



TWIN CITIES ORTHOPEDICS

Knee Arthritis and Knee Replacement

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Please keep in mind the following information is generalized and certain details may differ for individual patients

WHAT IS KNEE ARTHRITIS?

- Arthritis is an issue with any joint in which the cartilage (lining at the ends of the bones) simply wears out. Cartilage is a structure that produces minimal friction during motion and has no nerve endings. With minimal friction created during motion, you can jog/jump/run/swim etc. with little to no irritation within the joint. With no nerve fibers going to healthy cartilage in the healthy knee we don't feel or notice our joints with activity because there is no input from our knee to our brains.
- Minimal friction + no nerve innervation = no pain with activity.
- When the cartilage of our knee wears out for various reasons, we start to load the bone that is underneath the cartilage. This is like sandpaper and creates a lot of friction and irritation in the joint. There are also millions of nerve fibers that go to bone so every activity that moves or loads the joint can become very painful.
- Knee replacement re-creates this low friction and non-painful joint environment.

WHAT ACTIVITIES SHOULD I DO WHEN I HAVE KNEE ARTHRITIS?

Low-impact aerobic activities that do not put high pressure on your knee such as brisk walking, cycling, swimming, water aerobics, light gardening, group exercise classes, elliptical, yoga, and dancing.

WHAT ACTIVITIES SHOULD I AVOID WHEN I HAVE KNEE ARTHRITIS?

In general, any activities that cause increased pain or swelling during activity should be avoided. Activities such as running, basketball, tennis, heavy weight lifting, or even walking long distances can aggravate your knee arthritis symptoms. Repetitive motions such as squatting or knee lunges can also put increased pressure on your knee and make your knee pain worse. You may also notice increased stiffness if by remaining in one position for too long, so avoiding prolonged immobilization is also helpful.

WHEN SHOULD KNEE REPLACEMENT BE CONSIDERED?

Patients that are suffering from osteoarthritis of their knee that have failed conservative treatment options. Conservative treatment options consist of: weight loss, activity modification, bracing, various types of injections, medications, and physical therapy.

The patient will usually try these options and if they are able to participate in desired recreational activities and perform activities of daily living with tolerable symptoms then it is reasonable to put off knee replacement. However, if the patient is becoming sedentary due to inability to participate in activities and their overall quality of life is declining because of joint pain, then a knee replacement is a reasonable option.

It is important to understand the goal of conservative treatment is to alleviate symptoms associated with arthritis. None of these measures can actually put cartilage back where it has worn out.

WHY SHOULD I CONSIDER DELAYING KNEE REPLACEMENT IF I AM CONSIDERED A CANDIDATE?

Ultimately the decision for knee replacement is the patient's decision as long as it can be done safely with a low risk of complications and optimized modifiable risk factors (diabetes, obesity, heart disease, etc.). The reason to consider delaying knee replacement is that some of the conservative treatments mentioned above can decrease pain and increase function. If this is possible and the patient has a reasonable quality of life, then living with arthritis is very reasonable. Joint replacements can wear out just as any other mechanical device can. By delaying the knee replacement, you decrease the likelihood that you would need another knee replacement in your lifetime. If conservative treatments are not allowing you to maintain a healthy lifestyle and do the things that are important to you in life, then a knee replacement would be an option.

HOW LONG CAN I EXPECT MY NEW KNEE REPLACEMENT TO LAST?

Studies show that after 20 years, the majority of knee replacements still remain in place. This is overall very encouraging. The newer prostheses and techniques are likely to be significantly superior to this data as they are better and have solved some of the reasons for failure in the older models.

WHEN DO I KNOW IT IS TIME FOR KNEE REPLACEMENT

If your physician has diagnosed you with severe knee osteoarthritis and conservative treatment failing to relieve symptoms and/or maintain a healthy quality of life, then it may be time to consider a knee replacement. Remember that a knee replacement is an ELECTIVE surgery. You should not be told that you NEED a knee replacement and ultimately the timing is dependent on your symptoms and quality of life.

AM I TOO YOUNG OR TOO OLD FOR KNEE REPLACEMENT?

Age by itself is never a reason you cannot get surgery. Your overall health is the main concern when considering any surgery.

WHAT IS ROBOTIC-ASSISTED KNEE REPLACEMENT?

(Please see the separate educational document that provides video link and outlines in detail the benefits of robotic assisted knee replacement)

WHAT IS THE DIFFERENCE BETWEEN A PARTIAL AND TOTAL KNEE REPLACEMENT?

A partial knee replacement is a surgery that replaces the bone surfaces of only part of the knee. This can be considered if your arthritis is isolated to one area of the knee. If your arthritis is not localized to one area, then typically a total knee replacement is the best option.

WHERE DO YOU PERFORM SURGERY?

Hospitals:

[Maple Grove Hospital](#)

[North Memorial Hospital](#)

[Orthopedic Institute](#)

Surgery Centers:

[North Memorial Ambulatory Surgery Center \(in Maple Grove\)](#)

[Plymouth Orthopedic Surgery Center](#)

WHAT TYPE OF ANESTHESIA DO YOU USE?

