Wireless pacemakers could make life easier for heart patients

This new battery-free iteration of the device could save even more lives.

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Rice University

Since its invention in 1932, the pacemaker has saved countless lives. Now, thanks to researchers at Rice University and the Texas Heart Institute, it looks like this essential medical device could be getting a pretty signifcant upgrade. In a bid to reduce costly and invasive operations, the aforementioned institutions have joined forces to create the world's first wireless and battery less pacemaker. Powered purely by microwaves, this new pacemaker is smaller than a dime, allowing it to be implanted directly into a patient's heart. Doing away with the wires that usually power pacemakers, this new device takes its energy from radio waves emitted by an external battery pack.

With pacemaker maintenance operations often causing complications like bleeding and infection, this breakthrough could help to make an already difficult condition a bit more manageable. As well as reducing the need for surgery, this externally-powered pacemaker would allow doctors to easily adjust the pacing of the signals sent to the device. This would, of course, be done by increasing or decreasing the amount of power sent to the receiver. Cleverly, the device will also store any excess energy, keeping the extra power as a reserve once it hits its pre-defined threshold.

While this certainly isn't the first attempt at modernizing the pacemaker, the creators state that without a battery or leads cluttering up the form factor, patients will reap the benefits. Thanks to their small size, these new wirelessly powered microchips can be inserted into multiple places either inside or outside the heart, allowing them both to keep an identical pace. This could help patients whose heart problems are more severe, giving their ticker an extra helping hand.

So far, their experiments have been pretty successful. Testing the pacemaker on a pig, the device managed to boost its heart rate from 100 bpm to an impressing 175 bpm. With the pacemaker being introduced at a medical event running in Honolulu this week, let's hope that the medical community helps to fully test and approve this potentially impressive device.