Portugal Designs A ‘Smart’ T-Shirt That Measures Cardiac Rhythm

Two Portuguese firms have created the first ‘smart’ T-shirt that incorporates an electronic device and a variety of sensors capable of measuring the wearer’s cardiac rhythm and reporting the data in real time.

"Vital Jacket" makes it possible to administer an immediate electrocardiogram or to follow the evolution of a patient’s cardiac rhythm over the course of weeks, as the manager of Biodevices, Luis Meireles, explained to EFE.

Biodevices is the firm responsible for developing the technology, together with the Institute of Electronic and Telecommunications Engineering at the University of Aveiro.

Compared to other devices, the principal advantage of the new system manufactured in Portugal is, according to Meireles, the continuous recording of data, making it possible “to detect cardiac anomalies that sometimes go unnoticed by the patient because they are asymptomatic.”

The data obtained can be accessed in real time through several different platforms, such as a PDA (Personal Digital Assistant) or Bluetooth, or can be stored on a flash drive.

The Portuguese firm Petratex, maker of the swimsuits worn by U.S. Olympic swimming champion Michael Phelps, is responsible for designing the stretchable, anti-perspiration, and easy-to-wash fabric used in the “Vital Jacket.”

The new T-shirt, barely distinguished from a normal piece of clothing, can also be used in sports, since it measures variables like oxygen saturation and respiration rate, as well as activity, posture, and body temperature.

Although the product is available in stores “for general use,” the Portuguese Secretary of Health, Manuel Pizarro, is expecting its clinical certification as a medical device, because it is “a more efficient and less uncomfortable product than those habitually used for administering electrocardiograms.”

Authorization may take around “two months,” according to Meireles, who added that negotiations are underway for the sale of the T-shirt in Spain, the United Kingdom, Brazil, and Greece.

The Biodevices manager hopes to sign agreements with several hospitals and to see the T-shirt sold in pharmacies in the future, especially in light of the “positive results” obtained in clinical trials carried out with sixteen patients in Portugal.
Meireles concluded that “Vital Jacket” was designed on the basis of the concept of the ‘smart house,’ aiming at including on-line monitoring for patients in need of special follow-up at home.