

EXCLUSIVEBy **Lucy Johnston**
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A METHOD of repairing damaged heart muscles has been called the "biggest breakthrough since transplants".

A high-level meeting has paved the way for global trials to begin on hundreds of patients.

British scientists have found a way to use stem cells to repair damaged tissue which could help millions living with heart failure, the UK's leading cause of death.

Scarring due to disease or heart attacks affects more than two million people in Britain.

Initial trials involving more than 100 patients are being planned for the autumn at two London hospitals.

World renowned cardiac surgeon Professor Steve Westaby, who helped pioneer the revolutionary technique, said it had been thought that repairing heart damage was impossible.

But results from a long-term trial that began in Greece five years ago have shown that this is not the case.

Preliminary data from this trial showed the engineered stem cells, known as Heartcel, can reverse scarring by up to 79 per cent.

The data, presented at the European Society of Cell and Gene Therapy in Florence, showed an average of 40 per cent reduction in heart damage in those on the treatment.

Last month researchers finalised talks with European and US regulators to discuss the timetable for global trials next year involving 500 people.

Professor Westaby, from the John Radcliffe Hospital, Oxford, said: "I am very excited at the prospect of a trial which will hopefully lead to

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'Repair kit' for hearts offers hope to millions

the availability of this stem cell treatment to thousands of patients annually in the UK."

Other scientists have tried in vain to repair damaged heart muscle using stem cells but without success.

This is the first time scarring has been shown to be

treatment of the heart had lost credibility.

"This would be the biggest breakthrough since the first transplants three decades ago."

Professor Westaby has been working on the technique for more than a decade and is

stem cells in a laboratory. Professor Westaby was inspired to work on the breakthrough in 1999 after a four-month-old baby girl's heart healed itself when he carried out a major life-saving operation. Kirsty Collier, from Swindon, was dying of a serious heart defect.

In a last-ditch effort Professor Westaby cut away a third of her badly damaged heart. Surprisingly it began to beat.

A scan 14 years later showed the heart had healed itself.

Professor Westaby said: "The fact there was no sign of heart damage told me there were foetal stem cells in babies' hearts that could remove scarring of heart muscle. That never happens in adults.

"It's all down to the clues we got from Kirsty's operation."

'This trial could lead to help for thousands of UK patients a year'

reversible. It could herald an end to transplants and lead to a treatment for heart failure within three to five years.

Professor Westaby said: "Distinguished scientists have tried to use stem cells to form new heart muscle over many decades but this has never worked reliably and stem cell

carrying out the study with Professor Kim Fox, head of the National Heart and Lung Institute, at Imperial College London. The implanted stem cells were created by medical outfit CeliXir, co-founded by Nobel laureate Professor Martin Evans, the first scientist to culture mice embryonic