Typically spinal anesthesia, but this is a shared decision made by the patient, Dr. Bircher and the anesthesiologist. There are cases when general anesthesia is elected. A peripheral nerve block will also likely be performed by anesthesiologist (typically adductor canal block).

HOW LONG IS THE KNEE REPLACEMENT SURGERY?

60-90 minutes

HOW LONG WILL MY INCISION BE?

An incision is made over anterior aspect of the knee. The incision will be as long as necessary to place the components in correctly which is usually about 6 inches in length. Any significant previous scars will be incorporated into the incision if possible.

Typically, all sutures used to close the wound will be underneath the skin and no suture removal will be required.

WHAT TYPE OF COMPONENTS DO YOU USE?

Cobalt chromium and titanium components. These components can be secured to the bone with bone cement or non-cemented/press fit in younger and more active patients when bone quality allows. The articulating surfaces are highly cross-linked polyethylene on cobalt chromium.

WHAT ARE THE RISKS INVOLVED WITH KNEE REPLACEMENT?

Risks include infection, blood loss, blood clots, and damage to nerves and arteries. Every precaution is taken to minimize these risks, including the use of pre and post surgery antibiotics, short term use of anticoagulants or compression devices and careful surgical technique.

HOW DO YOU MANAGE INFECTION RISK?

- Infection is a rare (approx. 1 % or less) complication but can be a big problem if it occurs. Prevention is the key! The most important thing to decrease your risk of infection is to optimize any medical comorbidities. Common risk factors include:
 - Diabetes (lower HbA1c to less than 7.0)
 - Obesity (lower BMI below 35. BMI greater than 40 will likely disqualify you from joint replacement as your risk of infection is significantly higher)
 - Smoking (you must quit smoking prior to an elective knee replacement)
 - Optimizing any infectious or recurrent infectious issues prior to surgery (bladder infections, ulcers, dental issues, etc.).
- Several preventative measures are also taken during surgery:
 - During surgery, the operating room is sterile, all members of the sterile operating room team wear space suits with ventilation to minimize risk of contamination.
 - You receive antibiotics prior to the incision being made so you have antibiotics ready to fight any bacteria that your body encounters.
 - Dr. Bircher performs several washes with irrigation and an antibacterial wash during surgery.

Even with all the preventative measures and pre-op optimization, there is no such thing as a zero-risk surgery. The trouble with infection of a prosthetic knee is that if bacteria becomes adherent to the metal implant, it can become difficult to get rid of and may require full removal of the knee implant. Again, risk of infection is very low but it is important to understand that the risk remains for all patients undergoing knee replacement and every effort toward avoiding this complication should be prioritized.

HOW LONG WILL I BE IN THE HOSPITAL?

Nearly all patients will spend 1 night in the hospital or care suite and then go home the following day (Postoperative day 1). Prior to discharge we will ensure you are medically stable, mobilizing safely with physical therapy, and pain is well controlled.

WILL I GO HOME OR TO A REHABILITATION FACILITY AFTER KNEE REPLACEMENT?

Nearly all patients will discharge home after knee replacement. In rare circumstances, patients may require a short rehabilitation setting in order to gain the skills needed to safely return home. If there are concerns with returning home immediately following knee replacement surgery, this can be discussed with the social workers and therapist that work with you postoperatively.

WHAT ARE MY RESTRICTIONS AFTER KNEE REPLACEMENT?

You will begin weight bearing and knee range of motion exercises immediately.

In order to increase the longevity of your knee replacement, patients are encouraged to stay away from running, jumping, and other high impact activities. Common activities for patients after knee replacement include but are not limited to walking, hiking, biking, golf, pickleball, and tennis.

WHEN WILL I BE ABLE TO WALK AFTER KNEE REPLACEMENT?

You will be able to put full weight on your new knee the day of surgery. You will probably need a walker at first but should be able to progress to walking without any assistive devices, usually at 2-4 weeks after surgery. This is directed by a patient's confidence and comfort.

WILL I HAVE TO DO PHYSICAL THERAPY AFTER KNEE REPLACEMENT?

Yes, physical therapy is very important. Physical therapy is instrumental in giving patients all the benefits of their total knee replacement. Therapy will be scheduled 1-2 times a week for a number of weeks after surgery with emphasis being placed on obtaining full knee range of motion, gait normalization, and lower extremity strengthening. Patient's will be asked to do a home exercise program where they will do exercises given to them by physical therapy to ensure they are continuing to improve even when not attending formal physical therapy sessions.

WHEN CAN I DRIVE A CAR AFTER KNEE REPLACEMENT?

- You should wait to drive a car until after your first follow up appointment after surgery (typically 2-3 weeks postoperative).
- Do not drive while taking narcotic pain medicine because it can impair your judgment and ability to operate the car safely.
- If it is your left knee that is replaced you may start driving as soon as you are not taking narcotic pain medication during the day and walking with a cane or independently.
- If your right knee is replaced, it will be around 4 weeks before you will be able to drive.
- Do not use your involved leg to operate machinery until at least 6 weeks after surgery.

