Printing Healthy Cells Onto Wounded Flesh

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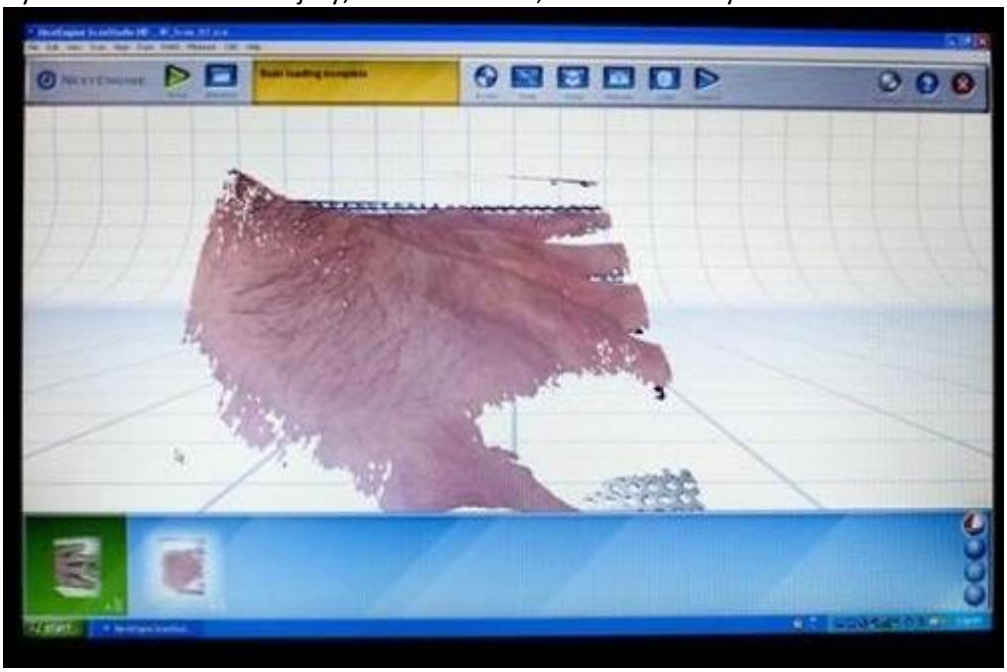
Wake Forest's Institute for Regenerative Medicine, a group of organ-growing, tissue-engineering mad scientists, is trailblazing the cool and creepy future of medicine. Their latest effort is an inkjet-inspired bioprinter that prints fresh cells directly onto wounds.

We talked to Dr Anthony Atala, Director of the Institute, during our "This Cyborg Life" theme week last year, and bioprinting came up in passing as a technique his lab was working on. Now they've got a rig set up, and initial tests on mice show the process healing wounds in just two weeks as opposed to five when left untreated.

A laser scans the wound, determining its shape and size, and then the printer precisely sprays two layers of cells onto the injury, first fibroblasts, then keratinocytes. The cells take care of the rest.



The next phase involves testing bioprinting on pigs and, eventually, humans. The Wake Forest researchers hope the technology can be deployed in the Middle East, where serious burns are common and treatment requires intensive, inefficient skin-grafts to prevent infection. Presumably they'll have worked out the low cellular toner issues by then.