IIT-M researchers develop non-invasive device to assess heart vessel health

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The device, called Artsens, has been approved for clinical trails in India, the United States and Europe. | Photo Credit: Special arrangement

Researchers at the Indian Institute of Technology Madras (IIT-M) have developed a device to screen for cardiovascular diseases. The device, called Artsens, can be used by non-experts for routine medical examinations.

The device has been developed by the Healthcare Technology Innovation Centre at the institute and has been assessed on over 5,000 people. The institute's team plans to conduct over a million vascular screenings annually.

Jayaraj Joseph, assistant professor in the Electrical Engineering Department, who led the research said, "Reliable assessment of vascular health requires a measurement to be performed directly on the blood vessel walls and not on the skin surface. Our device can assess the effect of molecular and protein-level changes in the vessel wall caused due to disease and ageing by measuring the material property in a completely non-invasive and accurate manner."

The device would be accessible to a large population in clinical and non-clinical settings, such a gym or healthcare centre, he added.

The technology, which has five utility patents in the United States (U.S.), the European Union and India and 10 design patents, is ready for transfer and commercialisation. Artsens, a non-invasive device, has been approved for clinical studies in India, the U.S. and Europe. The All India Institute of Medical Sciences (AIIMS), New Delhi, is currently carrying out an extensive clinical study. They are also using it to study the physiological underpinnings of arterial ageing in various disease conditions.

Scientists in Radboud University Medical Centre, the Netherlands, are also using Artsens to investigate the association between arterial age, physical (in)activity and cardiovascular events. The institute's research team has conducted simulation studies and randomised experiments on animals and human beings to prove its efficacy and meet the standards required of biomedical diagnostic devices.

For more information about Artsens and the research, visit: http://artsens.tech