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Surgical tool peers into heart non invasively

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Cardiologists may soon be able to place sensitive electronics inside patients' hearts non invasively enabling more efficient diagnosis and treatment of irregular heart beats known as arrhythmias.



Surgical tool peers into heart non invasively (Thinkstock photos/Getty Images)

A team of materials scientists, mechanical and electrical engineers and physicians has successfully integrated stretchable electronics technology with standard balloon catheters, the journal *Nature Materials* reports.

Catheters are long, flexible tubes that can be threaded through a vein or artery to reach the inside of the heart. There it inflates like a balloon and gently presses against the surrounding tissue to open blood vessels or valves.

"It's all in one, so it maps and zaps," said **Johr Rogers**, professor of materials science and engineering at the **University of Illinois**, who led the research, according to an Illinois statement.

"The idea here is (that) instead of this single-point mapping and separate single-point zapping

catheter, have a balloon that offers all that functionality, in a mode that can do spatial mapping in a single step."

The device holds an array of sensors to measure electrical activity of the cardiac muscle temperature, blood flow and pressure as the balloon presses against the tissue.

The entire system is designed to operate reliably as the balloon inflates and deflates.

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