



# Psychometrics of health-related quality of life questionnaires in bronchiectasis: a systematic review and meta-analysis

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The psychometric properties of health-related quality of life questionnaires should inform the selection of patient-reported outcomes in bronchiectasis clinical trials <https://bit.ly/3wQuSrm>

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## Abstract

**Introduction** Understanding the psychometric properties of health-related quality of life (HRQoL) questionnaires can help inform selection in clinical trials. Our objective was to assess the psychometric properties of HRQoL questionnaires in bronchiectasis using a systematic review and meta-analysis of the literature.

**Methods** A literature search was conducted. HRQoL questionnaires were assessed for psychometric properties (reliability, validity, minimal clinically important difference (MCID) and floor/ceiling effects). Meta-analyses assessed the associations of HRQoL with clinical measures and responsiveness of HRQoL in clinical trials.

**Results** 166 studies and 12 HRQoL questionnaires were included. The Bronchiectasis Health Questionnaire (BHQ), Leicester Cough Questionnaire (LCQ), Chronic Obstructive Pulmonary Disease (COPD) Assessment Test (CAT) and Medical Outcomes Study 36-item Short-Form Health Survey (SF-36) had good internal consistency in all domains reported (Cronbach's  $\alpha \geq 0.7$ ) across all studies, and the Quality of Life-Bronchiectasis (QOL-B), St George's Respiratory Questionnaire (SGRQ), Chronic Respiratory Disease Questionnaire (CRDQ) and Seattle Obstructive Lung Disease Questionnaire (SOLQ) had good internal consistency in all domains in the majority of (but not all) studies. BHQ, SGRQ, LCQ and CAT had good test-retest reliability in all domains reported (intraclass correlation coefficient  $\geq 0.7$ ) across all studies, and QOL-B, CRDQ and SOLQ had good test-retest reliability in all domains in the majority of (but not all) studies. HRQoL questionnaires were able to discriminate between demographics, important markers of clinical status, disease severity, exacerbations and bacteriology. For HRQoL responsiveness, there was a difference between the treatment and placebo effect.

**Conclusions** SGRQ was the most widely used HRQoL questionnaire in bronchiectasis studies and it had good psychometric properties; however, good psychometric data are emerging on the bronchiectasis-specific HRQoL questionnaires QOL-B and BHQ. Future studies should focus on the medium- to long-



term test–retest reliability, responsiveness and MCID in these HRQoL questionnaires which show potential in bronchiectasis.