

IIT-Madras researchers develop portable screening device to assess risk of cardiovascular diseases

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CHENNAI: Researchers at the Indian Institute of Technology - Madras (IIT-M) have developed a portable device as compact as digital blood pressure monitors to assess health and age of blood vessels and thus help in early screening for cardiovascular diseases.

At a time when cardiac events are on an increase, the device called Artsens can be used in routine medical examination by even non-experts to assess and predict vascular health, the researchers said. Developed at the Healthcare Technology Innovation Centre (HTIC) at IIT-Madras, it is a non-imaging proprietary probe attached with a computing platform and is at an advanced TRL level (technology readiness level).

"We are at advanced stages of conversation with a player in the US market, but it's not exclusive and we are thus discussing with parties

across medical tech space, fitness space and others," Dr Jayaraj Joseph, assistant professor, Department of Electrical Engineering, IIT-Madras, and the research lead of Artsens told TOI.

"It has been assessed on more than 5,000 human subjects, and is ready for technology transfer and commercialization after extensive testing," he added.

It comprises pressure cuffs to be affixed at the upper arm and thighs and a probe applied to the surface of the neck to detect the carotid artery. It measures carotid arterial stiffness, aortic pulse wave velocity and central blood pressure. The tech already has five utility patents in the US, European Union and India and 10 design patents and awaits awarding of 28 patents in various jurisdictions.

The idea is to detect cardiovascular weaknesses at an early-stage and prevent people from becoming patients adding to our stressed healthcare systems, Joseph said.

The commercial application of Artsens is in medical device companies engaged in cardio diagnostics, in large scale vascular health screening camps by social bodies such as NGOs, and in the fitness sector among companies that leverage tech to track fitness indicators of clients and devise wellness plans.

Artsens is already being used by researchers in the Netherlands and several hospitals in India.