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TEMPORAL AND AGE MODIFIERS OF EXPOSURE-RESPONSE RELATIONSHIP IN URANIUM MINERS

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Objectives The presentation includes an evaluation of lung cancer risk observed in three cohort studies of uranium miners in the Czech Republic, France, and Germany.

Methods The analysis is based on a total of 1567 lung cancers observed among 50 059 uranium miners during the period 1947–99. The risk, in terms of excess relative risk per unit exposure (ERR/WLM), is analysed in dependence on time since exposure, exposure rate, age at exposure, and other modifying factors.

Results and conclusions The presentation includes analyses of differences and similarities between the three cohorts when modifying factors are incorporated into the risk model. The risk coefficients in separate cohorts corresponding to low annual exposures in more recent periods are considerably consistent: ERR/WLM = 0.021, 0.022, and 0.020 in the Czech, French and German studies, respectively. The uncertainty of

the pooled estimate related to such low cumulated exposures is only 14%. The relative risk decreases with time since exposure by $\frac{1}{2}$ per decade, and simultaneously by $\frac{1}{3}$ per decade of age at exposure. The work was supported by the European Commission under FP6 (FI6R 516483).