WHEN CAN I RETURN TO WORK AFTER KNEE REPLACEMENT?

- Discuss returning to work with Dr. Bircher or his Physician Assistant.
- Ask your occupational therapist how your activity restrictions will affect your hobbies.
- You can go back to work when you feel you are ready. Patients with desk jobs who are motivated to return can get back to work in 2-4 weeks, but those with jobs requiring strenuous activity usually need 3 months. We will work with you to determine when you should go back and if any accommodations are needed.

WHEN CAN I RESUME PLAYING GOLF?

You may begin swinging a club at 4-6 weeks post-op. Start with dry swings without a club, putting, and chipping and then advance as you are comfortable. Most patients are playing and hitting a driver at least 3 months post op.

WHEN CAN I RESUME YOGA?

You may resume yoga as soon as you feel comfortable, typically 6 weeks after surgery.

WHAT CAN I USE FOR PAIN AFTER SURGERY?

Our typical protocol involves a multimodal pain management strategy combining Tylenol, NSAIDs, and short narcotics (Oxycodone) as appropriate.

WHO PRESCRIBES MY MEDICATION?

Dr. Bircher or his Physician Assistant will prescribe you post-operative medications. In addition to the pain medicines, you will also be prescribed a stool softener, a medication to prevent blood clots, and occasionally a muscle relaxer. Any medication not prescribed by Dr. Bircher should continue to be prescribed by the physician who initially prescribed it for you. Dr. Bircher and his staff do not manage high blood pressure, heart disease, asthma, diabetes, and other chronic or acute medical conditions that are not orthopedic in nature. Dr. Bircher's team will typically give you pain medication in the immediate postoperative period and antibiotics that will be needed for prophylaxis for any dental or surgical procedures.

WILL I NEED TO TAKE MEDICATIONS TO PREVENT BLOOD CLOTS

Yes, typically a baby aspirin will be prescribed to be taken two times a day for four weeks after surgery. If you are previously taking a blood thinning medication (Coumadin, Eliquis, Xarelto, etc) you will likely be transitioned back to this medication in the days following your knee replacement. If you have a history of blood clot, you may also require a stronger blood thinning medication to prevent blood clot.

HOW SOON CAN I TAKE A BATH OR SHOWER?

You can shower as soon as you feel comfortable doing so. You will have a waterproof dressing that will stay in place for 7 days after surgery. After the dressing is removed, you will still be allowed to shower but you will need to wait to submerge your incision in a pool/tub until fully healed (typically by 6 weeks after surgery).

SHOULD I USE ICE OR HEAT AFTER KNEE REPLACEMENT?

Ice should be used for the first several weeks after total knee replacement surgery, particularly if you have a lot of swelling or discomfort. Once the initial swelling has decreased, you may use ice and/or heat.

HOW LONG DO I HAVE TO WAIT AFTER MY KNEE REPLACEMENT TO HAVE DENTAL WORK DONE?

3 months. This includes routine cleanings.

DO I NEED TO TAKE ANTIBIOTICS FOR DENTAL CLEANINGS OR ANY OTHER PROCEDURES AFTER KNEE REPLACEMENT? FOR HOW LONG AFTER SURGERY?

We recommend taking antibiotics in all of the following settings:

- ANY dental procedure - check-up/cleaning visits included
- ANY infection (sinus, lung, urinary tract, skin etc.)
- Colonoscopy/Sigmoidoscopy
- Cystoscopy/Genitourinary instrumentation
- Prostate and/or bladder surgery
- Kidney surgery
- Barium Enema

While this remains a controversial topic, we recommend lifelong protection.

Typically we will prescribe Amoxicillin 2mg to be taken 1 hour prior to the procedure. If you are allergic to this medication, alternatives can be discussed.

WILL MY KNEE REPLACEMENT BE A PROBLEM WITH TRAVEL/METAL DETECTORS?

It is possible that metal detectors such as those at airports may be sensitive enough to detect the implant. Please let the TSA agent know that you have had a knee replacement as you may need additional screening with a hand wand. As such it is advised that you allow for extra time in security when at the airport. We no longer provide cards/documentation of knee replacement as these are no longer necessary.

WHEN WILL MY FOLLOW UP APPOINTMENTS OCCUR?

- 2-3 weeks postoperative: Usually with Dr. Bircher's Physician Assistant
- Wound check, x-ray, wound and motion check, discussion of pain management and DVT management
- 6 weeks post op: Usually with Dr. Bircher or Physician Assistant
Wound and motion check, discussion of progress and activities
- 3 month
- Wound and motion check, discussion of progress and activities
- 5-10 years for x-ray and evaluation

*Patients can always contact the clinic between visits for questions or concerns.

Dr. Bircher is a member of the American Association of Hip and Knee Surgeons (AAHKS) and recommends you visit their patient education website as another great resource for information related to knee arthritis and knee replacement: **hipknee.aahks.org**