

Silk and cellulose can be used in stem cell cartilage repair

The following is an excerpt of a longer story. Find a link to the full story below.

Over 20 million people in Europe suffer from osteoarthritis which can lead to extensive damage to the knee and hip cartilage. Stem cells offer a promising way forward but a key challenge has been to design a 'smart material' that is biologically effective for cartilage tissue regeneration. Now researchers have identified a blend of naturally occurring fibres such as cellulose and silk that makes progress towards affordable and effective cell-based therapy for cartilage repair a step closer. The EPSRC-funded study, published in *Biomacromolecules* and undertaken by University of Bristol researchers, explored the feasibility of using natural fibres such as silk and cellulose as stem cell scaffolds — the matrix to which stem cells can cling to as they grow.

Both cellulose and silk are commonly used in textiles but the researchers demonstrated an unexpected use for the two natural polymers when mixed with stem cells. The team treated blends of silk and cellulose for use as a tiny scaffold that allows adult connective tissue stem cells to form into preliminary form of chondrocytes — the cells that make healthy tissue cartilage — and secrete extracellular matrix similar to natural cartilage.

View the full story here: [Silk and cellulose biologically effective for use in stem cell cartilage repair](#)