EMBEDDED NANO-SENSORS CREATE SMART BANDAGES

SPORT & FITNESS

Swansea University's Institute of Life Science department is developing 3D printed bandages with nano-sensors for real-time, around-the-clock health reporting.

The research team in Swansea University's Institute of Life Science department is combining nanotechnology, biochemistry, nano-electronics, 3D printing and coding to produce what could be the health industry's first intelligent dressing. The smart bandages will be able to track a patient's levels of activity, send feedback to medical teams on the healing process and possibly even release medication on a timed schedule.

3D printing will be used to make production of the bandages affordable to the health service, and the research team hopes to begin trials of the connected dressings within a year. One of the benefits of the smart bandages could be time saved for both patients and doctors as appointments become fewer thanks to the constantly available stream of information. Another benefit could be more accurate care based on how a wound is healing rather than on how a patient says they are feeling – objective data versus subjective feeling.

Nanotechnology is being used in many industries on a range of projects. Personal, wearable cooling units have been developed that could potentially replace large air conditioning appliances, and nanotechnology is allowing art conservators to get inside the compounds of the materials in newer paintings, cleaning from the inside and hopefully, finding ways to halt and prevent any further degradation of the pieces. How could industries known for their size and strength find surprising new ways of putting nanotechnology to use?

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