

Prevenzione primaria in radioprotezione medica: la dose personalizzata

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KEY WORDS

Fitness for work; ionizing radiation exposition; primary prevention; dose limits

SUMMARY

«Primary prevention in medical surveillance of workers exposed to ionizing radiations: personalized dose limit». Background: Italian law requires that occupational physicians for workers exposed to ionizing radiations consider carefully increased sensitivity to cancer in order to define fitness for work. Cancer risk from radiation is proportional to radiation dose, consistent with the so-called linear no-threshold hypothesis. Objectives: The aim of this paper was to estimate the annual dose limit for ionizing radiation exposure in workers hypersensitive to cancer so that the occupational risk of cancer is the same as that of reference workers. Methods: Relative risks of developing cancer in several situations are multiplied by radiation-induced cancer nominal risk coefficients (ICRP Recommendations) to give cancer sensitivity predictions. It is then possible to estimate the annual dose limit reduction. Results: Examples of annual dose limit (personalized dose limit) were estimated in several situations in which individuals are prone to cancer or are cancer survivors. Conclusions: personalized dose limits makes it possible to define fitness for work and avoid exclusion of these individuals from work.