OCCUPATION AND RISK OF LYMPHOID AND MYELOID LEUKEMIA IN THE EUROPEAN PROSPECTIVE INVESTIGATION INTO CANCER AND NUTRITION (EPIC)

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Objectives
Established risk factors of leukemia do not explain the majority of leukemia cases. Previous studies have suggested the importance of occupation and related exposures in leukemogenesis. We evaluated possible associations between job title and selected hazardous agents and leukemia in the European Prospective Investigation into Cancer and Nutrition.

Methods
The mean follow-up time for 241,465 subjects was 11.20 years (SD: 2.42 years). During the follow-up period, 477 incident cases of myeloid and lymphoid leukemia occurred. Data on 52 occupations considered a priori to be at high risk for developing cancer were collected through standardized questionnaires. Occupational exposures were estimated by linking the reported occupations to a Job exposure matrix. Cox proportional hazard models were used to explore the association between occupation and related exposures and risk of leukemia.

Results
Risk of lymphoid leukemia significantly increased for working in chemical laboratories (HR = 8.35, 95% CI = 1.58–44.24), while the risk of myeloid leukemia increased for working in the shoes or other leather goods industry (HR = 2.54, 95% CI = 1.28–5.06). Exposure specific analyses showed a non-significant increased risk of myeloid leukemias for exposure to benzene (HR = 1.15, 95% CI = 0.75–1.40; HR = 1.60, 95% CI = 0.95–2.69 for the low and high exposure categories respectively). This association was present both for acute and chronic myeloid leukemia at high exposure levels. However, numbers were too small to reach statistical significance.

Conclusion
Our findings suggest a possible role of occupational exposures in development of both lymphoid and myeloid leukemia. Exposure to benzene seemed to be associated with both acute and chronic myeloid leukemia.