

Using wearables to help detect depression

(Ref: Nanyang Technological University)

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A team of scientists from **NTU Singapore** has developed a predictive computer programme that could be used to detect individuals who are at increased risk of depression.

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In trials using data from groups of depressed and healthy participants, the programme achieved an accuracy of 80 per cent in detecting those individuals with a high risk of depression and those with no risk.

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Powered by machine learning, the programme, named the Ycogni model, screens for the risk of depression by analysing an individual's physical activity, sleep patterns, and circadian rhythms derived from data from wearable devices that measure his or her steps, heart rate, energy expenditure, and sleep data.

Depression affects 264 million people globally and is undiagnosed and untreated in half of all cases, according to the World Health Organisation. In Singapore, the COVID-19 pandemic has led to increased concerns over mental well-being. A new study by Singapore's Institute of Mental Health pointed to a likely increase in mental health issues, including depression related to the pandemic.

Activity trackers are estimated to be worn by nearly a billion people, up from 722 million in 2019.

To develop the Ycogni model, the scientists conducted a study involving 290 working adults in Singapore. Participants wore Fitbit Charge 2 devices for 14 consecutive days and completed two health surveys, which screened for depressive symptoms, at the start and end of the study.

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