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DETECT Study: Fitness Trackers Can Predict COVID-19

The first six weeks data from the DETECT study show that wearable fitness devices can improve public health efforts to control COVID-19.

The DETECT study is a landmark initiative that was launched in March 2020. The study uses a mobile research app called MyDataHelps to collect smartwatch and activity tracker data from study participants. The app also gathers self-reported symptoms and diagnostic test results. 30,529 individuals were enrolled in the study as of June 2020.

Early findings from the study show that wearable devices like Fitbit can help cases of COVID-19 by evaluating changes in heart rate and sleep and activity levels. In addition, self-reported symptom data can also facilitate better diagnosis. The app can thus be considered a validated digital signal for COVID-19 and could potentially be used to prevent outbreaks from spreading further. This could be a very useful strategy since a large number of people today have a wearable tracker or smartwatch.

The app enables researchers to see when study participants fall out of the normal range for key indicators such as sleep and heart rate. Any deviation from the normal average could indicate a sign of infection or illness. Specifically for the purpose of identifying COVID-19, the researchers reviewed data from those who reported developing symptoms and were tested for the novel coronavirus. This helped them pinpoint specific indicators that would suggest COVID-19.

One of the biggest challenges the world is facing today is limiting the spread of COVID-19. This can be achieved if clinicians were able to quickly identify, trace and isolate patients who were infected with coronavirus. In particular, the early identification of pre-symptomatic and asymptomatic patients could really improve the efficiency with which COVID-19 can be diagnosed and curtailed and the decision making process for healthcare providers.

In this study, health data from wearables and activity trackers were used to identify whether a person reporting symptoms was likely to be infected with coronavirus. The prediction accuracy was nearly

80%, which is much better than reported by other models using self-reported symptoms.

Of the total study participants, 3,811 reported symptoms. 54 participants tested positive for COVID-19 while 279 participants tested negative. The two most significant factors that facilitated accurate prediction included more sleep and less activity than an individual's normal levels.

This predictive model could be useful within the clinical setting because it is already clear that common screening practices used for COVID-19 can miss pre-symptomatic and asymptomatic cases. Also, with an overload on testing and delayed results, this type of predictive app could offer real-time insights that could help stop the spread of the virus.

The DETECT study is ongoing and is actively recruiting more participants. Researchers also plan to incorporate data from healthcare workers who are at a high risk of infection. More findings are to come but initial results look promising and indicate potential of this digital predictive model.

Source: Scripps Research

Image Credit: iStock

Published on : Mon, 2 Nov 2020