

Reply to 'Comment on 'The burden of occupationally-related cutaneous malignant melanoma in Britain due to solar radiation'' – outdoor occupation may not be linked to increased risk of melanoma in Britain

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Sir,

Our study aimed to provide an estimate of the contribution of solar radiation exposure experienced at work to the overall burden of cutaneous malignant melanoma (CMM) in Britain (Rushton and Hutchings, 2017). The International Agency for Research on Cancer has classified solar radiation as a group 1 definite human carcinogen that causes CMM as well as other forms of skin cancer (IARC, 2012).

In his letter to the Editor, the author suggests that our choice of risk estimate was from a study whose results of a positive association contrast with those of a meta-analysis by Chang *et al* (2009) that found no association with workplace solar radiation and CMM in high latitude countries. It should be noted that Chang *et al* also found that high occupational sun exposure at low latitudes was associated with increased risk of CMM on the head and neck compared with low exposure (odds ratio (OR) = 1.7; 95% confidence interval (CI): 1.0–3.0). Among the recent studies we reviewed, in our paper, some showed a strong association of workplace exposure, for example, ORs of 3.02 (95% CI: 1.88–4.86) for melanoma *in situ* and 1.97 (95% CI 1.43–2.71) for invasive melanoma for duration of work >5 years (Trakatelli *et al*, 2016), and others no association, for example, the Australian study by Vuong *et al* (2014).

As we point out in our paper, the evidence for the role of occupational solar radiation of exposure thus remains equivocal, but given that solar radiation *per se* is an established human carcinogen, a contribution from occupational exposure seems plausible. Our results have drawn attention to the importance of solar radiation exposure generally and in several industry sectors. The study also highlights the long latency of cancers such as CMM, and therefore the need to encourage the use of sunscreens and protective clothing during outdoor work to prevent future cancers occurring.

The current literature consists of studies of with different designs and quality with often poorly characterised populations and exposure information. Personal sensors that connect remotely to mobile phones and laptops are now becoming available, and offer the potential to gather

and track environmental data such as UV in real time. New studies that take advantage of the improved technology to obtain more accurate exposure information are needed to evaluate the contribution of occupational UV exposure to CMM and other skin cancers.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

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