



Bronchodilator reversibility in asthma and COPD: findings from three large population studies

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Bronchodilator reversibility is at least as common in COPD as in asthma, indicating that measures of reversibility are of limited value for distinguishing asthma from COPD; however, bronchodilator reversibility in asthma may be a phenotypic marker. <http://bit.ly/2W1oA4B>

Cite this article as: Janson C, Malinovski A, Amaral AFS, *et al.* Bronchodilator reversibility in asthma and COPD: findings from three large population studies. *Eur Respir J* 2019; 54: 1900561 [<https://doi.org/10.1183/13993003.00561-2019>].

This single-page version can be shared freely online.

ABSTRACT Bronchodilator response (BDR) testing is used as a diagnostic method in obstructive airway diseases. The aim of this investigation was to compare different methods for measuring BDR in participants with asthma and chronic obstructive pulmonary disease (COPD) and to study to the extent to which BDR was related to symptom burden and phenotypic characteristics.

Forced expiratory volume in 1 s (FEV₁) and forced vital capacity (FVC) were measured before and 15 min after 200 µg of salbutamol in 35 628 subjects aged ≥16 years from three large international population studies. The subjects were categorised in three groups: current asthma (n=2833), COPD (n=1146) and no airway disease (n=31 649). Three definitions for flow-related reversibility (increase in FEV₁) and three for volume-related reversibility (increase in FVC) were used.

The prevalence of bronchodilator reversibility expressed as increase FEV₁ ≥12% and 200 mL was 17.3% and 18.4% in participants with asthma and COPD, respectively, while the corresponding prevalence was 5.1% in those with no airway disease. In asthma, bronchodilator reversibility was associated with wheeze

(OR 1.36, 95% CI 1.04–1.79), atopy (OR 1.36, 95% CI 1.04–1.79) and higher exhaled nitric oxide fraction, while in COPD neither flow- nor volume-related bronchodilator reversibility was associated with symptom burden, exacerbations or health status after adjusting for pre-bronchodilator FEV₁.

Bronchodilator reversibility was at least as common in participants with COPD as those with asthma. This indicates that measures of reversibility are of limited value for distinguishing asthma from COPD in population studies. However, in asthma, bronchodilator reversibility may be a phenotypic marker.