Researchers develop "smart dressing" to transform wound care

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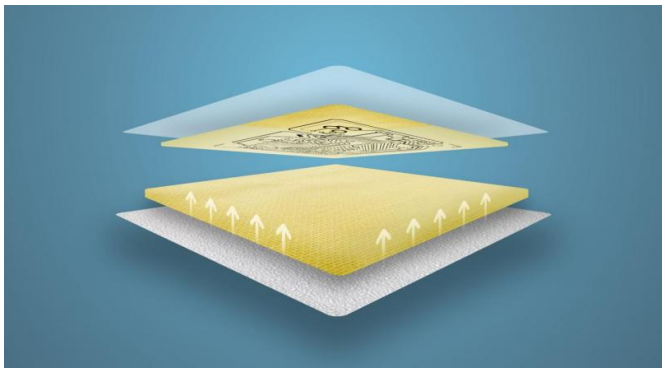

Artist's impression of the DermaTrax smart dressing. Credit: Fleming Medical

Manually removing patient dressings to visually inspect chronic wounds could soon become a thing of the past. Ireland's leading ICT research centre, Tyndall National Institute (Cork), has teamed up with medical equipment provider Fleming Medical (Limerick) and Holst Centre/TNO (Eindhoven, Netherlands) to develop the world's first commercially-available "smart dressing" for use in futuristic wound care applications. Chronic wounds are an increasing and costly healthcare issue, particularly in countries with ageing populations. The "smart dressing" will make wound care easier, more comfortable for the patient, and more cost-effective for healthcare providers.

The smart dressing, called 'DermaTrax', contains sensors that monitor conditions in a patient's wound, including its temperature, moisture and pH. DermaTrax will autonomously monitor both the condition of the wound and the dressing itself, relaying information to a nurses' station via a wireless link. Nurses and other medical staff can be alerted to the possible presence of infection and other healing issues without the need to remove the dressing, which can disturb the patient and interrupt healing. The miniature sensor module will be flexible and thin enough to fit inside a typical dressing without affecting the patient's comfort.

Mark Fleming, CEO of Fleming Medical, said, "DermaTrax will revolutionize current practice, which involves the manual removal of a dressing and visual inspection of the underlying wound. This is time-consuming for the nursing staff, uncomfortable for the patient, and disturbs the natural healing process. This hi-tech dressing will generate significant savings in healthcare costs, due to reduced clinical inspection time and shorter hospital stays as a result of faster wound healing."

As Dr. Conor O'Mahony, project leader at Tyndall, explained, "The cost of chronic wound-care can be very high. For instance, in the UK alone, around 200,000 patients are treated for chronic wounds yearly at an estimated annual cost of £4 billion. Because of this cost, it is vital for patients and the taxpayer alike that these wounds are managed effectively."

Dr. Paul Galvin, Head of ICT for Health at Tyndall, noted that exciting developments such as these are expected to play a major role in the ongoing expansion of health-related technology projects at the Cork institute, which anticipates involvement in medical projects worth over €10M by 2018. He explained that collaborations like the project with Fleming Medical are producing broad benefits to Ireland's medical research and development industry.

Mark Fleming, CEO, Fleming Medical & Dr. Paul Galvin, Head of ICT for Health at Tyndall National Institute at the launch of the “Smart Dressing”.

"This smart dressing product will not only result in a significant addition to Fleming Medical's product portfolio – it will also increase Ireland's standing as an international hub for medical device research and development," said Dr. Galvin.

Dr. Jeroen van den Brand, Program Manager at Holst Centre/TNO adds to this, "Our research focusses on integrating sensors and electronics into flexible materials, without compromising the characteristics of these materials. One of our activities is the development of health patches that measure vital signs varying from skin temperature to ECG. Applying this knowledge to the development of smart dressing fits perfectly with in the scope of our research.

Provided by Tyndall National Institute