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## SMART T-SHIRT DEVELOPED WITH RESPIRATORY MONITOR

 SPORT & FITNESS

**Canadian researchers have designed a t-shirt that has respiration sensors that can monitor a user's breathing rate without any wires and connects to a local radio device.**

A team at Quebec City's [Université Laval](#) has come up with a wearable sensor that would make monitoring a person's respiratory rate much easier and more comfortable. The lightweight cotton t-shirt was engineered with hospital patients in mind, so their breathing could be tracked without any intrusive (and often unwieldy) wires and patients would be much more mobile and free to move around.

The sensor is discretely sewn into the shirt at chest level where it can sense the chest expanding and contracting with each breath, and bends when the user breaths. The antenna is a spiral of fibers made from several materials, and the change in the antenna's shape affects the frequency it operates at. A simple radio at the 2.45 GHz range can then pick these signals up.

While testing the sensor the team put two men through similar tests wearing the t-shirt. They were monitored sitting, lying, standing, and during deep breathing the setup detected frequencies up to 120 Mhz, and for short shallow breaths it dropped all the way down to 4 MHz, and it still worked fine. It's hoped in the future it'll be refined and put into production.

There have been similar wearable products that measure heart rates, like [Bloomer Tech's smart bra](#) for example. And not long ago two teenagers invented the [MediVest](#) which could predict an impending epileptic attack. Where's next for health-monitoring wearables?

1st June 2017

Website: [www.ulaval.ca/en](http://www.ulaval.ca/en)

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