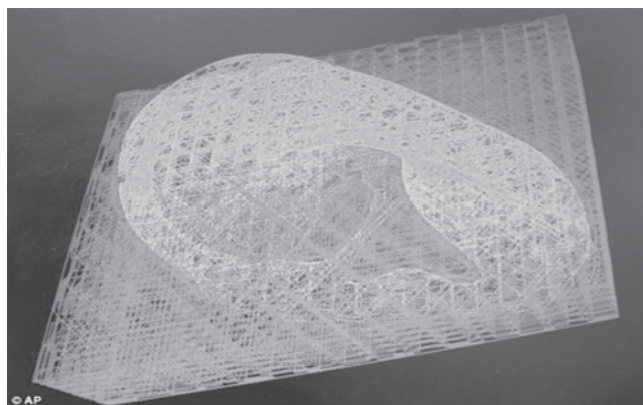


Medical News

3D printing - Scientists are now able to print entire body parts

Angela Irizarry, 5 years, was born with a heart that had just one functional pumping chamber known as a single-ventricle defect - a potentially lethal condition that starves the body of oxygen. Standard treatment involves a series of operations, the last of which implants an artificial blood vessel near the heart to connect a vein to an artery. Doctors took bone marrow from Angela and extracted certain cells, seeded them onto a 5-inch-long biodegradable tube, incubated them for two hours, and then implanted the graft into Angela to grow it into a blood vessel. Since the operation and implant, Angela has fared well.

We are perhaps no longer going to be surprised with the science fiction movies as scientists have made groundbreaking advances in the field of regenerative medicine, paving the way



A computer image of the 'scaffolding' for a human ear being created by a printer in a laboratory at Wake Forest University in North Carolina.

to print new body parts. Although experts say it will be some time until they are able to grow entire functioning organs, bioengineers are already able to grow and use new blood vessels in patients. And they are now closer to being able to offer patients replacement ears and noses.

Scientists are now able to use a 3D printing technique to produce biodegradable 'scaffolding' for facial features and internal organs. Instead of depositing ink, the printer puts down a gel-like biodegradable scaffold plus a mixture of cells to build an organ layer by layer. Using the printouts, bioengineers are able to cultivate human skin cells around the scaffolding to create living tissue.

In some cases the idea has even become standard practice. Surgeons can use a patient's own cells, processed in a lab, to repair cartilage in the knee. Burn victims are treated with lab-grown skin. In 2009, it was possible to entirely rebuild the 'stiffening' elements of the penis from donor cells on a printed scaffold. Dozens of patients are thriving with experimental bladders made from their own cells as are more than a dozen who have urethras made from their own bladder tissue. Growing lungs and other whole organs for transplant remains the goal, and scientists claim they are edging closer.

Doctors hope that one day patients will be able to donate cells, either from a biopsy or just a blood draw. A laboratory would then use them, or cells made from them, to seed onto a scaffold that is shaped like the organ a patient needs. Are human organs then going to be delivered in future at their doorsteps like pizza and burger?

Available from: www.dailymail.co.uk/sciencetech/

Medical Jokes

Doctor tells the patient: I have a bad news and a worse news.

"What is it, doctor?" asked the patient.

Doctor replied: The laboratory test results show that you have only 24 hours to live.

"Oh my God! Then what could be the worse news?" The Patient cried out.

Doctor: The worse news is that I was trying to tell you this since yesterday but your cell phone was unreachable.

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