

Health Reports: Sun exposure and melanoma skin cancer

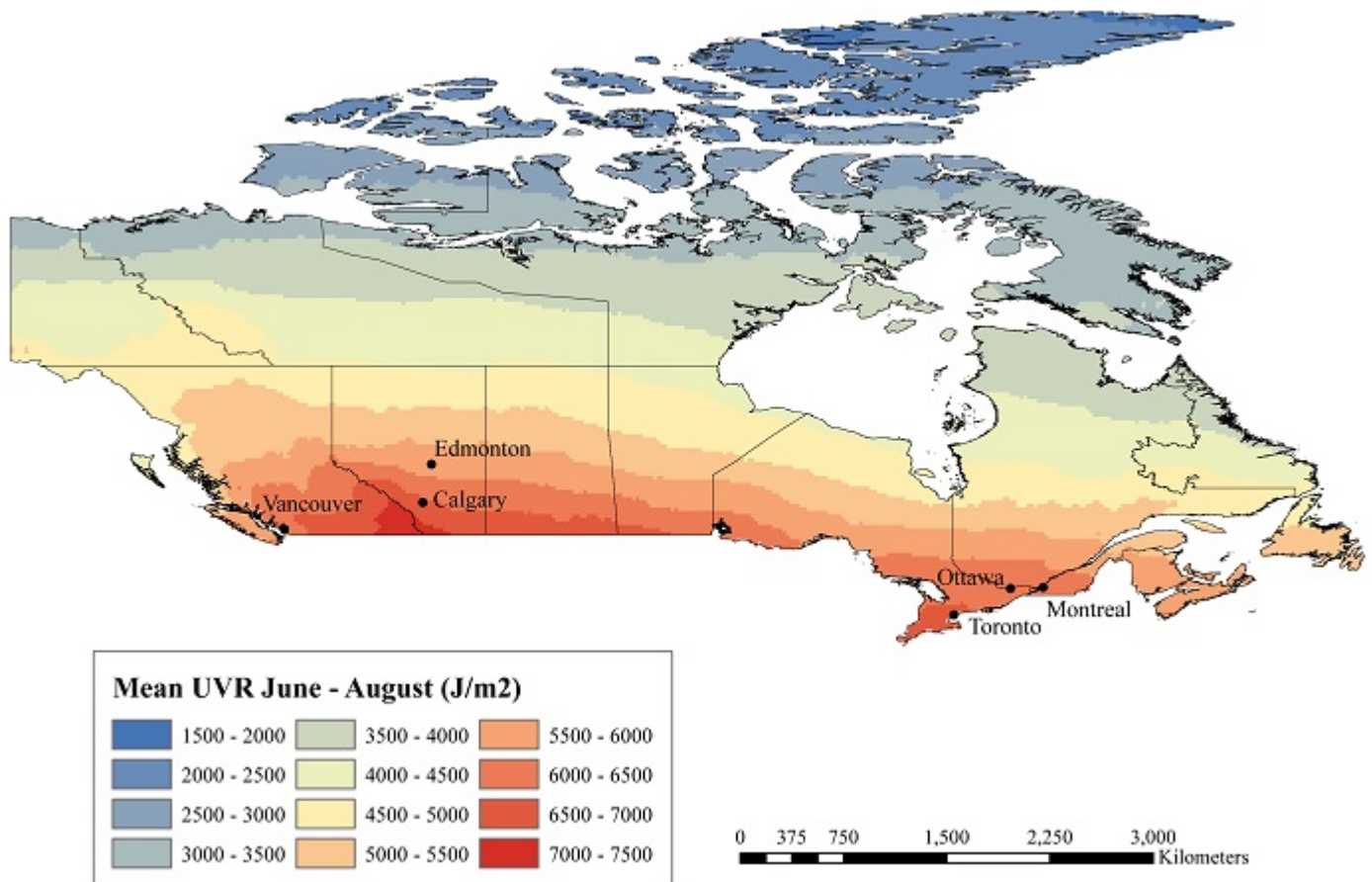
Released at 8:30 a.m. Eastern time in *The Daily*, Wednesday, May 17, 2017

For the first time, Canadians' risk of melanoma (skin cancer) related to summer ultraviolet radiation (UVR) levels where they live has been measured. Generally speaking, the risk of developing melanoma is higher for men than for women. Women living in regions with higher UVR levels are doing more than men are to protect themselves against the harmful effects of sun exposure. UVR levels are highest in the southernmost latitudes and highest altitudes.

