

**Publication****Airway responsiveness to methacholine and incidence of COPD : an international prospective cohort study****JournalArticle (Originalarbeit in einer wissenschaftlichen Zeitschrift)****ID** 4484303**Author(s)** Marcon, Alessandro; Locatelli, Francesca; Keidel, Dirk; Beckmeyer-Borowko, Anna B.; Cerveri, Isa; Dharmage, Shyamali C.; Fuertes, Elaine; Garcia-Aymerich, Judith; Heinrich, Joachim; Imboden, Medea; Janson, Christer; Johannessen, Ane; Leynaert, Bénédicte; Pascual Erquicia, Silvia; Pesce, Giancarlo; Schaffner, Emmanuel; Svanes, Cecilie; Urrutia, Isabel; Jarvis, Deborah; Probst-Hensch, Nicole M.; Accordini, Simone; Ageing Lungs in European Cohorts study,**Author(s) at UniBasel** [Keidel, Dirk](#) ; [Imboden, Medea](#) ; [Schaffner, Emmanuel](#) ; [Probst Hensch, Nicole](#) ;**Year** 2018**Title** Airway responsiveness to methacholine and incidence of COPD : an international prospective cohort study**Journal** Thorax**Volume** 73**Number** 9**Pages / Article-Number** 825-832

It has been debated, but not yet established, whether increased airway responsiveness can predict COPD. Recognising this link may help in identifying subjects at risk.; We studied prospectively whether airway responsiveness is associated with the risk of developing COPD.; We pooled data from two multi-centre cohort studies that collected data from three time points using similar methods (European Community Respiratory Health Survey and Swiss Cohort Study on Air Pollution and Lung and Heart Diseases in Adults). We classified subjects (median age 37 years, 1st-3rd quartiles: 29-44) by their level of airway responsiveness using quintiles of methacholine dose-response slope at the first examination (1991-1994). Then, we excluded subjects with airflow obstruction at the second examination (1999-2003) and analysed incidence of COPD (postbronchodilator FEV<sub>1</sub> < 1; /FVC below the lower limit of normal) at the third examination (2010-2014) as a function of responsiveness, adjusting for sex, age, education, body mass index, history of asthma, smoking, occupational exposures and indicators of airway calibre.; We observed 108 new cases of COPD among 4205 subjects during a median time of 9. Compared with the least responsive group (incidence rate 0.6 per 1000/year), adjusted incidence rate ratios for COPD ranged from 1.79 (95% CI 0.52 to 6.13) to 8.91 (95% CI 3.67 to 21.66) for increasing airway responsiveness. Similar dose-response associations were observed between smokers and non-smokers, and stronger associations were found among subjects without a history of asthma or asthma-like symptoms.; Our study suggests that increased airway responsiveness is an independent risk factor for COPD. Further research should clarify whether early treatment in patients with high responsiveness can slow down disease progression.

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