Response to Ben Gray: Sun protection policy in New Zealand

Bronwen McNoe, Anthony Reeder

We recently published findings from an ecological study of school sun protection policies.[1] In a critique of our publication,[2] Gray incorrectly states that we collected ethnicity data, but failed to utilise it in the data analysis. Our study and analyses were conducted at the school level, whereas ethnicity is a personal characteristic. It would have been possible, using Ministry of Education data, to categorise schools based on the proportion of European children on their roll, for example. However, we do not believe that this would be appropriate.

First, ethnicity does not necessarily equate with skin phototype, which is a crucial factor for skin cancer prevention. A national telephone survey of 396 randomly selected participants included 57 who identified as Māori, and these encompassed the full range of untanned skin colour from very light to very dark.[3] Some reported susceptibility to sunburn and almost 20% reported experiencing sunburn the previous summer weekend—five becoming red and tender or sore, the most severe category.[3] Admittedly that sample was small, but we mention it to highlight that assumptions about skin type cannot be made on the basis of ethnicity.[4]

Second, even schools with low proportions of European children still include sizeable numbers of those children who are most vulnerable to skin damage from exposure to UV radiation. For example, approximately one-quarter of New Zealand primary schools are listed as having less than 25% of their school roll identified as European and yet these schools still represent 15,000 children of European ethnicity (http://www.educationcounts.govt.nz/home).

New Zealand has extremely high rates and numbers of cutaneous melanomas and other skin cancers. The epidemiological evidence of the causal association of ultraviolet radiation exposure and subsequent skin cancer development is very strong. Childhood and adolescence are thought to be particularly important times both for preventing DNA damage which may initiate carcinogenesis and for establishing recommended lifetime sun protection practices.

Although in our increasingly multicultural society it would be better not to use what Gray calls a "one- size-fits-all" policy approach to sun protection, pragmatically this is the reality, given the lack of resourcing for skin cancer primary prevention. The Government currently invests only $600,000 per annum (including salaries) to fund skin cancer primary prevention programmes through the Health Promotion Agency (personal communication Health Promotion Agency 2019). The responsibility for advocating for sun protection in schools is entirely devolved to a charitable organisation with no government funding and limited resources. There is no Government investment to support sun protection, such as the provision of shade or sun protective hats in existing schools. This is despite Australian evidence that investment in their SunSmart skin cancer prevention programme is cost effective.[5]

The cost of treating this largely preventable group of skin diseases continues to escalate. Last year, funding for Keytruda to treat stage 4 melanoma, alone, cost our public health system $23.4 million.[6] The cost for treating the 90,000 cases of Keratinocytic cancers per year is unknown,[7] but likely to be substantial. In Australia, which has five times our population, the annual cost of treating skin cancer is $900 million.[8,9] Modest investment in primary prevention would help ensure that the proportional New Zealand equivalent could, increasingly

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as disease rates fell, be directed to making a valuable contribution to addressing other health issues.

Concern about vitamin D deficiency is of course an issue, but most New Zealanders can obtain sufficient vitamin D through incidental sun exposure. When this is not the case, as the Consensus Statement notes (https://www.health.govt.nz/publication/consensus-statement-vitamin-d-and-sun-exposure-new-zealand), for example among the institutionalised elderly or those who wear full-body clothing coverage as part of cultural practices, supplementation may provide the best option. A recent study of rickets among children in New Zealand found that most cases occurred among children with mothers of African, Asian or Middle Eastern origins and concluded that "*Preventative targeted vitamin D supplementation, as per existing national guidelines, was lacking in all cases reported.*"[10] That represents a failure in primary healthcare. The other side of the coin is that we cannot afford to fail to protect vulnerable young school children from exposure to harmful levels of solar ultraviolet radiation, a type 1 human carcinogen. Finally, it should be noted that the SunSmart schools programme operates in terms 1 and 4 when the risk of skin damage is highest and school boards endeavour to develop appropriate policies in consultation with their communities.

Competing interests:
Nil.

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