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Dr. Stephen Thon

Surgery Guide: Cartiheal Cartilage Restoration Implant

Your guide to Surgery and Recovery

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DISCLAIMER: This information is specifically for patients who have cartilage damage (chondral or osteochondral lesions) in their knee. The CARTIHEAL AGILI-C implant can be used for patients with or without mild-to-moderate osteoarthritis. However, it is not suitable for patients with inflammatory arthritis (like rheumatoid arthritis), active infection, or poor bone quality. Each patient's situation is unique, and this guide provides general information about the procedure and recovery process.

UNDERSTANDING THE CARTIHEAL IMPLANT

The CARTIHEAL AGILI-C implant is a unique cartilage repair device that:

- Repairs both cartilage and bone simultaneously
- Does not require harvesting tissue from other parts of your body
- Is performed in a single surgery
- Uses a natural coral-based material that your body gradually replaces with your own tissue
- Can treat small to large defects (lesions)
- Works even in the presence of mild-to-moderate osteoarthritis



IDEAL CANDIDATES

Best candidates for the CARTIHEAL implant include:

- Patients with cartilage damage in the knee
- Those with or without mild-to-moderate osteoarthritis
- Patients who have failed conservative treatments
- Those with single or multiple lesions
- Patients of any age (including those over 50)
- Those with previous meniscus surgery

Not suitable for patients with:

- Poor bone quality (osteoporosis)
- Inflammatory joint diseases
- Current or recent knee infection
- Severe ("bone-on-bone") arthritis

CLINICAL RESULTS

Research has shown:

- Twice the pain reduction compared to standard treatments
- 96% of patients achieve meaningful improvement
- Better results regardless of age, lesion size, or presence of arthritis
- Significant improvements in daily activities and quality of life
- High success rates even in challenging cases (multiple lesions, prior surgeries)

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MEDICATIONS

You will take multiple medications as part of our opioid sparing protocol. This protocol is designed to have fewer side effects, better, pain relief, and reduced opioid use/addiction rates. There are multiple medicines we provide but none are addictive or habit forming. You will be given a small prescription of oxycodone to take ONLY AS NEEDED. Start taking your medications the day of your surgery. It is important to have started the pain medications before your block wears off and the pain returns. You should also set an alarm for the middle of the night to take your medications.

Sample Medication Schedule below starting first medicines at 8am

<u>Three Times per Day</u>		
8am:	Acetaminophen 1000mg* Meloxicam 7.5mg* Methocarbamol 750mg Omeprazole 20mg Aspirin 81mg	2pm: Acetaminophen 1000mg* Methocarbamol 750mg
		~8pm: (or before bed) Acetaminophen 1000mg* Meloxicam 7.5mg* Methocarbamol 750mg

Can also alternate every 4 hours

DAY OF SURGERY

The CARTIHEAL implant procedure is typically performed as outpatient surgery, meaning you will likely go home the same day. The procedure involves:

- Small incisions for arthroscopic access
- A larger incision to place the implant once confirmed you are an adequate candidate to proceed
- Preparation of the damaged area
- Precise placement of the implant
- No tissue harvesting required
- Typically takes 1-2 hours



DRESSINGS

Your outer dressings may be removed after 48 hours (or the morning of the second day). Leave the steri-strips (little band-aids) over each incision until they fall off naturally. It is normal for your incisions to drain water like fluid that may be tinged red some time after your surgery. If you have some drainage, reapply some clean gauze with tape until the drainage stops. Do NOT apply any lotions, ointments, or other liquids (besides running water) to your incisions until they have completely closed and there are no scabs over the incisions. This usually takes at least 3-4 weeks.

SHOWERING/HYGIENE

You may shower once your dressings are removed on the second day after your surgery. Running water is ok over the incisions, but you may not soak or submerge your incisions in water for a minimum of 3 weeks after your surgery. Soaking/Submerging your incisions too soon can increase your risk of getting an infection.

MOVEMENT/ACTIVITY/CRUTCHES

In most cases, you are encouraged and allowed to walk after surgery with your brace on. Your brace will need to be locked in full extension when ambulating/mobile. Most patients will use crutches for the first week or two but this is dependent on your surgery and injury. Going for light walks multiple times per day is encouraged to keep your blood flow up. Also when at rest make sure to perform ankle pumps multiple times per day to help reduce the risk of blood clots.

TED HOSE/BLOOD CLOT PREVENTION

You will need to wear your Ted Hose (white stocking) at all times for the first two weeks, including when you sleep. You may remove them to change your clothing and to take a shower. Otherwise, they should remain in place at all times. Also when at rest make sure to perform ankle pumps multiple times per day to help reduce the risk of blood clots.

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SLEEP

It is often very difficult to sleep in the first few weeks after surgery. The surgery/anesthesia itself may interfere with your sleep-wake cycle. You need to wear your brace when you sleep for the first two weeks. After that point, you do not need to wear the brace while sleeping.

DRIVING

Returning back to driving is different for everyone but for most is sometime between 2-6 weeks after surgery. It tends to be longer for those who have right leg surgery over left leg surgery. Some requirements to resume driving are: you **MUST** no longer be taking opioid pain medications, you must be able control the steering wheel on your own while adhering to your restrictions with your knee, and your reaction time and stamina must have returned to normal. Discuss driving with your therapist to see if you are ready to return to the road on your own.

