



Patient Information

CaReS[®]-1S

Cartilage Regeneration System - One Step



Patient Information


ARTHRO[®] KINETICS
REGENERATING JOINT MOBILITY

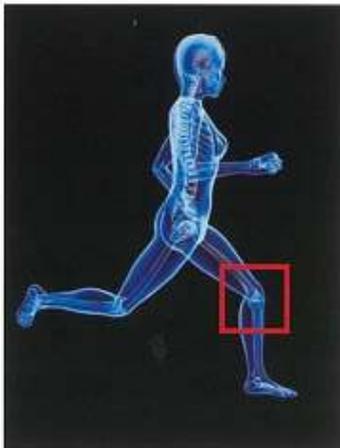
Step by Step

Many people suffer from inflamed and painful cartilage damage.

Danger lurks with every step: whether it's while dancing, playing football or simply taking a walk - the joints (knee and ankle joint) carry a heavy burden. One wrong movement can lead to cartilage damage in the joint, which has limited regenerative and repair capabilities. This can lead to necessary orthopedic surgery in the future. Even the smallest injuries, hardly noticeable and quickly forgotten, can lead many years later to Arthrosis.

As yet, there is not a non-operative treatment to assist in healing cartilage damage. Medication and patient exercise can assist disorders, but are not able to repair the damaged cartilage.

With this new approach - the cartilage regeneration technology CaReS®-1S by Arthro Kinetics - a big step is made towards durable and effective regeneration of damaged cartilage.



Healthy knee joint with intact cartilage



Limited Options

There are many different types of therapy – however not all of them work.
An overview of the most important developments in cartilage repair therapy:

• Microfracturing (fiber cartilage formation)

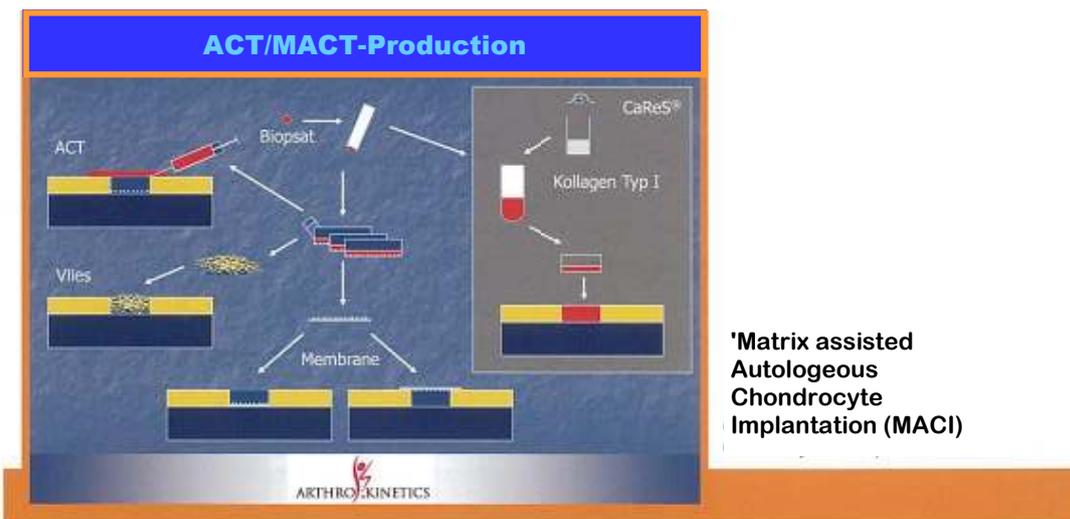
During the micro fracturing procedure for joint regeneration (Arthroscopy), bleeding is provoked from the bone underneath the cartilage damage. The blood, which fills the defect, contains the body's own repair cells, which form a kind of cartilage. The problem: the quality of the developed cartilage cannot be compared to healthy cartilage, as the repair cartilage is brittle and less flexible. Thus, the procedure does not provide a friction-poor surface and is unable to offer sufficient impact and pressure resistance as it lacks the substantial characteristics of natural cartilage.

• OATS

With a bone cartilage transplant (OATS) the defect is repaired with new cartilage. The fresh cartilage defect and a portion of the bone underneath is replaced by a large healthy bone cartilage cylinder taken from a less damaged part of the joint. The problem: cracks develop just like when laying tiles, in which inferior scar tissue forms. In addition, with each bone cylinder put into the joint, an increasingly large piece of healthy joint surface is destroyed.

• Matrix imbedded Autologous Chondrocyte Implantation (MACI)

A first break-through towards the long-term treatment of large area cartilage damage came up at the beginning of the 90's with the Autologous Chondrocyte Implantation (ACI). Meanwhile the ACI is replaced by the Matrix imbedded Autologous Chondrocyte Implantation (MACI). In the first stage cartilage cells are taken from the damaged joint during an arthroscopy, cultivated for several weeks in the laboratory (in vitro), incubated for one week in a matrix (bovine or porcine) and then, in a second stage, introduced as a mesh-like transplant to the damaged area. The problem: uncontrolled resorption and low control of the cells reduce the chance of successful healing. The advantage of the ACI/MACI clearly lies in the regeneration of large cartilage defects (> 4 cm²).



'Matrix assisted
Autologous
Chondrocyte
Implantation (MACI)



Gleam of hope - CaReS[®]-1S

CaReS[®]-1S is a new technology of cartilage regeneration, which shows the advantages of the Matrix inbedded Autologous Chondrocyte Implantation, without the necessity of an additional stage to harvest the cells by a biopsy.

CaReS[®]-1S is a new, minimal invasive concept to treat cartilage damages up to 6cm². With the CaReS[®]-1S technology Arthro Kinetics succeeded to overcome the problems of the cell cultivation in the cartilage cell implantation.



Healthy knee joint with intact cartilage



Focal defect in the cartilage



Prepared transplantation area with approp. sized transplant



Cartilage filled with CaReS-1S implant



Today, if my son asks me to play or to do some sports with him, then I know that I can. That's the most important thing for me." Klaus J. / 32 Jahre

New Horizons

CaReS®-1S advantages at a glance

- Evident pain relief and improvement of mobility – improvement of YOUR quality of life
- Proven colonization of cells into CaReS®-1S and formation of hyaline-like cartilage
- Just one stage! No intervention to harvest cells for cultivation
- Very good compatibility – proven in more than 2.000 CaReS® implantations
- Protection of the surrounding tissue
- Optimized and long-term chance for regeneration



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