

## Research Project

# BIOengineered grafts for Cartilage Healing In Patients

### Third-party funded project

**Project title** BIOengineered grafts for Cartilage Healing In Patients

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**Organisation / Research unit**

Bereich Operative Fächer (Klinik) / Tissue Engineering (Martin)

**Project start** 01.11.2015

**Probable end** 31.10.2019

**Status** Completed

Articular cartilage injuries are a prime target for regenerative techniques, as spontaneous healing is poor and untreated defects predispose to osteoarthritis. Current strategies, including cell-based treatments, still have major drawbacks and show unsatisfactory long-term results due to inferior quality of repair tissue as compared to native cartilage.

This proposal aims at testing new promising therapies for cartilage repair in the knee based on the use of nasal chondrocytes (instead of typically used articular chondrocytes) and on the implantation of a tissue (instead of a cell-based graft).

The main objectives are:

(1) To compare the clinical efficacy of a tissue therapy (nasal chondrocyte-derived engineered cartilage, NC-TECI) with that of a cell therapy (nasal chondrocyte delivery from a matrix, NC-MACI) for cartilage repair. A multicenter, prospective, phase II trial will be conducted in four clinical centers with enrollment of 108 patients. This trial will be build on a phase I study demonstrating the safety and feasibility of NC-TECI for treatment of traumatic articular cartilage injuries. The phase II study will give an indication about the role of graft maturation on the clinical outcome. The clinical efficacy will be measured through a 10 points increase in the KOOS score (primary outcome) reflecting improvement in patients 'pain and knee function.

(2) To extend the range of potential clinical indications of NC-TECI and NC-MACI to so far untreatable (pre)osteoarthritic lesions. This objective will be achieved through treatment of kissing cartilage lesions in an animal model.

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The relevance of the BIO-CHIP project with the scope of this call lies within the translation of basic knowledge on regenerative medicine into the clinic. It will increase the attractiveness of Europe as a location to develop new therapeutic options related to tissue therapy and also explore new indications for the management of currently untreatable cartilage lesions.

### Financed by

Commission of the European Union

**Add publication**

**Add documents**

**Specify cooperation partners**