RETURN TO WORK

Going back to work is dependent on the type of job you perform. Most people take at least 1-2 weeks off from work after surgery. If you have a “desk” job”, you may return to work whenever you feel comfortable to do so as long as you are able to wear your brace and adhere to the restrictions for your knee. Jobs that require heavy lifting/pushing/pulling/etc... may not be performed until much later in your recovery and may require 3+ months off of work before it is safe to return. Please discuss with your employer what (if any) light duty you may be able to perform during this time. Any paperwork required for missing time off work including FMLA should be directed to ThonCareTeam@occ-ortho.com

PHYSICAL THERAPY

You will start physical therapy within the first 1-2 weeks after surgery. You should go to physical therapy (PT) at least once per week for the first 6-12 weeks. PT may increase after this time point. In addition, they should provide you with exercises to perform on your own at home. You may notice some increase in pain after your PT sessions, this is normal to experience. It should go back down with rest. PT is slow by design during the early phase and then ramps up. This is necessary to give your knee the proper time to heal as strong as possible.

EXPECTED RECOVERY

Your recovery is slow at first, accelerates in the mid-point, and the levels out as you reach full recovery. The image to the right documents how your recovery will go as the implant absorbs into your bone and cartilage grows back into position. Full recovery and return to activity after Cartiheel surgery is generally in the realm of 6-12 months depending on the activity. It takes about 3 months to regain your normal gait and full range of motion, 6 months to feel a noticeable/significant difference, and about 9-12 months to return to activities.

Note: This is approximate. Your recovery may be different depending on the extent of your tear



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FOLLOW UP APPOINTMENTS

You will be seen a total of 6 times after your surgery to ensure your recovery is going smoothly. Full recovery from ACL Surgery is dependent on how severe your injury was to begin with. It is expected to be at least 6 to 12 months in total with gradually increasing times between each visit.

You will be seen at the following intervals after surgery:

- 2 weeks
- 2 months
- 4 months
- 6 months
- 9 months
- 12 months.

THINGS TO LOOK OUT FOR AFTER SURGERY?

Continue to look out for any fevers greater than 100.4 degrees F (38.0 degrees C) or if your incisions/shoulder becomes increasingly swollen, red, warm to the touch, or having drainage that is thick or chalky. In addition, your pain should continue to decrease with time.

FAQ'S

Q: How does the CARTIHEAL implant work?

A: The implant is made from natural coral-based material that provides a scaffold for your body to grow new cartilage and bone. Over time, your body gradually replaces the implant with your own tissue.

Q: Will I need any tissue harvested from other parts of my body?

A: No, the CARTIHEAL implant is an "off-the-shelf" solution that doesn't require harvesting any tissue from your body. This is one of the advantages of using Cartiheal over other cartilage restoration procedures.

Q: What makes CARTIHEAL different from other cartilage procedures?

A: CARTIHEAL is unique because it repairs both cartilage and bone simultaneously, works in the presence of arthritis, and doesn't require tissue harvesting, and does not require multiple surgeries to implant.

Q: How long will the recovery take?

A: While everyone's recovery is different, most patients see significant improvement by 6 months, with continued improvement up to 12 months or longer.

Q: What are the success rates?

A: Clinical studies show that about 77.8% of patients have significant improvement, with better results than standard treatments across all age groups and lesion types. Notice this does not indicate that all patients are "pain-free". Some pain even after the full recovery is still to be expected, but the hope is that it is significantly decreased.

Q: Can I have this procedure if I've had previous knee surgeries?

A: Yes, the CARTIHEAL implant can be used in patients who have had previous surgeries, including meniscus surgery. In fact, studies show high success rates even in challenging cases with prior surgeries.

Q: Is there an age limit for getting the CARTIHEAL implant?

A: No, there isn't a *strict* age limit. The implant is suitable for patients of any age, including those over 50, as long as they meet the other eligibility criteria. Clinical results show positive outcomes regardless of age.

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Q: How big does my cartilage defect need to be for this procedure?

A: The CARTIHEAL implant can treat both small and large defects (lesions). It's also capable of treating single or multiple lesions in the same knee.

Q: Will I be able to feel the implant in my knee?

A: Once healed, you shouldn't feel the implant. The implant is gradually replaced by your own tissue as your body heals, creating a natural repair of both cartilage and bone.

Q: If I have mild arthritis, can I still get this procedure?

A: Yes, one of the unique benefits of the CARTIHEAL implant is that it can be used in patients with mild-to-moderate osteoarthritis. However, it's not suitable for severe "bone-on-bone" arthritis or inflammatory arthritis like rheumatoid arthritis.

Q: How long will I need to take off work after the surgery?

A: Recovery time varies by individual and type of work. For office work, most patients can return within 1-2 weeks. More physically demanding jobs may require a longer recovery period, which your surgeon will discuss with you.

Q: Will I need someone to help me after surgery?

A: Since this is typically an outpatient procedure and you'll be using crutches initially, it's recommended to have someone help you for at least the first few days after surgery, particularly with transportation and daily activities.

Q: Is physical therapy required after the procedure?

A: Yes, physical therapy is an important part of the recovery process. It begins with basic exercises focusing on protection and range of motion (0-6 weeks), then progresses to more advanced strengthening and functional activities (6-12 weeks).

Q: What makes this different from a total knee replacement?

A: The CARTIHEAL implant is a targeted repair of damaged cartilage and bone areas, preserving your natural knee joint. It's much less invasive than a total knee replacement and should not prevent you from undergoing any procedures in the future.

Q: How do I know if the procedure is working?

A: Most patients experience gradual improvement in pain and function over time. Clinical studies show that 96% of patients achieve meaningful improvement, with significant pain reduction compared to standard treatments. Your surgeon will monitor your progress through regular follow-up appointments at 2 weeks, 8 weeks, 4 months, 6 months, and up to 1 year.

Disclaimer: Everyone's recovery is different. The above information is merely a guideline and your individual recovery may be different based on your unique situation and circumstances. It is important to continue to see Dr. Thon at the scheduled intervals. As always, if you have any questions or concerns with any of the above information, please call our office.

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