



THE UNIVERSITY *of* EDINBURGH

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Stem cell tool to repair joints offers hope to osteoarthritis patients

Patients with osteoarthritis could be set to benefit from an inventive stem cell technique being tested by doctors.

The research focuses on harnessing the capabilities of the patient's own cells to repair damaged joint tissue.

Experts say, if successful, the technique could pave the way for treatments that would reduce the need for people having to have invasive surgery.

Five million people in the UK live with osteoarthritis. Osteoarthritis damages the tissue between bones known as articular cartilage, leading to joint pain, swelling and disability.

Treatments for the condition – which typically affects knee, hip and ankle joints – merely mask the pain or involve surgery, which has only short-term benefits.

Scientists say testing alternatives is difficult because models are based on animal tissue that has different qualities to that in humans.

Using discarded hip fragments donated by patients undergoing routine surgery, the research team at the University of Edinburgh will create the first osteoarthritis model in human tissue.

The model will be used to develop ways to introduce a patient's stem cells – unique cells that are able to transform into any other type of cell – into damaged joints.

Scientists say that the stem cells could then transform into cartilage cells, replacing injured tissue, which could lead to much-needed new treatments for patients.

The study is funded by the Chief Scientist for Scotland, part of the Scottish Government Health Directorates.

It involves researchers from the University's Medical Research Council Centre for Regenerative Medicine, the Department of Trauma and Orthopaedic Surgery and the School of Biological Sciences

Mr Anish Amin, consultant trauma and orthopaedic surgeon at NHS Lothian and lecturer at the University of Edinburgh, who is leading the research, said: "Millions of patients suffer

from joint pain and disability due to osteoarthritis, including those of working age as well as the elderly.

“The potential to regrow damaged joint tissue from the patient’s own stem cells is very exciting and really is the ultimate treatment solution. We are hopeful that our research will come up with promising results.”

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