

# NEW MEDICAL TREATMENT OF CARTILAGE DAMAGE AND ARTHROSIS IN THE KNEE

In Switzerland, every month hundreds of people of all ages are admitted to hospitals because of injuries caused by sports activities.

Skiing and snowboarding in winter, roller-skating and skate-boarding in summer represent the majority of knee injuries with cartilage damage.

When not treated, these defects may develop arthrosis later on. As of today, an arthritic knee has been usually replaced by a metallic prosthesis.

An exciting new technology, however, is poised to revolutionize the treatment of knee injuries: the creation of man-made cartilage.

In our interview, Prof. Dr. med. Christoph Ergelet from the Arthro Clinic in Zürich reveals the major key points of this technology.

Q: Arthritic hips and knees have been treated for over 30 years by the means of metallic prostheses. Is it this type of treatment the Arthro Clinic Zürich is specialized on?

A: The Arthro Clinic offers all kinds of treatments for patients suffering from arthrosis, including among others, prosthetic replacement. Arthrosis however, is a wide term. There are different types and stages of arthrosis, you have old patients, young patients, etc. – and therefore they have to be treated differently. More and

more young patients injure their knees. For young patients, who suffer from a cartilage lesion, a prosthetic replacement is often not appropriate. Although there have been several options to treat these kinds of cartilage damage, in many cases no one provides good results in the long run. Progress in medicine and biotechnology offers new options to treat these cartilage defects.

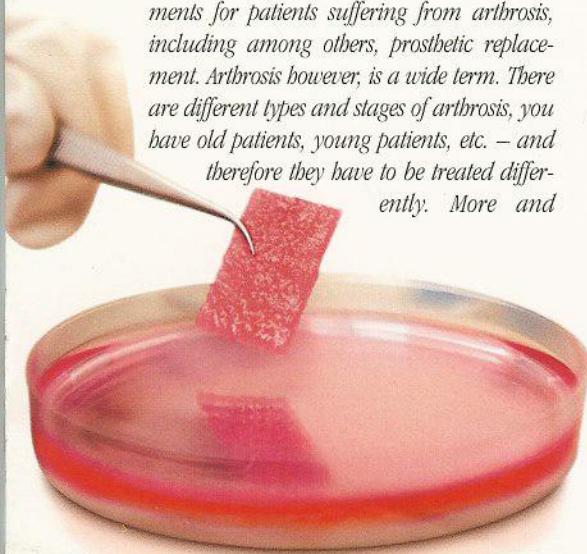
Q: What kind of technology is it?

A: The new technology applies the basic knowledge gained in biology over the past few decades to the problems of tissue regeneration. The patient receives his own cartilage cells that have been harvested previously, cultivated in a laboratory and incorporated into three-dimensional scaffolds of biodegradable polymers. The entire structure of cartilage

cells and scaffold is then transplanted into the defect site, where the cells replicate, reorganize and form new cartilage tissue. At the same time, the biodegradable polymers break down, leaving only a completely natural, patient-own, final product in the body.

Q: Does it mean that this cartilage is man-made in the laboratory?

A: In the laboratory, the cartilage is prefabricated up to a certain level – like a pre-baked frozen pizza. It is then transplanted into the human body, because the best way to sprout human tissues is still to rely on the body's own biochemical wisdom. The cartilage growth unfolds within the person much better than in an external, artificial environment, i.e. it will then develop into the proper bodily component.





Q: What experience has been established?

*A: This technology is not completely a new one. It has been developed in Sweden fifteen years ago and since then over 15'000 patients have been treated. The improvements of this original technology regarding a better handling have been developed and thoroughly tested over the past twelve years at the Charité University in Berlin. In cooperation with the University Medical Center Freiburg, Germany, BioTissue Technologies, now offers the product BioSeed-C to the medical community. Clinical application since 2001 show good results.*

Q: For which patients is this treatment appropriate?

*A: This technology fits best young, sporty patients who have traumatic knee-cartilage damage or cartilage deterioration as a consequence of an accident. Our clinical experience shows however that patients over 50 treated this have a good chance to benefit from this new technique.*

Q: What enables the new technology for the patient?

*A: The new technology offers an alternative and conservative treatment of cartilage deterioration which may permit to keep high quality of life in the long run.*

#### **Glossary:**

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