Title: Relationship of smoking change with the 40-year change of the symptoms of chronic bronchitis among Eastern Finnish men

Body: Introduction: Smoking is a major risk factor of chronic bronchitis. During the past 40 years smoking prevalence and symptoms of chronic bronchitis have decreased markedly among men in Finland. Aim: To study the relationship of the decrease of smoking prevalence with the change of the prevalence of the classical symptoms of chronic bronchitis among eastern Finnish men. Methods: Study population consists of 18595 men aged 30 to 59 years who participated in the National FINRISK Study between 1972 and 2012 (total of nine surveys). Data on smoking and symptoms of chronic bronchitis: cough with sputum a) in winter mornings, b) during day and night during winter and c) during the most days and nights at least three months during a year, were collected using standardized questionnaires. Association of smoking with the symptoms, and their change, were analyzed using logistic regression models. Results: Prevalence of the symptoms decreased markedly between 1972 and 2007: from 34.2% to 14.6% (57% reduction) for morning symptom, 30.5-14.7% (52% reduction) for day and night symptoms, and 25.4-13.5% (47% reduction) for the symptoms lasting at least three months. During the same period, smoking prevalence reduced from 50.8% to 30.6%. Decrease of smoking explained 34%, 30% and 33% from the observed reduction in the symptoms, respectively. A small increase of the symptoms was observed between 2007-2012 which may be explained by the increase of smoking prevalence among older men between 2007 and 2012. Conclusions: Decrease in smoking explained one third of the reduction in the symptoms of chronic bronchitis. Tobacco control is a major tool for improvement of respiratory health.