

Modelling personal UV exposure in a school playground

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The causative association between exposure to sunlight and the development of melanoma and non-melanoma skin cancer is well known. Melanoma skin cancers have been associated to a past history of sunburning episodes occurring early in life. Intermittent high intensity exposures to solar ultraviolet (UV) radiation affecting children occur frequently in the school playground and while high intensity exposure to solar UV radiation occurs outside of school hours, schools obligated by a duty of care to students can play a significant role in reducing episodes of UV exposure during childhood in a controlled environment. The current research reports the effective sunburning UV exposure received during school hours in a cohort of children attending a Queensland state school. A total of 148 body site measurements recorded between February and May 2008 using miniaturised polysulphone dosimeters are reported. Measurements of playground sky view recorded at 822 playground sites and three dimensional body maps of the face, neck, arm, hand and leg were used to model effective sunburning UV exposure in the 6.5 ha school playground. Effective shade, sky view and sunburning UV are provided for this school and the suitability of the developed technique to provide reasonable estimates of personal exposure in the playground environment are discussed.

Abstract of:

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