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Having AutoCart™ cartilage regeneration surgery for osteoarthritis in your knee

Department of Orthopaedics

Information for Patients

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What is AutoCart™?

AutoCart™ is an operation that helps new cartilage grow. Cartilage is a tough, flexible tissue which covers the surface of joints. It acts as a shock absorber and lets joints slide over one another. It can become damaged due to an injury or sowly over time (osteoarthritis).

For many years there has been no easy way to re-grow this cartilage. Many options have been tried over the years with varying success.

Other treatment options can include

- non-operation: treatment with physiotherapy or injection therapy.
- surgery: re-aligning the joint (osteotomy) or joint replacement.

In younger patients, when certain requirements are met, cartilage regeneration may be a suitable option and may help avoid larger operations.

AutoCart™ is a new procedure to the University Hospitals of Leicester. The technique was first described in 1983 with major developments since 2015. Studies across Germany, Switzerland and America that have shown good results up to 2 years after surgery.

Who is suitable for AutoCart™?

You may be suitable for this treatment if you have arthritis affecting one clearly defined area of your knee. We will examine your knee in the outpatient clinic to assess how severe the arthritis is. The area of cartilage loss must be smaller than 3 cm by 3 cm.

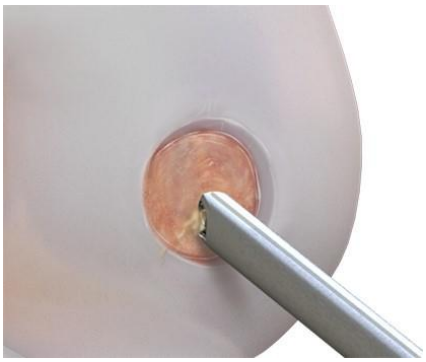
We will check if you are fit enough for surgery. We will also discuss the risks and benefits of the operation.

What does AutoCart involve?

AutoCart™ is a single operation. It needs a general anaesthetic This is different from some other cartilage repair treatments that need two operations to collect, grow and re-implant cartilage. The operation includes the following steps:

1. A camera (arthroscope) is placed in your knee joint.

2. The affected cartilage is assessed and cleared down to fresh bone.
3. The cartilage is collected using a special shaver unit. It is minced into small, but active, pieces.

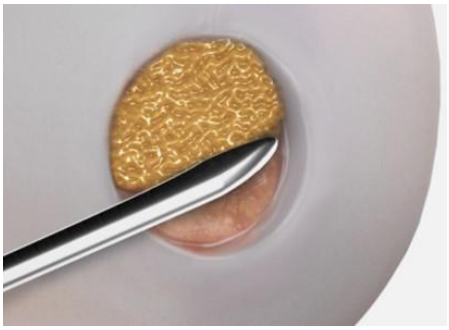
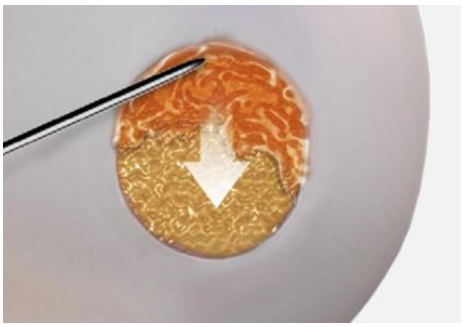


4. A blood sample is taken from your arm whilst you are under the anaesthetic.
5. Around 45mls of blood is spun down in a machine that separates the different cell types. The ‘platelet-rich-plasma’ is removed.
6. This is mixed with the minced cartilage to make a paste.





7. The paste is placed back into the area where the cartilage is missing. This can be done using keyhole surgery or an open operation.
8. The paste grows into the defect to create a new cartilage layer. This fills in the arthritic area.
9. A gel layer made from your blood cells is put on top of the paste to protect the new cartilage layer.

What happens on the day of surgery?

- You will be seen by the consultant surgeon and anaesthetist.
- They will explain and discuss the procedure with you again.
- The operation will take around 1.5 hours including the time taken for your general anaesthetic.
- The operation is usually a day case. This means you can go home the same day of the operation.

What can I expect after surgery?

You will see a physiotherapist on the same day after your operation. We will normally advise that you do not put weight on your leg for 6 weeks. They will show you how to use crutches. They will make sure you can move around safely. They will also arrange follow-up physiotherapy appointments to support your recovery.

You will need to wear a knee brace for about 6 weeks after the operation. The brace will need to worn most of the day including while asleep. You can take it off for washing or showering.

You have an outpatient appointment about 2 weeks after surgery to remove your dressings and to check your wounds have healed. You will then be seen again after 6 to 8 weeks to check how you are doing. We would expect you to restart normal activity at this time. After this time you will have follow-up appointments every 6 to 12 months for at least 2 years.

If you have any concerns after discharge from hospital you will be given the contact number for the consultant surgeons secretary. They can pass on your issues.

What are the advantages of AutoCart™?

- 1 operation to treat a painful cartilage defect.
- Can be used to treat large sized cartilage defects.
- Your own cells are used for treatment (no grafts or synthetic material used). This means there is no risk of your immune system rejecting the treatment.
- Can be done by keyhole surgery. This means you should heal faster, having a faster recovery.
- Your knee joint is maintained. If successful it will delay or prevent the need for bigger surgery

What are the risks of AutoCart™?

Because this is a fairly new procedure, the risks are not yet fully known. Studies so far have shown good short-term results with no major concerns. Possible risks include:

- Failure to improve pain. The risk may be around 20 out of 100 patients (20%) which is the same with other cartilage regeneration techniques.

- General complications which happen after any surgery including:
  - Infections
  - Blood clots
  - Stiffness
  - Damage to other parts of the knee or leg

What are the other treatments available?

- Non-surgical treatment: pain relief, physiotherapy, steroid injections and weight loss.
- Autologous chondrocyte implantation: This needs 2 procedures. The first takes a sample of cartilage cells. These are then sent off and grown. They are implanted in a second operation.
- Autologous osteochondral transfer: suitable for smaller defects only.
- Joint replacement: reliable procedure but has possible major risks. It is not suitable for younger active patients.

Where can I get further information about AutoCart™?

To find out more about the service provided by the University Hospitals of Leicester please contact Mr Randeep Aujla or Mr Arijit Ghosh (lead surgeons) on 0116 258 4993 More details about the procedure can be found at https://arthrex.com/orthobiologics/autocart-all-autologous-cartilage-regeneration

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Health information and support is available at www.nhs.uk or call 111 for non-emergency medical advice

Visit www.uhleicester.nhs.uk for maps and information about visiting Leicester's Hospitals.

To give feedback about this information sheet, contact uhl-tr.informationforpatientsmailbox@nhs.net

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