

# All About Cartilage Repair



Changi  
General Hospital  

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SingHealth

Dear \_\_\_\_\_

Welcome to Changi General Hospital's Cartilage Programme.

This comprehensive treatment programme is tailored to help you recover from your cartilage injury.

## Programme goals

The primary aim of the programme is to restore functional cartilage to your joint to prevent further knee degeneration. The secondary aim is to help you return to your favoured forms of physical exercise.

## How will this programme help you?

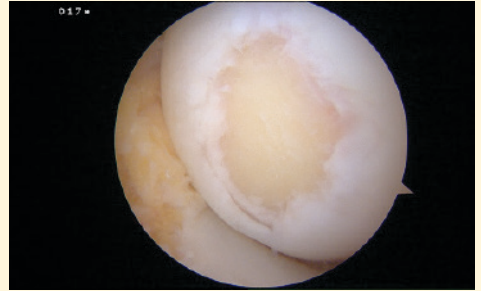
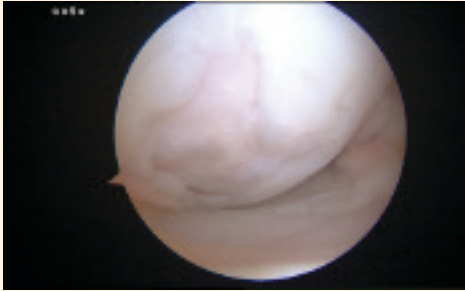
1. We will help you understand your injury and treatment options by providing you with the relevant information.
2. Your progress will be closely monitored by your surgeon and physiotherapist.
3. You will have access to the current rehabilitation methods and gym equipment.
4. We will be objectively scoring your knee function to ensure you are on track with your recovery.



## Understanding cartilage (chondral) lesions

The surfaces of our thigh bone and knee cap are covered with cartilage.

Cartilage stops our bones from rubbing against each other. Injury to cartilage is very common. This can happen over the years due to wear and tear or due to trauma. Unfortunately, cartilage lesions cannot heal by themselves as they lack a blood supply. The damaged cartilage can cause pain and swelling as well as limit movement at the knee joint.



## Untreated chondral lesions

Untreated chondral lesions will not heal. Over time, your knee will become more painful, and daily activities will become more difficult as the knee joint starts to degenerate.



# What are my options?

## 1. Microfracture

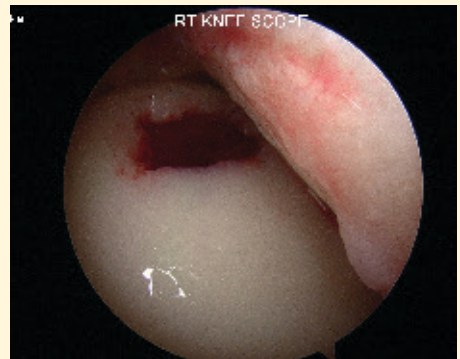
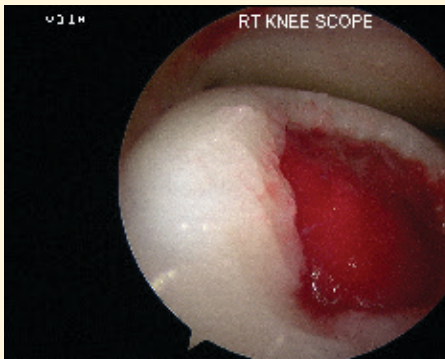
Microfracture is a simple procedure where small holes are drilled into the area of cartilage loss. Stem cells are released and over time these cells form new cartilage.

This newly-formed cartilage is not as strong as your normal cartilage but it is good enough to give you pain relief and get back to healthy living activities. Microfracture is generally suitable for patients with small areas of cartilage loss.



## 2. Autologous Matrix Induced Chondrogenesis (AMIC)

AMIC is a similar procedure to microfracture. Small holes are drilled to release stem cells. However an extra protective scaffold layer is placed over the area where the microfracture has been performed.



## Frequently asked questions

### What happens immediately after the procedure?

You will need to stay one night in the hospital for monitoring. Our care team will follow up with you during your stay and start you on physiotherapy. You will also be issued with a cryotherapy device to help you manage any swelling after the procedure.

### Do I need crutches after the surgery?

You will require crutches during the early post-operative period. Depending on the type and area of the cartilage repair, you will need to reduce the levels of weight-bearing accordingly to protect the repair site from excessive loading. You may also be required to wear a knee brace. The inpatient physiotherapist will show you how to walk safely with crutches before you are discharged.

