

Singapore

How much sunlight do you need to reduce risks of myopia? A new sensor will tell you

Light exposure and light therapy have also shown to produce positive effects for the elderly who are at risk of developing cognitive decline and dementia.



By Primary 6, over 55 per cent of children are already myopic. (Photo: Unsplash/Pan Xiaozhen)

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“We have a sensor or light logger that tracks light exposure and does this over the course of the day. So, we get very accurate readings of the light that people are exposed to,” Professor Manuel Spitschan from the Technical University of Munich (TUM), co-principal investigator of the project, told CNA’s Singapore Tonight.

The data from such tracking will be uploaded onto an app called LightUP, which parents can use to find out if they need to expose their children to more sunlight.

The project is led by Tumcreate, the research platform of TUM’s campus in Singapore and the National University of Singapore’s (NUS) Yong Loo Lin School of Medicine.

In a joint media statement, NUS and Tumcreate said that more than 80 per cent of young adults in Singapore are affected by myopia, which is the leading cause of irreversible blindness worldwide.

Spending time outdoors regularly and exposure to bright light like sunlight are strong preventive measures to reduce the incidence of myopia, the statement noted. However, it remains a challenge for parents to ensure their children get adequate time under such light, it added.

CHILDREN NEED MORE OUTDOOR TIME

Stressing the need for intervention, Assistant Professor Raymond Najjar, NUS' co-principal investigator, said myopia onset in Singapore is very early.

Asst Prof Najjar, who is deputy research director at the Department of Ophthalmology, noted that by Primary 6, over 55 per cent of children here are already myopic.

"We want to try to delay or try to stop this onset of early myopia and one of the best ways is to get kids exposed to the outdoors, take them outdoors more often," said Asst Prof Najjar.

Studies have shown that children would need around two hours of outdoor time per day to be protected sufficiently against myopia, he added.

The aim is for the app to help parents build and change their children's behaviour, and then keep at it even without getting nudged.

The project will have two studies that will begin in 2025 – one involving children between the ages of seven and 10, and another involving seniors whom the study also seeks to help.

HELPING SENIORS

Light exposure and light therapy have shown to produce positive effects for the elderly who are at risk of developing cognitive decline and dementia, Prof Spitschan noted.

"As of now, there are no established guidelines or recommendations for healthy light exposure for senior citizens in Singapore or globally," he said.

"This research project aims to empower users to take a proactive approach to take care of their well-being by leveraging light exposure, which is an element that is available in abundance to ease age-related alterations in sleep, cognition, alertness and mood."

The media statement explained that the use of high-intensity light, sunlight or blue-enriched white light have shown to stimulate the neurobiological pathway that supports normal circadian rhythms, which helps improve sleep quality, alertness, cognition and mood – functions that change with increasing age.

The three-year research project from 2023 to 2026 is funded by the National Research Foundation.

Source: CNA/ja(dn)

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