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## Kidney cancer mortality and ionizing radiations among uranium miners

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**Introduction:** A significant excess of kidney cancer mortality risk was observed among French uranium miners, chronically exposed at ionizing radiations (IR). However this excess did not appear associated with radon exposure. This relationship is studied in German cohort, which is ten times larger than the French cohort.

**Method:** This cohort includes 58987 uranium miners, follow-up between 1946 and 2003. 154 kidney cancer deaths occurred in this period. Kidney cancer mortality risk attributable to IR exposure is assessed with proportional hazard model with the age in time scale.

**Results:** The mean time of follow-up was 33.8 year, with a total of 1994420 person-years. The mean age was 44.3 years and cumulative radon, gamma radiations and uranium dust exposures was respectively 241.2 WLM (Working Level Month), 40.8 mSv and 3.5 kBq.h.m<sup>-3</sup>. Kidney cancer mortality risk did not increase significantly with each cumulated exposure even after adjustment for exposure rate. Hazard Ratio obtained was for radon, 1.012/100WLM (CI95%=[0.916; 1.043]), gamma radiations, 1.000/mSv (CI95%=[ 0.998 ; 1.002]) and uranium dust, 1.003/kBq.h.m<sup>-3</sup> (CI95%=[0.9785; 1.022]).

**Discussion:** First analyses did not reveal significant link between kidney cancer mortality and IR exposure. Further analysis will be performed on several sub-population and other models will be tested.

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