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Title: Lung function and respiratory symptoms as predictors of mortality: The HUNT study

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Body: Background: Impaired lung function is associated with increased mortality. However, whether respiratory symptoms, independent of lung function, are associated with all-cause or cardiovascular (CV) mortality is not clear. Objective: To prospectively study associations of lung function and respiratory symptoms with all-cause and CV mortality in a general population. Methods: The study included 5519 women and 4972 men who participated in the Lung study of the Norwegian HUNT study in 1995-97. Cox regression was used to calculate adjusted hazard ratios (HRs) for all-cause and CV death associated with pre-bronchodilator percent of predicted FEV₁ (ppFEV₁), grades of COPD, and respiratory symptoms (chronic bronchitis, wheeze, and dyspnoea). Results: Lung function was inversely associated with all-cause mortality. A 10% reduction in ppFEV₁ gave a HR of 1.17 (95% confidence interval [CI] 1.09-1.25) in women and 1.23 (95% CI 1.16-1.30) in men. Compared to ppFEV₁≥100, ppFEV₁<50 was associated with a HR of 6.85 (95% CI 4.46-10.52) in women and 3.88 (95% CI 2.60-5.79) in men. Results for COPD grades corresponded to those found for ppFEV₁ levels. Of the respiratory symptoms, only dyspnoea remained associated with all-cause mortality after adjusting for lung function (HR 1.68 [95% CI 1.11-2.53] in women and 1.53 [95% CI 1.11-2.11] in men), and within levels of lung function. Overall, associations between lung function and CV mortality were weaker, and no clear relation was found for respiratory symptoms. Conclusion: Our results suggest that pre-bronchodilator lung function is a strong predictor of all-cause mortality, and that dyspnoea is associated with all-cause mortality independent of lung function.