Sutter Health
Palo Alto Medical Foundation

Total Knee Replacement

Patient Guidebook

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About our Surgeons

James Hartford, M.D.

James Hartford, M.D., received his medical degree from Dartmouth Medical School in 1989 after graduating from Princeton University. He completed a two-year general surgery preliminary residency at Harvard-New England Deaconess Hospital in Boston and an orthopedic surgery residency at Dartmouth-Hitchcock Medical Center in Lebanon, N.H. He also completed a fellowship in adult reconstructive surgery at Stanford University Medical Center.

Dr. Hartford served for six years as assistant professor in the Division of Orthopedic Surgery at the University of Kentucky College of Medicine and was residency director for orthopedic surgery at the University of Kentucky Chandler Medical Center in Lexington, Ky. He also was chief of orthopedic surgery at the Veterans Administration Medical Center in Lexington. In those roles, he gained substantial experience with hip and knee replacements, including many complex cases. Dr. Hartford has published and lectured extensively on joint replacement and other topics in orthopedic surgery. He joined PAMF in 2002 and is board-certified in orthopedic surgery.

John Lannin, M.D.

John Lannin, M.D., received his medical degree from the University of Minnesota Medical School in 1978 after graduating from Stanford University. He completed an internship at the Hennepin County Medical Center in Minneapolis and a residency in orthopedic surgery at the Minneapolis Veterans Administration Hospital. Dr. Lannin completed fellowship training in total joint/adult reconstruction at the University of South Florida.

Dr. Lannin joined PAMF in 1996 after working in private practice in Menlo Park and Redwood City. He is board-certified in orthopedic surgery and is a voluntary clinical faculty member at the Stanford University School of Medicine Department of Orthopedics, where he has participated in clinical practice and research. His clinical interests include advancement in total joint techniques, such as new approaches, new materials and computer-assisted surgery, as well as hip resurfacing.

Brad Graw, M.D.

Brad Graw, M.D., received his medical degree from Georgetown University School of Medicine in 2003 after graduating from Yale University. He completed his internship and orthopedic surgery residency at the Georgetown University Medical Center. He then moved to California and completed a fellowship in adult reconstructive surgery at Stanford University Medical Center and a sports fellowship at the SOAR clinic.

Dr. Graw joined PAMF in 2016 after working in private practice in Redwood City. He is board-certified in orthopedic surgery and his practice entirely focuses on hip and knee reconstructive surgery. His experience in sports medicine is helpful for patients considering joint preservation options. Recent advances in his practice include anterior total hip replacement, computer-assisted surgery and improving the patient digital experience. He has presented on these topics at national meetings and continues to collaborate with his colleagues at PAMF to improve patient safety, satisfaction, and long-term outcomes.

Introduction to Total Joint Replacement

Welcome to the Center for Total Joint Replacement at the Palo Alto Medical Foundation. PAMF offers knee and hip replacement surgery, as well as hip resurfacing in a select group of patients. We also perform “revision” operations to remove previous joint replacements that no longer work well and install new ones.

Total knee and hip replacements are the most common procedures performed at PAMF’s Center for Total Joint Replacement. Our surgeons James Hartford, M.D., John Lannin, M.D., and Brad Graw, M.D., together perform over 1000 joint replacements per year.

The Center for Total Joint Replacement is part of the orthopedics department at PAMF, one of the first, largest and most respected multispecialty medical groups in California. PAMF offers state-of-the-art technology, including an electronic health record that our physicians can access from anywhere they provide care.

Getting Started

The first step in the total joint replacement process is to schedule a consultation with either Drs. Hartford, Lannin or Graw. You may call the Center for Total Joint Replacement at 650-853-2018 to make an appointment with one of the surgeons. At the consultation, the surgeon will discuss your individual medical needs, conduct an examination, review imaging studies, make a recommendation for both operative and non-operative treatments, and provide you with more information about surgery.

After your consultation, you should take time to evaluate whether having total joint replacement is right for you. When you are ready, our staff will work with you to schedule a time for surgery.

Scheduling Your Surgery

Once you have decided to have total joint replacement, you may contact your surgeon’s nurse at 650-853-2018 to set a date for surgery. Once the date has been determined, our nurses will let you know what needs to be completed before surgery (i.e., laboratory testing, medical evaluations, Sequoia Hospital pre-operative visit and other necessary preoperative procedures).

Common Reasons to Have a Total Knee Replacement

Drs. Hartford, Lannin and Graw may have already discussed with you the reasons why a total knee replacement may be a good option for your specific health needs. Patients find that knee replacements can ease pain and improve mobility and function. This allows patients to lead more active and fulfilling lives.

Joint replacement procedures are generally performed to address persistent pain that is not alleviated by non-surgical means, such as pain medications, injections, use of assistive devices/ braces and/or physical therapy.

