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Absolute and relative risk models in cohort studies of uranium miners

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The risk of lung cancer from radon exposure is studied in occupational studies by cohort studies. Such studies allow to express the risk from exposure (X) by additive (EAR) risk model
R = R0 + a X
or by relative (ERR) risk model
R = R0 (1 + b X)
In both the models R0 is the background risk in hypothetical non-exposed population per person-year.
The term a in the first model represents the excess absolute risk (EAR) per unit exposure and person-year, whereas the term b is the excess relative risk (ERR) per unit exposure. Both terms depend on modifying factors like attained age (AA), time since exposure (TSE), age at exposure (AE) or exposure rate (XR).
The presentation will include results from cohort studies of uranium miners with modifying effects as they were reported in
BEIR IV (four cohort studies, 1988, modifying AA, TSE),
ICRP Publ 65 (7 cohort studies, 1994, modifying TSE, AE)
NIH Publ 94-3644 (11 cohort studies, 1994, modifying AA,TSE,XR),
and BEIR VI (11 cohort studies, 1999, modifying AA,TSE,XR).
The reported models included modifying effect of attained age, time since exposure, age at exposure, and exposure rate. The corresponding results in terms of lifetime risk will also be derived. The EAR models in the above studies were not reported, but could be obtained if the background rates (R0) are reported.
The presentation will include results in terms of ERR and EAR. The two models are important for lung cancer lifetime risk calculations as mentioned in ICRP Publ 115 (2007).

Přihlásit do soutěže

Přihlašuji příspěvek do soutěže o nejlepší přednášku

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