# Brazilian startup develops technology for monitoring of patients with suspected COVID-19

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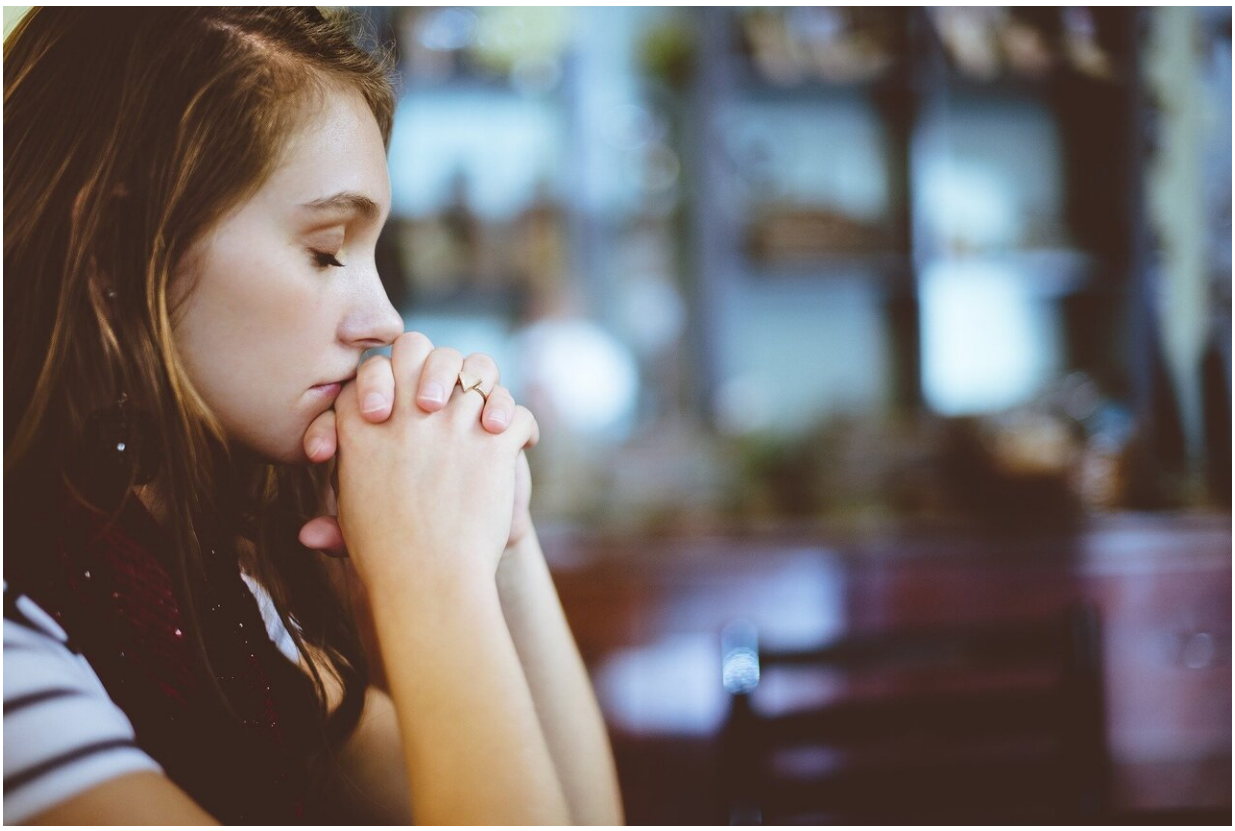

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Developed by Biologix, a startup headquartered in São Paulo, Brazil, researchers have developed a sleep apnea home diagnostic and

monitoring system based on Internet of Things technology that can be used for the remote monitoring of individuals with suspected COVID-19 infection or mild symptoms of the disease. The system can also be used to recommend transfer to a hospital if the patient's clinical signs worsen.

Two private hospitals in São Paulo, the epicenter of the pandemic in Brazil, will test the technology. The development of the innovation was supported by FAPESP via a project funded under the PIPE/PAPPE Grant program, a partnership between FINEP, the Brazilian government's innovation agency, and FAPESP via its Innovative Research in Small Business (PIPE) program.

"Several devices are already available to monitor patients with suspected COVID-19 or mild symptoms, but they're based on the patient's subjective responses. They don't monitor clinical signs as our system does," Tácito Mistrorigo de Almeida, CEO of Biologix, told Agência FAPESP.

The physical part of the system is a cordless portable sensor placed on the patient's index finger that captures oxygen saturation and heart rate data. The data are collected in real time by a free smartphone app available for the Android and iOS platforms. The program automatically sends the data to the cloud and to a control panel operated by the medical team responsible for monitoring each patient.

If the system shows a drop in oxygen saturation, the medical team contacts the patient or on-site carer. Low oxygen saturation is one of the main warning signs of a deteriorating condition in the case of both COVID-19 and sleep apnea, in which breathing repeatedly stops and starts.

The team advises immediate hospitalization if, in addition to the data showing a fall in oxygen saturation and heart rate, the patient or carer

reports fever, a cough, fatigue and difficulty breathing, which are typical symptoms of infection by SARS-CoV-2.

"The system enables the monitoring staff to refer patients to a hospital at the right time, lowering the risk of contagion by interaction with others and, above all, protecting healthcare workers," Almeida said.

The technology can also be used by hospitals, health management organizations and insurers to monitor not only patients with suspected COVID-19 or mild symptoms of the disease but also older people and other members of the groups most at risk of developing a severe form of the disease.

"In hospitals, the system can be used to monitor noncritical COVID-19 patients and leave intensive care unit beds free for critical patients," Almeida said.

Provided by FAPESP