

Sugar is the new 'solution' to osteoarthritis risk, researchers claim

28 January 2015, by Jane Tadman

Scientists in Edinburgh have come up with a new 'solution' that could reduce the risk of osteoarthritis developing in tens of thousands of people who undergo orthopaedic surgery every year – sugar.

People who have surgery for joint problems are at increased risk of developing [osteoarthritis](#) because the operation can damage cartilage cells.

But a team at the University of Edinburgh have found that by simply adding sugar to the [saline solution](#) used to wash out joints during [orthopaedic surgery](#) protects the cartilage from being damaged and may even improve cartilage repair.

Osteoarthritis, which affects more than eight million people in the UK, occurs when cartilage at the ends of bones wears away, leading to stiff, painful joints. There is no cure and treatment is limited to pain relief and joint replacement in severe cases.

The main risk factors for developing for the condition are ageing, obesity, and joint damage. People who undergo surgery or arthroscopic procedures to treat joint problems – often because of a sports injury or unexplained joint pain – are at an increased risk of developing osteoarthritis because surgery can damage the joint and tissue by destroying cartilage cells called chondrocytes.

But in experiments on rats, the team at Edinburgh University's Centre for Integrative Physiology found that by adding sugar to the saline solution used during surgery to wash out the joint they could protect the joints from this [increased risk](#). Sugar raises the osmotic pressure of the saline, which protects the cells against injury during surgery.

The researchers describe the solution as 'chondroprotective' because it protects the [cartilage cells](#) against injury.

The team have also shown that as well as protecting against cartilage damage there is better

[cartilage repair](#) when the chondroprotective solution is used, compared to the usual saline currently used in orthopaedic surgery.

Their research was funded by Arthritis Research UK and published in the journal *Osteoarthritis and Cartilage*.

Dr Andrew Hall, principal investigator and reader in cell physiology said: "Our findings could have major implications for tens of thousands of people who undergo arthroscopic surgery, such as footballers or other sportspeople who've damaged their cartilage. Or in fact anyone who's had exploratory surgery for a sore or painful knee.

"There is a worry that all these people are at risk of developing osteoarthritis from their surgery. But if surgeons can be persuaded to use this chondroprotective solution as standard that risk could be substantially reduced. It's a cheap, simple solution that can protect the [cartilage](#) in the joint during arthroscopy and surgery."

Dr Stephen Simpson, director of research at Arthritis Research UK commented: "It's extraordinary that something as simple as a sugar solution can have such a beneficial, protective effect on the joints during [surgery](#) and can actually help repair [cartilage damage](#). It seems a simple yet potentially valuable step that surgeons around the country could be persuaded to include in their procedures."

Provided by Arthritis Research UK

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