151 OCCUPATIONAL EXPOSURE TO ORGANIC DUST INCREASES LUNG CANCER RISK IN THE GENERAL POPULATION

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Objectives Organic dust is a mixture of particulate matter from microbial, plant or animal origin. Increased lung cancer risks have been reported for occupations with exposure to animal products (eg, butchers), while exposure to microbial components (eg, endotoxin) has been associated with decreased lung cancer risks. To date there has not been a comprehensive evaluation of the possible association between organic dust exposure and its specific constituents and lung cancer risk in the general population.

Methods The SYNERGY project pooled information on lifetime work histories and smoking from 13 300 lung cancer cases and 16 273 controls from 11 case-control studies conducted in Europe and Canada. A job exposure matrix for exposure to organic dust, endotoxin, and contact with animals or fresh animal products was applied to determine level of exposure. ORs for lung cancer were estimated by logistic regression, adjusted for age, gender, study, cigarette pack-years, time-since-quitting smoking, and ever employment in occupations with established lung cancer risk.

Results Organic dust exposure was associated with increased lung cancer risk. The second to the fourth quartile of cumulative exposure showed significant risk estimates ranging from 1.12 to 1.24 in a dose-dependent manner (p-value <.0001). This association remained after restricting analyses to subjects without a history of COPD or asthma. No association was observed between lung cancer and exposure to endotoxin or contact with animals or animal products.

Conclusions Occupational exposure to organic dust was associated with increased lung cancer risk in the general population.