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**Title:** How frequent is bronchodilator reversibility in patients with stable asthma bronchiale and chronic obstructive lung disease (COPD) receiving maintenance therapy?

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**Body:** Lung function measurement is the most important tool in the diagnosis and differentiation of obstructive lung diseases. While asthma is characterized by variable bronchial obstruction, increase of airway resistance is mostly irreversible in COPD. As response to short acting bronchodilators seems highly variable, we tested bronchodilator reversibility in stable asthma and COPD patients receiving standard care. In patients treated with stable COPD (N=77, male: female=43:57%, age: 62,0±3,5 years) or asthma (N=57, male: female=33:67%, age: 46,6±7,4 years) pre- and postbronchodilator values of bodyplethysmography measurements were analyzed using 400 ug salbutamol via easyhaler® (Buventol, Orion Pharma, Finland) during their regular out-patient visit. Smoking was significantly more common in COPD than asthma patients (90 vs. 37%; p<0.05). Airway obstruction was more severe in COPD patients as compared to asthmatics (FVC: 2,38±0,26 vs. 3,14±0,43 L; FVC%: 72,6±5,1 vs. 87,4±6,4; FEV1: 1,45±0,21 vs. 2,13±0,31 L; FEV1%: 53,5±5,2 vs. 70,3±5,5, p<0.05). Reversible airway obstruction was present in 26% of COPD and 36% of asthma patients. Average response to salbutamol was similar in COPD patients regarding FVC (FVC: 195±22 vs. 189±25 ml; FVC%: 6,34±0,71 vs. 5,89±0,77), while smaller in FEV1 (FEV1: 126±17 vs. 254±30 ml; FEV1%: 4,97±0,69 vs. 8,67±0,88; p<0,01). High proportion of COPD patients, whereas low proportion of asthmatics on regular treatment is showing ATS/ERS guideline defined reversibility using salbutamol easyhaler. Re-evaluation of diagnosis and/or therapy might follow these results.