory recovery. Weaker responsiveness measures were found for the areas of mental health, neurology, oncology, multimorbidity and caregivers. No studies were found for autoimmune, renal or hematological disease.

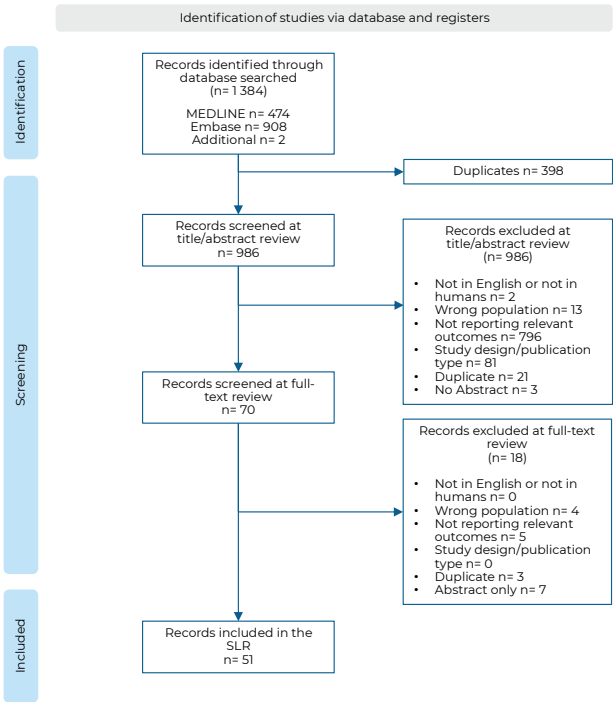
Table 1: Disease Areas & EQ-5D-5L Responsiveness

Category	Number of Studies	Responsiveness
Type 2 Diabetes	2	Small to moderate
Respiratory diseases	2	Moderate to large
Mental health & substance use	5	Small to moderate
Neurological disorders	4	Small and moderate
Musculoskeletal & orthopedic	8	Moderate to large
Cardiovascular diseases	6	Small to large
Oncology	9	Small to moderate
Post-COVID-19	2	Small
Dermatology / ophthalmology	2	Inconclusive
Multi-morbidity / general / mixed	8	Small to moderate
Caregivers	3	Small to moderate

KEY FINDINGS

EQ-5D-5L responsiveness varies by population and setting. Strongest responsiveness is found in conditions with clear physical health changes, such as orthopedic surgery and acute respiratory recovery. Weaker responsiveness is found for mental health, neurology, oncology, multimorbidity and carers. Significant gaps remain for disease areas with no clear evidence.

Figure 1: PRISMA Flow Diagram



CONCLUSION

EQ-5D-5L remains an appropriate measure for HRQoL in economic evaluations, however responsiveness varies across therapeutic areas. The strongest evidence of responsiveness is after clear clinical change, such as surgery or acute recovery, but weaker for subtle, disease-specific, or caregiver-related changes.

More longitudinal studies are needed using consistent anchors, improvement and deterioration subgroups, and population-specific thresholds for meaningful change. Importantly, evidence is lacking for a range of areas, including autoimmune, renal, gastric, hematologic and rare diseases.

For HTA decisions, EQ-5D-5L changes should be interpreted cautiously when responsiveness is limited and, where needed, complemented by condition-specific measures.

References

1. Payakachat, N., Ali, M. M., & Tilford, J. M. (2015). Can The EQ-5D Detect Meaningful Change? A Systematic Review. *PharmacoEconomics*, *33*(11), 1137–1154.
2. Full SLR reference list is available upon request due to space constraints.

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