

Smart shirt knows when you're not up to snuff

January 11 2014, by Glenn Chapman



A general view of the 2014 International CES at the Las Vegas Convention Center on January 7, 2014 in Las Vegas, Nevada

French fashion is getting smarter with the help of fabric woven with micro-sensors that can reveal when someone is weary or unwell.

France-based Cityzen Sciences was at the Consumer Electronics Show on Friday with shirts made of "Smart Sensing" material that reads body

heat, [heart rate](#), motion and location.

"The fabric can be made into any clothing; gloves, shirts, pants, you name it," said Gilbert Reveillon, international managing director at Cityzen, the lead company in a consortium that created the material.

"It is the first time ever that we managed to mix these two industries, embedding sensors into textile."

Sensors in the shirt capture data about a wearer and transmit the information through a small battery-powered unit sewn discretely where a label typically goes.

The data is sent in real-time wirelessly to a smartphone, where an application charts it in a timeline and alerts people to potential physical problems.

The application can show if a wearer is tired or stressed, or even if a coming [heart attack](#) is coming, according to Reveillon.

"You can't prevent a heart attack from happening, but you could definitely detect it hours, or even days, ahead of it taking place," Reveillon told AFP.

"On the field, a coach could tell when a member of the team has been running over capacity and put in a fresh player."

The material was developed in collaboration with major French sports teams as well as members of the health industry.

The Cityzen smart shirt was honored for innovation at a first-ever digital health summit at CES.

"This really does seem like science fiction," Everyday Health chief operating officer Paul Slavin quipped after presenting Cityzen a top award for innovation.

Everyday Health, a digital health company, sponsored the prize.

A member of the Cityzen team wore the shirt while venturing for more than an hour along the famed Las Vegas strip, with his smartphone revealing how his body handled the outing.

"The Las Vegas street definitely increases the heartbeat," Reveillon said. "The vibes are very positive."

The smart fabric can be laundered and ironed without worry.

"In two years' time, by washing it, you will recharge the batteries," Reveillon promised.

The material was said to cost about 30 to 40 percent more than commonly used fabric.

The fabric was expected to be in commercial products late this year.

"It will be worldwide, either medical or sports," Reveillon said.

"Our proposal is to imbed micro-sensors now, nano-sensors soon, into any fabric."

Potential uses of the material will only be limited by the creativity and talent of software savants making applications that analyze and react to what is learned about wearers.

"A child could be wearing this shirt and, if a mother sees his heart rate

and temperature jump, she can call him home and even watch the path he takes," Reveillon said.

The Smart Sensing consortium is backed, in part, by the French government.

The fabric is part of a hot trend of putting low-cost sensors in anything from light fixtures to jewelry or the soles of shoes to make environments adapt to or provide feedback regarding what people want or do.

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