

## Comment on 'The burden of occupationally-related cutaneous malignant melanoma in Britain due to solar radiation'

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Sir,

A recent paper in the *British Journal of Cancer* estimated that the attributable fraction for cutaneous malignant melanoma (CMM) from solar exposure due to outdoor occupation was 241 cases in 2011 and 48 deaths in 2012 (Rushton and Hutchings, 2017). They used odds ratios for CMM mortality rates for outdoor occupations from a study conducted in the United States in low sun regions (Freedman *et al*, 1997). This finding is at odds with a meta-analysis that found non-significant pooled odds of CMM for high vs low occupational sun-exposure category in eight high-latitude countries: odds ratios = 1.0 for trunk, 0.8 for limbs, and 1.2 for head and neck (Chang *et al*, 2009).

It is also at odds with a study based on cancer incidence rates by occupation in five Nordic countries (Grant, 2012). That study was an analysis of 2.8 million cancer cases for the period 1961–2005 for 54 occupational categories (Pukkala *et al*, 2009). The index of personal UVB exposure developed for this data set was the standardised incidence of lip cancer, which was less than the standardised incidence of lung cancer. That this index was appropriate was supported by the finding that it was inversely correlated with 14 types of internal cancers, in good agreement with an ecological study from the United States (Grant and Garland, 2006) and several other ecological studies from single mid-latitude countries (Moukayed and Grant, 2013). The UVB exposure index was significantly inversely correlated with CMM incidence for men. The result for women was indeterminate due to the fact that women have little risk of lip cancer due to wearing lipstick. On the basis of this study, it is very likely that outdoor workers in Britain would have lower risk of many types of cancer including CMM than indoor workers. In addition, those who spend more time in the sun enjoy better health in general and lower mortality rates (Wright and Weller, 2015; Lindqvist *et al*, 2016).

### CONFLICT OF INTEREST

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