Information topic	Details
Indicator name	**Melanoma deaths**
Domain and topic	UV Exposure: Melanoma
Indicator definition and units	Mortality rates for melanoma, per 100,000. Melanoma is defined as melanoma of the skin (ICD-10 AM C43).
Data source	New Zealand Mortality Collection, Health New Zealand–Te Whatu Ora.
Numerator	Number of melanoma deaths (ICD-10-AM C43). Non-residents have been excluded from the analysis.
Denominator	Population estimates (mid-year), prepared by Statistics New Zealand.
Methodology	**Confidence interval:** 95% confidence intervals were calculated based on the methodology outlined in APHO (2008). Confidence intervals are presented as error bars on graphs. **Interpreting graphs (including DHB graphs):** Results are presented by year, sex, age group, ethnic group, NZDep2018, urban/rural 2018 (UR) classification, and district health board (DHB). Prioritised ethnicity has been used, in the following order: Māori, Pacific, Asian, European/Other. Rates are per 100,000 people and have been age-standardised to the WHO world standard population (Ahmad et al 2001), to account for different age structures of populations. Crude rates are suppressed for counts less than 5 or populations less than 30, due to unreliability of the estimate with small numbers. Age-standardised rates are suppressed for overall counts less than 20, or if any age-band of the calculation has a population less than 30, due to unreliability of the estimate with small numbers. When comparing groups of varying population sizes, differences that involve small groups may not be statistically significantly different, compared with similar differences for larger groups. This is due to a higher variability associated with the rate of the small group. For graphs by health district (formerly District Health Boards), tests for statistical significance with the national rate have used adjustments for multiple comparisons. All comparisons made are conservative (ie, the p value is slightly overstated) because the

	New Zealand estimate contains the DHBs, so the New Zealand and every DHB estimate are positively correlated. This means that in some instances, we might be slightly less likely to find a significant difference that exists.
Time period and time scale	Annual from 2001–2021.
Population coverage	New Zealand usually resident population of all ages.
Spatial Coverage	National
Measures of frequency	Results are presented by year, sex, ethnic group, age group, NZDep2018, Urban-Rural category and district. Urban/rural classification uses the IUR2018, with the categories 'major urban areas', 'large urban areas', 'medium urban areas', 'small urban areas', and 'rural/other'. IUR2018 was assigned using the health domicile code of individuals in the Mortality Collection, and in cases where the domicile code overlapped an IUR2018 boundary, meshblock information from the linked Health Service User (HSU) population dataset was used to give a more precise IUR2018 category. In a small number of cases where the domicile code overlapped an IUR2018 boundary and there was insufficient HSU meshblock data to use, we assigned the individual to the most probable IUR2018 category based on land area and population in the domicile code.
Limitations of indicator	The reported year of death is the year of death registration, not necessarily the actual year of death. Information surrounding survival rates compared to mortality are not readily available.
Related indicators	Daily UV levels Melanoma cancer registrations Non-melanoma skin cancer deaths
References	Ahmad O B, et al. 2001. *Age Standardization of Rates: A New WHO Standard (Technical Report).* GPE Discussion Paper Series: No. 31. Geneva: World Health Organization. APHO. 2008. *Technical Briefing 3: Commonly used public health statistics and their confidence intervals.* York, UK: Association of Public Health Observatories. Atkinson J, Salmond C, & Crampton P. 2020. NZDep2018 index of deprivation. Wellington: Department of Public Health, University of Otago.