Fingertip-sized sensors to prevent skin cancer

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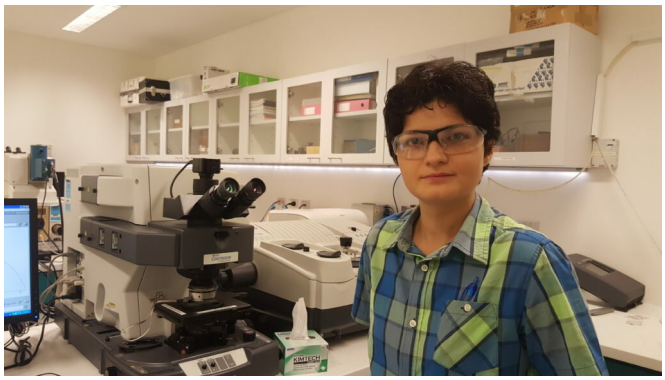

Noushin is looking to trial her UV sensor in the field by 2022. Credit: Dr Leila Khanjani

Between your morning commute, coffee break, playing with the kids, or mowing the lawn—how do you know when you've had too much sun?

A fingernail-sized sensor to accurately measure UV dosage absorbed by the skin is being developed by scientists at Macquarie University, which they're hoping can be worn as a wearable warning device.

"Ultraviolet radiation is around us every day, even in the winter or on cloudy days. UV light increases the synthesis of vitamin D in the skin, which is an essential compound for many metabolic processes ," says Dr. Noushin Nasiri, a material engineer at Macquarie University who is leading the project. Noushin was at University of Technology Sydney until September 2018.

"But it's also the most important environmental factor in developing skin cancer. Every time we overexpose our skin to radiation from the sun, we increase our risk of developing skin cancer."

Skin cancers account for around 80 per cent of all newly diagnosed cancers every year in Australia, and the majority of skin cancers are caused by exposure to the sun.

The device is working accurately and can measure the UV dosage absorbed by skin, distinguishing between UVA and UVB (which cause different types of damage), Noushin says.

Noushin is working to make the device wearable so it can be easily integrated into clothes, swimming suits, watches and sunglasses to measure a person's exposure to UV light from the sun.

Noushin hopes it will be ready for field testing by 2022.

Provided by Freshscience