

App an effective tool to record sun exposure

April 26 2018



Credit: Queensland University of Technology

A smartphone app is an accessible tool that reliably measures the amount of exposure to the sun's skin-damaging ultra-violet radiation, a QUT

study has found.

Research fellow Dr Elke Hacker from QUT's Institute of Health and Biomedical Innovation developed an app to test its effectiveness as a sun exposure measuring tool to promote sun-smart behaviour.

Dr Hacker said the finding suggest a smartphone app is a good platform for determining sun exposure, and thanks to accessibility and low cost it could be an effective way to assess [skin cancer prevention](#) programs, particularly in younger age groups.

The importance of skin [cancer](#) prevention for young people is reflected in the latest Australian Institute of Health and Welfare report Cancer in adolescents and young adults in Australia. It shows that in 2010-2014 the skin cancer melanoma was the most commonly diagnosed cancer among young Australians aged 15 to 24, accounting for 15 per cent of all cancers diagnosed.

"Sunburn shows you have received a damaging dose of sunlight and ultra-violet radiation (UVR), and sunburn increases the risk of melanoma," Dr Hacker said.

"The effectiveness of programs that look to raise [skin cancer](#) awareness and promote prevention are largely assessed by recording [sun exposure](#) behaviours.

"Our study shows a [smartphone app](#) to which people input their data is a reliable way to collect information about their sun and UVR exposure."

Dr Hacker said physical activity data was collected in the study to evaluate whether focusing on sun avoidance may result in unhealthy reductions in physical activity.

She said study participants under-reported their low-intensity physical activity compared to what was captured by the accelerometer measuring devices they wore. This could be because the devices detected both incidental and purposeful [physical activity](#), yet people didn't consider things like being out and about walking as activity, or they didn't remember to record it.

Dr Hacker is conducting a number of other studies testing innovative technologies designed to keep people sun safe and avoid sunburn, including an app which uses artificial intelligence (AI) to provide personalised advice relevant to a person's [skin](#) type, the weather, environment, UV index, and when to reapply sunscreen.

More information: Elke Hacker et al. Capturing Ultraviolet Radiation Exposure and Physical Activity: Feasibility Study and Comparison Between Self-Reports, Mobile Apps, Dosimeters, and Accelerometers, *JMIR Research Protocols* (2018). [DOI: 10.2196/resprot.9695](https://doi.org/10.2196/resprot.9695)

Provided by Queensland University of Technology

Citation: App an effective tool to record sun exposure (2018, April 26) retrieved 26 April 2024 from <https://medicalxpress.com/news/2018-04-app-effective-tool-sun-exposure.html>

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