LOW DOSES OF RADIATION LINKED TO SMALL INCREASE IN CANCER RISK

New IARC study on cancer risk of low-dose ionizing radiation.

Low-doses of radiation, such as those received in the nuclear industry, are associated with a small excess risk of developing cancer, according to an international study published online in the BMJ on 29 June 2005 and coordinated by WHO's International Agency for Research on Cancer, IARC (Risk of cancer after low doses of ionising radiation - retrospective cohort study in 15 countries, British Medical Journal Online First, accessible at http://bmj.bmjournals.com/onlinefirst_date.shtml.)

This is the largest study of nuclear industry workers ever conducted and brings together the largest body of evidence to date concerning the effects of low dose chronic exposure to ionising radiation. The study involved over 407,000 nuclear industry workers in 15 countries. The workers were employed for at least one year in nuclear power production facilities, or in specialised nuclear activities including research, waste management, and production of fuel, isotopes, and weapons.

Risk estimates per level of radiation dose were then calculated for deaths from all cancers excluding leukaemia and from leukaemia excluding chronic lymphocytic leukaemia. Factors such as age, duration of employment, and socioeconomic status were taken into account.

IARC estimates that a cumulative exposure of 100 mSv would lead to a 10% increased risk of mortality from all cancers excluding leukaemia and a 19% increased mortality from leukaemia excluding chronic lymphocytic leukaemia. On the basis of these estimates, they suggest that 1-2% of deaths from cancer among workers in this study may be attributable to radiation. They note, however, that many of the workers in this study worked in the early years of the industry when doses tended to be higher than they are today. Only a small proportion of cancer deaths would be expected to occur from low-dose chronic exposures to X- and gamma- radiation among current nuclear workers and in the general population.

The risk estimates from the study are consistent with those used for current radiation protection standards. These results suggest that a small excess risk of cancer exists, even at the low doses typically received by nuclear industry workers in this study.

Further details about the study can be found at http://www.iarc.fr/ENG/Units/RCAa1.html

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