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Avoidance of sun exposure is a risk factor for all-cause mortality: results from the Melanoma in Southern Sweden cohort

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Abstract

Background: Sunlight exposure and fair skin are major determinants of human vitamin D production, but they are also risk factors for cutaneous malignant melanoma (MM). There is epidemiological evidence that all-cause mortality is related to low vitamin D levels.

Methods: We assessed the avoidance of sun exposure as a risk factor for all-cause mortality for 29 518 Swedish women in a prospective 20-year follow-up of the Melanoma in Southern Sweden (MISS) cohort. Women were recruited from 1990 to 1992 and were aged 25 to 64 years at the start of the study. We obtained detailed information at baseline on their sun exposure habits and potential confounders. Multivariable flexible parametric survival analysis was applied to the data.

Results: There were 2545 deaths amongst the 29 518 women who responded to the initial questionnaire. We found that all-cause mortality was inversely related to sun exposure habits. The mortality rate amongst avoiders of sun exposure was approximately twofold higher compared with the highest sun exposure group, resulting in excess mortality with a population attributable risk of 3%.

Conclusion: The results of this study provide observational evidence that avoiding sun exposure is a risk factor for all-cause mortality. Following sun exposure advice that is very restrictive in countries with low solar intensity might in fact be harmful to women's health.

Keywords: UV radiation; evolution; longevity; melanoma; population attributable risk; vitamin D.

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