Effects of radon and UV exposure on skin cancer mortality in Switzerland

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Skin cancer incidence in Switzerland is among the highest in the world. In addition to exposure to ultraviolet (UV) radiation, radon alpha particles attached to aerosols can adhere to the skin and potentially cause carcinogenic effects.; We investigated the effects of radon and UV exposure on skin cancer mortality.; Cox proportional hazard regression was used to study the association between exposures and skin cancer mortality in adults from the Swiss National Cohort. Modeled radon exposure and erythemal-weighted UV dose were assigned to addresses at baseline. Effect estimates were adjusted for sex, civil status, mother tongue, education, job position, neighborhood socioeconomic position, and UV exposure from outdoor occupation.; The study included 5.2 million adults (mean age 48 y) and 2,989 skin cancer deaths, with 1,900 indicating malignant melanoma (MM) as the primary cause of death. Adjusted hazard ratios (HR) for MM at age 60 were 1.16 (95% CI: 1.04, 1.29) per radon and 1.11 (1.01, 1.23) per in UV dose. Radon effects decreased with age. Risk of MM death associated with residential UV exposure was higher for individuals engaged in outdoor work with UV exposure (HR 1.94 [1.17, 3.23]), though not statistically significantly different compared to not working outdoors (HR 1.09 [0.99, 1.21],).; There is considerable variation in radon and UV exposure across Switzerland. Our study suggests both are relevant risk factors for skin cancer mortality. A better understanding of the role of the UV radiation and radon exposure is of high public health relevance. https://doi.org/10.1289/EHP825.
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