

Small box holds big promise in cardiac care

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For a non-descript box it wields a mighty name and even more impressive possibilities for people with heart disease. Called the AngioDefender, the machine - no bigger than a shoebox - holds much promise in the ability to personalize cardiac care, say researchers at Lawson Health Research Institute, the research arm of St. Joseph's Health Care London.

St. Joseph's Hospital in London is the only Canadian [cardiac rehabilitation](#) centre testing the AngioDefender, a non-invasive tool that can assess the [health](#) of [blood vessels](#) by using a simple blood pressure cuff. At the recent Canadian Cardiovascular Congress in Toronto, Lawson researchers presented findings of their study, which assessed the feasibility and reliability of the AngioDefender in patients undergoing cardiac rehabilitation.

"Right now everyone basically gets similar treatment in terms of maximizing therapy based on risk factor profiles," says Dr. Neville Suskin, Lawson scientist and medical director of St. Joseph's Cardiac Rehabilitation and Secondary Prevention Program. "With this machine, if it does what we hope it will do, it gives us insight into a person's vascular health so that we can know if the treatment is working and adjust and individualize their care."

Also key, says Dr. Suskin, is the machine can be used by any medical professional in any doctor's office.

The AngioDefender system, manufactured by Everist Health, measures

the health of the endothelium—the interior lining of blood vessels. Using a blood pressure cuff, the device runs through a series of inflations and deflations to analyze the endothelium's response to changes in blood flow. When the blood pressure cuff is inflated, blood flow decreases and stops. When the [blood pressure](#) cuff deflates, [blood flow](#) increases and the main artery in the arm responds by getting bigger (dilating). How well it dilates is a sign of endothelial (vascular) health.

Using a specially designed data analysis algorithm, the AngioDefender system produces each patient's "flow-mediated dilation" score. When the information is combined with the patient's other risk factors, it calculates the patient's vascular age. The whole process takes 15 to 20 minutes.

"The ability for a health professional to obtain a measure of vascular health in such a straightforward manner is very novel" says Dr. Suskin, whose team has found that the machine is feasible to use in a busy cardiac rehabilitation practice setting. "It doesn't take long, patients tolerate it, and they are also very keen to know their [vascular health](#) as determined by this machine."

If successful, the device may become part of the standard screening to assess early-stage cardiovascular disease and atherosclerosis, and an innovative way to monitor the effectiveness of treatment.

Provided by Lawson Health Research Institute

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