

About the research:

In Aotearoa New Zealand, skin cancer is by far the most common cancer type (O’Dea.2009). Annually, nearly 500 New Zealanders die (MOH.2016) and more than 90,000 are diagnosed with a skin cancer (Sneyd et al. 2018). Excessive exposure to ultraviolet radiation (UVR), whether from sunlight or from artificial sources, such as sunbeds, can cause skin cancer (Armstrong. 2004). Aotearoa and Australia have the world’s highest mortality and incidence rates for cutaneous malignant melanoma (melanoma), the deadliest of the skin cancers (World Health Organisation, 2020). As Aotearoa has similar rates of skin cancer to Australia, a rough estimate, adjusting for population size, would suggest that the treatment cost in Aotearoa is likely to be in the vicinity of \$180 million. The risk of developing skin cancer can be mitigated by minimising exposure to UVR, with more than 90% of skin cancers considered preventable by reducing excessive exposure to UVR throughout the life cycle (Armstrong 1977) (PHANZ.2018) (Hore et al.2010). Environmental shade, whether built or natural, is one of the most effective measures to achieve protection from UVR. It provides an equitable opportunity for sun protection for all New Zealanders, regardless of their socioeconomic position (CWC strategic plan for UV protection to reduce skin cancers 2020-2025).

With climate change the number of people effected is expected to increase substantially, with one study predicting an 11% increase with a 2 °C (3.6°F) increase in ambient temperature by 2050. Current approaches to reduce skin cancer rely on building public awareness of the dangers, and of individual sun protection measures (e.g., wearing hats and applying sunscreen). However, studies indicate they provide inadequate protection to reduce the incidence of cancer. While landscape design can help prevent overexposure, the focus has only been on shade provision, which has similarly been found to be inadequate to ensure protection. Studies indicate many people are not using shaded areas, and even if they do, they are not adequately protected from UVR exposure. For people to be protected in open spaces, four key design objectives need to be met: 1) protect from direct UVR overexposure, 2) protect from indirect UVR overexposure, 3) ensure thermal comfort, and 4) provide attractive activities or play opportunities.

Through literature review and modelling, this research involves the development of design guidelines in support of sun protection behaviour in public schools across New Zealand located in different climate zones.

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CWC strategic plan for UV protection to reduce skin cancers 2020-2025

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