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LifeShirt and Smart Shirt

Wired garments monitor vital signs.

By Rebecca Tollen
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Imagine replacing a huge EKG machine with the shirt on your back. Two new technologies called LifeShirt and Smart Shirt promise to do just that.



LifeShirt

Developed by Southern California-based health information and monitoring company VivoMetrics, the LifeShirt uses embedded sensors and a PDA to monitor and record more than 30 physiological signs. The information is uploaded to a computer via a datacard and sent over the Internet to VivoMetrics, where it is analyzed and then sent to your physician.

"The LifeShirt reads every beat of your heart and also your emotional condition. We read, for instance, every sigh that you take, every swallow, every cough," said Paul Kennedy, president of VivoMetrics.

In New York, Sensatex is developing a similar product, called the Smart Shirt, for medical and recreational use. The Smart Shirt can monitor a wide variety of vital signs such as heart rate, EKG, respiration, and blood pressure, Sensatex CEO Jeffrey Wolf said.

Still a prototype, the Smart Shirt uses electro-optical fibers embedded in the fabric to collect biomedical information. The information is sent to a transmitter at the base of the shirt where it is stored on a memory chip or sent to your doctor, coach, or personal server via a wireless network like Bluetooth, RF, WLAN, or cellular.

Athletes can monitor heart rate, respiration, and temperature -- and even listen to MP3s -- through the shirt, Wolf said. A microphone also can be embedded into the shirt.

Firefighters could wear a LifeShirt or Smart Shirt to be monitored for smoke inhalation, athletes could wear the garments to enhance training, and doctors could use them to monitor patients who've left their offices.

Conduct medical exam remotely

A LifeShirt or Smart Shirt could even make virtual medical exams possible. A patient would wear one of the shirts, and a physician could monitor heart rate, lung sounds, and other life signs from a remote location via the Internet.

Expect to see VivoMetric's LifeShirt in your doctor's office as soon as the Food and Drug Administration gives it the green light. Sensatex is planning to introduce its Smart Shirt for medical, athletic, and recreational use in about a year. No word on costs yet.

While this wearable technology isn't on the market yet, the Indy racing league has started to use it in the field to see how a race car driver's body reacts to pressure behind the wheel. In

this past May's Indy 500, driver John Herb sported a LifeShirt. Herb clipped another car during the race, luckily escaping uninjured. According to the vest, his heart rate -- already beating fast -- stayed at a steady 140 beats per minute.

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