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Title: Predictors for longitudinal change in DLCO in a community based sample

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Body: RATIONALE: Data on the change in diffusion capacity for carbon monoxide (DLCO) over time is limited. Based on a community sample we aimed to examine the change in DLCO (Δ DLCO) over a 9 year period and predictors for this change. METHODS: A Norwegian stratified general population sample comprising 1152 subjects aged 18-72 years was examined in 1987/88. Of those still alive, 830 (75%) were re-examined in 1996/97. DLCO was measured with a SensorMedics Gould automated system. Co-variables recorded included spirometry, height, weight, gender, smoking status occupational exposure and educational level. Generalized estimating equations analysis was used to examine associations between Δ DLCO and the co-variables. RESULTS: 55% were never-smokers, 18% ex-smokers and 27% smokers at baseline, and DLCO was 10,8 (SD=2,4) in men and 7.8 (SD=1,6) mmol • min⁻¹ • kPa⁻¹ in women at baseline. Mean Δ DLCO was -0,24 (SD=1,31) mmol • min⁻¹ • kPa⁻¹. Δ DLCO was related to baseline age, smoking habits, FEV1, DLCO, height and weight, but not to gender, occupational exposure or educational level. CONCLUSIONS: In a community based sample DLCO declined during a nine year follow up. Δ DLCO was negatively related to baseline age, DLCO and smoking, and positively related to FEV1, height and weight. Airborne occupational exposure to gas or dust, and educational level did not contribute to the change in DLCO.