

Cartilage repair gel gives injuries a sporting chance

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A cartilage gel being developed by tissue engineers and biochemists at the University of Sydney could bring increased mobility to people living with debilitating sports injuries.

The researchers have joined forces to fast track the development of a new [biomaterial](#) that can be used to repair damaged cartilage, in particular [knee injuries](#).

Work has just commenced on an injectable hybrid-hydrogel that mimics chondrocytes, the cells that are found in cartilage.

Chief investigator on the project, Associate Professor Fariba Dehghani, from the Faculty of Engineering and Information Technologies, says the team is targeting these cells because they are responsible for producing and maintaining the structure of cartilage but until now have been extremely hard to repair when damaged.

"Tissue engineering is an emerging science that consists of growing living cells into 3D scaffolds to form whole tissues capable of normal functions," says Professor Dehghani.

"We intend to generate a new family of hybrid biomaterials constructed by precisely blending natural and synthetic components.

"The novel biomaterials that we are developing will establish a foundation for manufactured prefabrication and in situ injections which

will promote rapid and targeted healing to the affected region," says Professor Dehghani.

Sports injuries similar to those affecting cricketers or rugby league and soccer players for example could potentially be permanently repaired by the [tissue engineering](#) techniques being developed by the team, says Professor Dehghani.

Also working on the project is molecular researcher and co-Chief investigator Professor Tony Weiss from the University's School of [Molecular Bioscience](#), who says:

"When we refine it, this technology has the potential to be used to rebuild other cartilage in many places in the human body, areas that are adversely affected by ageing and disease."

"This is an extremely exciting time for scientists. Our multidisciplinary approach to research gives us the opportunity to blend the best of our skills."

"It promises more rapid advancement of our knowledge and by working together we can accelerate the development of therapies for injuries which in the past many of us have just had to live with," says Professor Weiss.

Provided by University of Sydney

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