### How long do I have to use the knee brace?

You will have to use the knee brace for a period between six weeks and two months unless otherwise instructed by your surgeon. The brace is used to protect your knee in risky situations and until you are strong enough to control your knee again. It does not need to be applied when you are resting at home and not walking.



### When can I take a shower?

It is important to keep the wound dry for two weeks after the surgery. You may shower as long as protective coverings are applied to keep the wound dry.



### How much activity can I do after surgery?

In the early post-operative stage, your daily activities are enough load for your knee. Your physiotherapist will slowly guide you back to unrestricted walking and simple low load exercises for your knee. Return to strenuous activities such as running may take up to six months.



# What will my rehabilitation be like?

For the first two months after the surgery, you will be required to see the physiotherapist every week. The frequency will be reduced to once every two weeks or less as you progress with your recovery.

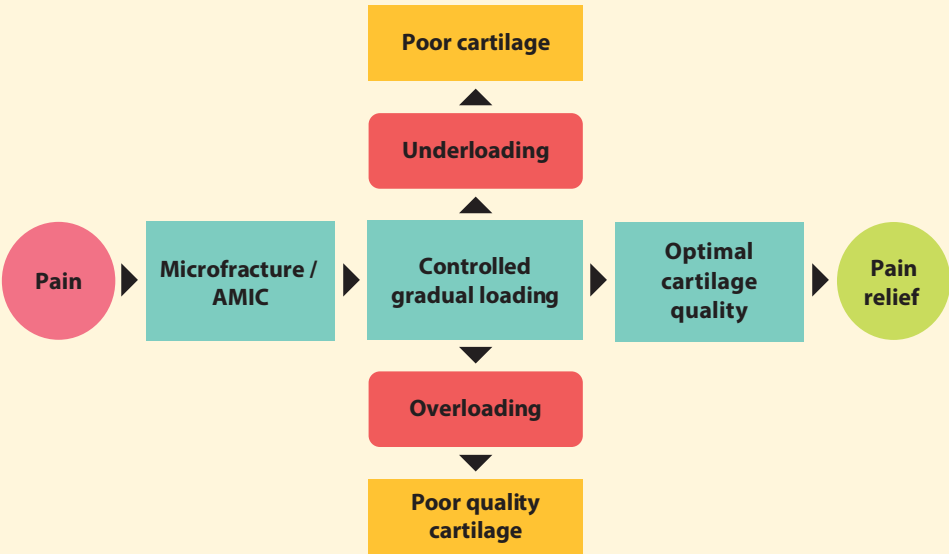
## Your recovery will be divided into four phases:

- 1. Phase 1 (0 to 4 weeks): This is when the stem cells start to multiply into cartilage cells.
- 2. Phase 2 (4 to 8 weeks): Gradually, you will start to increase the load on your knee.
- 3. Phase 3 (8 to 24 weeks): Your new cartilage cells will start to align and adapt to form a strong new cartilage.
- 4. Phase 4 (24 to 52 weeks): Gradual return to full activities.



Depending on your previous levels of activity, rehabilitation may take up to one year or more.

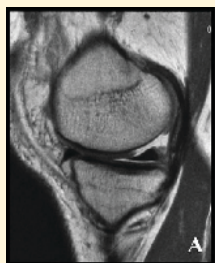
## How do I get the best results?



To get the optimal results, a balance of load is needed during rehabilitation. Too much loading too early may damage the blood clot and new cartilage cells. Underloading may not stimulate the new cartilage cells enough to multiply and lay down correctly. Your surgeon and physiotherapist will be there to guide you throughout your rehabilitation.

### What results may I expect?

With optimal rehabilitation you may expect good pain relief. New cartilage will have formed over the old area of cartilage loss. This new cartilage is sufficient to provide pain relief but it is important to note that it is not as strong as the cartilage that was lost.



A. Pre-operative cartilage loss in the femoral condyle



B. Four months post microfracture. Cartilage has started to fill the defect

### When can I start driving?

This depends on the area of repair. Do check with your surgeon for more information.

### How soon can I return to work?

This depends on the nature of your work. For office-based sedentary work, you may return in one to two weeks. For more active work, you may return within two to three months with some restricted duties. For manual labour/heavy physical work, it may take 8 to 10 months to return to your previous level of work activities.



### When can I return to sports?

The entire process of surgery and rehabilitation can take up to one year or more.



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