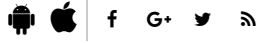


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0 **Spot cardio disease years ahead**

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Do you want to know if you are at the risk of suffering a cardio-vascular disease (CVD), five or 10 years down the line? Healthcare Technology Innovation Centre (HTIC) of IIT-Madras has developed a device that which can give quick and easy evaluations of arterial stiffness, an indicator for CVD.

Scientists at the centre have developed the device, named ARTSENS, which is not only smaller than the conventional equipment that uses ultrasound imaging but is also low-cost. "The existing ones could cost about ` 15 to 40 lakh, but new device is around ` 1 lakh as the volume of the machine is less. The cost of the screening can also come down as the number of subjects screened will be more. The device also requires minimal operating skills," said Mohanasankar Sivaprakasam, Head, HTIC.

ARTSENS, which is a image-free technology that non-invasively measures the stiffness of the carotid artery in an automated manner, utilises a high frequency ultrasound transducer to capture artery wall dynamics. The transducer exposes the region around the carotid artery to ultrasonic waves and receives the echoes reflected by different anatomical structures. Intelligent signal processing algorithms, based on advanced mathematical methods, allow accurate identification of arterial structures and tracking of wall motion to measure arterial distension, with no operator inputs. Robust artery detection, wall-tracking and online distension wave analysis techniques, enable the device to give a measurement of arterial stiffness within a minute of placing the probe over the neck of the subject.

A prototype of ARTSENS was tested at MediScan Systems on 106 subjects while the validation study was conducted in Thambiran Heart and Vascular Institute and at Ramachandra University. It was compared with the measurements with the existing device that uses pulse wave velocity. "A clinical development plan and a protocol has to be developed before clinical trials. It'll take another five to seven years before it reaches the bedside," said TS Rao, senior advisor, Department of Biotechnology, Ministry of Science and Technology.

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