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Title: Occupational exposure to vapors, gases, dusts or fumes doubles the incidence of physician-diagnosed COPD

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Body: Aims: To examine the incidence of COPD and to assess workplace exposure to vapors, gases, dusts or fumes (VGDF) as a risk factor, we performed a longitudinal 11-year follow-up postal survey. Methods: A random population sample of 8000 inhabitants of Helsinki aged 20 to 69 years were invited to the first postal questionnaire in 1996. Responders were invited to a follow-up survey in 2007 with 4302 (78%) answers obtained. Results: Cumulative incidence of COPD in 11 years was 3.43% corresponding to 3.17/1000/year after exclusion of those with ever COPD in 1996. No significant gender difference was found. Smoking and increasing age were strongly associated with incident COPD. The effect of smoking and workplace exposure to VGDF, either self-reported or assessed through a job-exposure matrix based on occupational title and categorized as none, low or high cumulative exposure, was additive and shown in Figure 1.

In multivariate analysis, independent risk factors for incident COPD were increasing age, current smoking OR 4.40 (2.89-6.71), previous asthma OR 2.28 (1.35-3.86), family history of COPD OR 2.08 (1.27-3.43) and workplace exposure to VGDF OR 2.14 (1.50-3.05). Conclusions: Workplace exposure to VGDF, previous asthma and family history of COPD were independent risk factors for incident COPD in addition to smoking and increasing age. Smoking and workplace exposures had an additive effect on incidence of COPD.