These are some of the findings from two studies released in *Health Reports*, which provide new insights into Canadians' risk of developing skin cancer based on UVR exposure and steps they are taking to protect themselves. Links between UVR and rates of skin cancer have been found in countries close to the equator, but have not been studied in Canada until now.

The rate of melanoma skin cancer in Canada continues to rise, particularly among men. Melanoma skin cancer is one of the 10 most common cancers diagnosed in Canada. The intensity of UVR is highest in the southernmost parts of the country and has increased over the past few decades. Exposure to UVR and having a history of sunburns puts individuals at higher risk for skin cancer.

Map 1 – Mean ultraviolet radiation for June through August, Canada, 1980 through 1990



In the first study, 2.6 million Canadian adults aged 25 to 89 who responded to the 1991 Census were followed over an 18-year period for a diagnosis of melanoma skin cancer. Over this time, more cases were identified among men (4,900) than women (3,900).

The risk of skin cancer increased for those living in regions of higher summer UVR exposure. For example, residents of Toronto had a 16% higher risk than residents of Montréal, and residents of Calgary had a 38% higher risk than residents of Edmonton.

The risk of melanoma skin cancer related to UVR was also higher among people with outdoor occupations, those in lower income households and those who had not completed secondary school.

Canadians can do a lot to protect themselves against the harmful effects of UVR exposure by limiting their time in the sun, using sunscreen and wearing protective clothing to avoid sunburns.

The second study looked at responses provided by Canadians 18 years of age and older, from six provinces, to the Canadian Community Health Survey between 2005 and 2014. The results showed that 41% of Canadians reported spending less than 2 hours in the sun between 11 a.m. and 4 p.m. on a typical summer day (weekend or day off). However, approximately 17% reported spending four or more hours in the sun, with men more likely to do so than women.

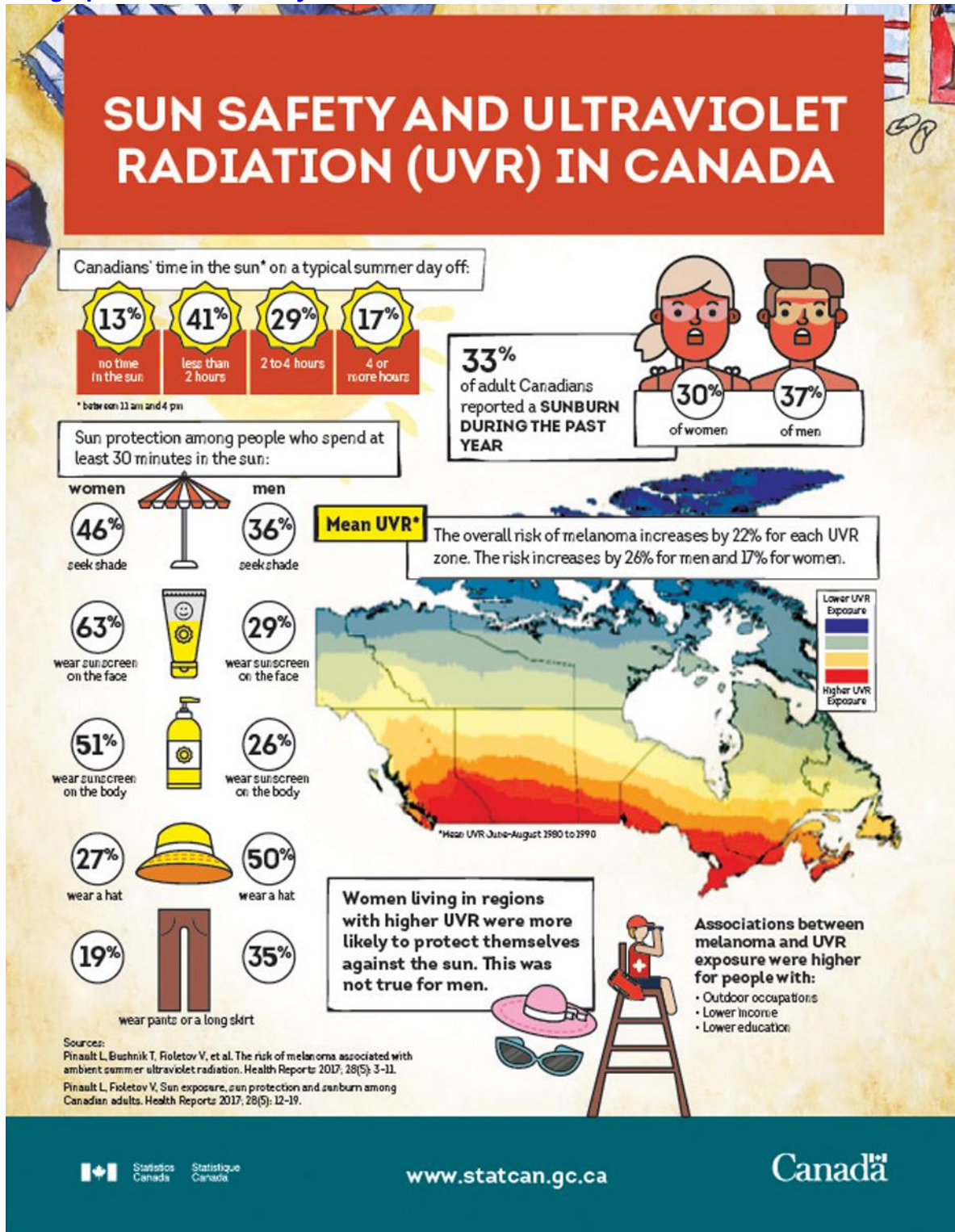
Among those who spent at least half an hour in the sun on a typical summer day, the most common protections were applying sunscreen to the face (45%) and body (38%), seeking shade (41%) and wearing a hat (39%). Women were more likely than men to apply sunscreen to the face (63%) and body (51%), and to seek shade (46%). Men were more likely than women to wear a hat (50%) and to wear protective clothing (35%).

