Geistlich
Surgery

Chondro-Gide®

AMIC® Patient Information

Autologous Matrix Induced Chondrogenesis

Dear Patient

Your doctor has identified damage to your articular cartilage. To repair the damage, he has recommended surgical treatment using the AMIC® method. AMIC® (Autologous Matrix Induced Chondrogenesis) is a biological method for cartilage repair. This innovative technique uses the body's own healing potential and the regenerative capacity of mesenchymal stem cells found in the bone marrow to grow into chondrocytes or cartilage tissue. The cartilage defect is accessed through the opening to the joint (arthrotomy). Special instruments are used to remove the degenerative cartilage tissue.

Several perforations (microfractures) into the subchondral bone plate are made with a sharp instrument (awl or pick). The defect is then covered with the Chondro-Gide® matrix. Through the perforations, bone marrow elements including stem cells and growth factors are released into the defect. Chondro-Gide® stabilizes and protects the migrating cells and thereby provides an ideal environment for the generation of new cartilage tissue.

If cartilage defects are not treated, there is the risk that they can continue to spread and ultimately lead to arthrosis.

Description of the Chondro-Gide® Matrix

Your doctor has decided to use the Chondro-Gide® collagen matrix. In contrast to metal implants, this implant supports the formation of new cartilage tissue and is completely resorbed. Chondro-Gide® is a CE-marked implant or medical device for treating cartilage defects. Chondro-Gide® consists of porcine collagen type I and III which is naturally resorbed by the body. Collagen is the main structural protein of connective tissue and an important component of articular cartilage. Chondro-Gide® is manufactured in a unique, patented process which results in a bilayer matrix with a compact and a porous side.

Safety and Quality

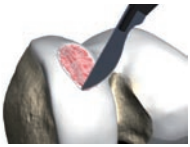
The choice of raw materials and the strictly regulated and certified production of Chondro-Gide® meet the highest safety standards and ensure excellent biocompatibility and a consistently high product quality. Chondro-Gide® has been used successfully for many years in the treatment of cartilage defects. Volumes of clinical data and experience document the reliability of Chondro-Gide®.

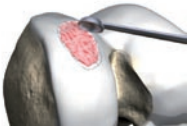
Surgical Technique

The surgery can be performed under local or general anaesthesia.
The procedure primarily includes the following steps:

Arthroscopy / mini-arthrotomy

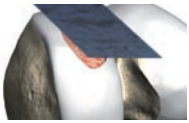
During arthroscopy, the size and classification of the defect is carefully assessed. Degenerative and detached cartilage is completely removed. The knee joint is then opened.





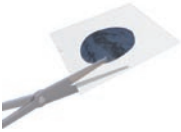
Preparation of the template

A template (sterile aluminium foil) is used to make a correct imprint of the defect.



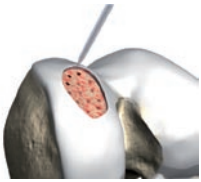
Preparation of the Chondro-Gide® Matrix

The template is transferred onto the Chondro-Gide® matrix and the matrix is cut to the required size.



Microfracturing

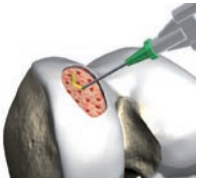
A sharp awl or pick is used and, if necessary, a mallet to perforate the subchondral bone plate every 4–5 mm to allow bone marrow material to flow into the defect.

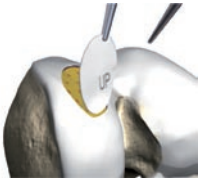


Electron microscope image of the Chondro-Gide® matrix

Fixation of the Chondro-Gide® matrix

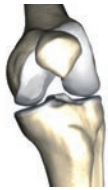
The Chondro-Gide® matrix must be attached in the defect. This is achieved using either fibrin glue or sutures. The fibrin glue is administered directly to the subchondral bone plate around the microperforations. The Chondro-Gide® matrix is glued into the defect with the porous side orientated towards the bone.

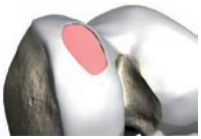




Flexion of knee and closure

Once the fibrin glue has set after approx. five minutes, the excess glue is carefully cut away with a sharp scalpel. The joint is fully flexed ten times during which the stability and position of the Chondro-Gide® matrix is checked. The wound is then sutured closed in layers.





Personal notes:

Postoperative care

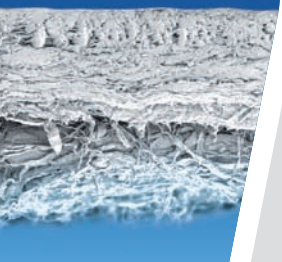
You will normally spend a few days in the hospital. You will be required to wear an orthesis for 6 weeks. During this time, full weight bearing is not permitted on the operated leg. Your doctor will give you instructions accordingly.
The table below shows you the course of your therapeutic exercise programme. However, your doctor may adjust the programme for your individual needs. Your doctor‘s instructions have precedence and must be strictly followed in order to achieve the desired therapeutic result.

Femoral and tibial defects:

	week 1	week 2–6	after 6 weeks
Weight bearing	foot sole contact 3-point gait with crutches	foot sole contact 3-point gait with crutches	build-up to full weight bearing
Mobilization	Orthesis (Orthesis in extension)	Femoral condyle – CPM with restrictions: week 2–3: 0/0/60° week 4–6: 0/0/90°	Free movement (restricted by pain)
Walking, Sport	Mobilization	aqua gym, swimming	Aqua jogging After 8 weeks: cycling After 6 months: jogging, skating After 6–12 months: contact sports

Patellar and trochlear defects:

	week 1	week 2–6	after week 6
Mobilization	Orthesis (Orthesis in extension)	CPM with restrictions: week 2: 0/0/30° week 3–4: 0/0/60° week 5–6: 0/0/90°	Free movement (restricted by pain)
Weight bearing	Foot sole contact 3-point gait with crutches	Build-up to full weight bearing	



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