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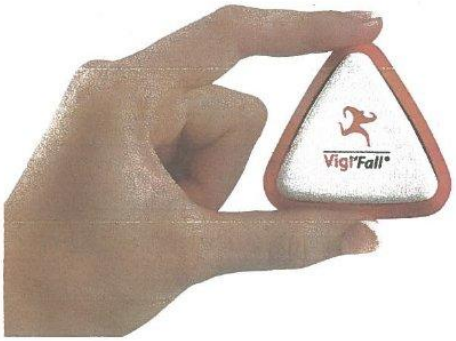
New device Vigi'Fall will make growing older safer thanks to EU funding

Out of the 1,768 reported injuries sustained by the Maltese elderly population aged 65 years and over between January and April 2012, 312 were caused by falls.

The FallWatch Consortium brings **together a wealth of European technology and expertise in a tiny triangular patch called Vigi'Fall that can be worn by the user in a non-intrusive,** permanent manner. The interaction between the device worn by the user, the infrared motion sensors mounted throughout the living area and a central control box ensures the accurate detection of a serious fall and the timely intervention of an emergency medical team. The next phase of the project, FallWatch DEMO, aims at optimising functionality and accuracy even further by incorporating heartbeat monitoring. The FallWatch/FallWatch DEMO projects have received combined funding of almost €2 million from the European Commission. **The consortium is led by French start-up Vigilio S.A. and is a good example of how information and communication technologies (ICT) can make life** easier and better for the elderly.

"It is estimated that over 20 million people aged 65 and over suffer a fall every year in Europe. It is the leading cause of trauma-related deaths in this age group. Immediate medical intervention is therefore crucial and can often mean the difference between life and death," explains Jean-Eric Lundy, founder of Vigilio S.A and a doctor at the emergency department of the Cochin Hospital in Paris. "Far too often we see elderly patients arrive at the emergency department after lying on the floor for hours unable to call for help. The physical and psychological deterioration that ensues is often irreparable. The ability to intervene quickly and provide the medical assistance required can ensure that a fall does not have a permanent impact on the person's quality of life."



Event
. Fragile or incl. patients
. Risk of criticality

Biosensor
. Comfortable
. Worn continuously
Radiocommunication

Relay
. Fusion of data
. 868 MHZ c.1
. Transmission STN / GPRS

Emergency
. 24 / 7
. Protected link

The solution is based on a sensor system. A biosensor is worn by the user while a number of other sensors are wirelessly attached to walls around the home. If the user suffers a fall, in addition to the fall signal emitted by the biosensor, the wall-mounted sensors detect the absence of movement and wirelessly relay a signal to a nurse or to a call centre via a central control box. An operator at the call centre attempts to contact the user by telephone. If the phone call goes unanswered, the family or an emergency rescue team is immediately mobilised.

In order to distinguish between real falls and false alarms, the device is equipped with data-fusion software which allows it to analyse the nature of the fall and the resulting posture of the patient. Wearable even in the shower and charged by high-powered batteries, the patch – once in place on the skin – can simply be forgotten about, with the user reassured that, should a fall occur, help will be instantly on its way.

"The FallWatch project is a perfect example of the great healthcare advances that can be achieved when the best and brightest of European industry work together," comments Michael Jennings, European Commission spokesman responsible for research, science, and innovation. "This is the type of innovation that makes a difference in people's lives while also contributing to European competitiveness, which the Commission will continue to support under the future EU Research and Innovation Programme Horizon 2020."