Women living in regions with higher summer UVR levels were more likely to protect themselves against the sun than women residing in regions with lower UVR levels. This association was not observed among men.

Longer time spent in the sun was associated with a higher risk of sunburn. One-third of the respondents reported having a sunburn in the past year. The rate was higher among men (37%) than women (30%).

To learn more about sun safety, visit the [Health Canada website](#).

Infographic 1 – Sun Safety and Ultraviolet Radiation in Canada



Note to readers

Ultraviolet radiation (UVR) data were derived from a statistical model developed by Environment Canada. Modelled UVR data were linked to members of the 1991 Canadian Census Health and Environment Cohort (CanCHEC), a dataset comprising 2.6 million census respondents aged 25 to 89 who were followed for melanoma diagnosis.

CanCHEC is formed through linkage of respondents to the 1991 Census long-form questionnaire with the Canadian Mortality Database, the Canadian Cancer Registry, the Canadian Cancer Database, and the Historical Tax Summary File. Because most exposure to UVR in Canada occurs in the summer, the 2.6 million CanCHEC members were linked to the modelled mean daily UVR for June through August during the 1980-to-1990 period and tracked for melanoma diagnosis over 18 years (1992 to 2009).

Data on sun exposure and protective behaviour are from an optional Sun Safety Module of the Canadian Community Health Survey, which was selected by six provinces (Prince Edward Island, Nova Scotia, New Brunswick, Quebec, Saskatchewan, and Alberta) during various years from 2005 to 2014. The module contained questions about sunburn, time spent in the sun, and sun protection. A total of 53,130 respondents aged 18 or older answered the module.

Respondents were asked if they had had a sunburn on any part of their body in the past 12 months, and the amount of time (hours) between 11:00 a.m. and 4:00 p.m. that they spent in the sun on a typical summer weekend or day off. Respondents who reported at least 30 minutes in the sun were asked about protective measures: seeking shade, wearing protective clothing and applying sunscreen. These respondents were linked to an ambient UVR dataset representing the June-to-August mean.

Definitions, data sources and methods: survey number [3226](#).

"The risk of melanoma associated with ambient summer ultraviolet radiation" and "Sun exposure, sun protection and sunburn among Canadian adults" are available in the May 2017 online issue of *Health Reports*, Vol. 28, no. 5 ([82-003-X](#)).

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For more information, or to enquire about the concepts, methods or data quality of this release, contact us (toll-free 1-800-263-1136; 514-283-8300; STATCAN.infostats-infostats.STATCAN@canada.ca).

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