

Liver Cells Grown from Cord Blood

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Scientists in the UK say they have successfully grown tiny sections of human liver.

The sections of liver were created using stem cells from umbilical cords by a team at Newcastle University.

It is hoped the "mini-livers" will be used to test drugs, avoiding incidents like the Northwick Park trial.

Researchers Dr Nico Forraz and Professor Colin McGuckin have started a company called ConoStem in an effort to market their stem cell work.

They believe it will be decades before a grown liver can be used in a human transplant operation.

But they say the use of small sections of liver, which are less than the size of a one pence piece, could be used to treat patients within 10-15 years. A more realistic short-term use would be to replace some of the testing on humans and animals of pharmaceuticals.

The extent of the team's work emerged after publicity following a local business award.

The tissue is grown using a microgravity bioreactor, a piece of equipment derived from Nasa technology, which aids the creation of cells by mimicking weightlessness.

Professor McGuckin said if human testing could be reduced by using organ cells grown from stem cells an incident like that at Northwick Park Hospital, where six patients became seriously ill during a drug trial, could be avoided. "We take the stem cells from the umbilical cord blood and make small mini-livers," he said.

"We then give them to pharmaceutical companies and they can use them to test new drugs on.

"It could prevent the situation that happened earlier this year when those six

patients had a massive reaction to the drugs they were testing."

Ethical leap

Professor Ian Gilmore, a liver specialist at the Royal Liverpool Hospital, told BBC News the team's work was significant.

"Firstly that they are able to do it from umbilical cord blood and not requiring embryos. That's quite a big ethical leap forward.

"And they are producing such a significant amount of tissue."

But he said: "We're a long way from producing a whole liver. The liver has its own blood supply, its own fibrous skeleton, they are just producing the individual liver cells.

"But nonetheless it is exciting because there is a real dearth of treatments available for people with liver disease.

"Many people are waiting for transplants. Anything that does give some hope, even over a 10-year period, is cause for celebration."

It is estimated that up to 10% of the UK population have problems with their liver - most are linked to lifestyle factors, such as heavy drinking and obesity.