Below are some common reasons for having a total knee replacement.

Osteoarthritis

The most common cause of arthritic pain is osteoarthritis, which occurs when the cartilage between bones wears away. Cartilage is the white substance at the end of bones that helps joints move with less friction. Cartilage thickness peaks between ages 18 and 20, and your body does not produce more after this time. As people age, cartilage wears away, bones rub against each other and joints become painful and stiff. When pain from this condition becomes severe, some patients find they avoid using the joint, which weakens surrounding muscles and makes it even more difficult to have full mobility.

Arthritis can be accelerated by having family history of the condition, being overweight and having had previous surgeries and/or injuries to the joint, even if that injury occurred decades earlier. Injury may throw the joint slightly off balance, causing the cartilage to wear down faster over the years.

Rheumatoid Arthritis

A small percentage of patients seen at PAMF for total joint replacement have rheumatoid arthritis, a chronic disease in which the body's immune system attacks and destroys articular cartilage.

Benefits and Risks of Total Knee Replacement

Below are some of the ways in which patients may **benefit** from having total knee replacement surgery:

- Increased comfort and reduced joint pain
- Increased activity level, allowing patients to live a more normal daily life
- Increased walking distance and speed
- Reduced stiffness

Total knee replacement operations are successful and long-lasting for more than 85-90 percent of patients. Nevertheless, joint replacement is major surgery and, like any such procedure, carries **risks and potential complications**. Your surgeon will discuss these factors with you at your initial consultation. Complications from total knee replacement include, but are not limited to, the following:

- Blood clots in the legs or lungs
- Infection
- Nerve injury
- Blood vessel injury
- Stiffness that may require surgical manipulation
- Persistent or unrelieved pain
- Blood loss during surgery that may require transfusion
- Mechanical failure of the implant or loosening of the cement
- Risks associated with anesthesia during surgery
- Organ failure
- Heart attack, stroke or death

Minimally Invasive Surgery

Drs. Hartford, Lannin and Graw each perform minimally invasive knee replacement surgery. MIS involves a smaller incision than traditional joint replacement. A traditional knee replacement requires a 6- to 12-inch-long incision, while MIS requires only a 4- to 5-inch incision.

Minimally invasive total knee replacement is a technique developed to minimize the negative effect of surgery on the quadriceps muscle (the muscle that runs along the front of your thigh). When you straighten out your knee while you are sitting, you feel this powerful muscle working. The quadriceps muscle ends in the quadriceps tendon, which attaches to the patella (kneecap) and provides much of the power to the knee joint.

MIS should not be confused with arthroscopic procedures that treat torn cartilage or meniscus and require only very small stab incisions. In MIS procedures, surgeons still must make an incision large enough to insert the implant components.

Potential Advantages of MIS

Potential advantages of MIS include reduced blood loss, less damage to the surrounding tissues, shorter hospital stay and generally faster rehabilitation.

However, MIS is not suitable for everyone. Appropriate candidates for this type of surgery are generally at a healthy weight and in good overall health. Individuals who are obese, have other medical problems or have had previous knee surgery are generally less suitable candidates

Partial Knee Replacement

Drs. Hartford, Lannin and Graw also perform partial knee replacements, which replace only one-third of the knee joint, in select cases. While most individuals who suffer from arthritis of the knee have arthritis in two or three areas of the knee – the medial, lateral and/or patellofemoral compartments – some individuals have arthritis affecting only one of the compartments. These individuals may be candidates for partial knee replacement.

Your surgeon will identify if you are an appropriate candidate for this type of surgery. Patients will ideally have a normal body weight and excellent range of motion without severe knee deformities or instability. Before deciding to proceed with a partial knee replacement, an MRI may be obtained, in addition to any X-rays, in order to better assess the ligaments and cartilage in the other compartments.

Potential Advantages of Partial Knee Replacement

Patients with partial knee replacement generally have a more natural feel after the surgery compared to patients who underwent a total knee replacement, partially due to the retention of the anterior cruciate ligament (ACL). In addition, the surgery is less invasive and hospital stay and recovery times are shorter.

Disadvantages of Partial Knee Replacement

Unfortunately, partial knee replacement may not last as long as total knee replacement and patients may develop arthritis in one or more of the remaining compartments of the knee. Either of these would require conversion to a total knee replacement at a future time.

Preoperative Care

Preoperative Examination

Prior to your total knee replacement, you will need to have a check-up from your primary care physician to determine if you are healthy enough for surgery. This is best done 20-30 days before your scheduled surgical date. The check-up will generally include a physical examination, heart and blood tests, X-rays and urine analysis. During the exam, you should inform your physician about any medical or surgical problems, as well as provide a list of medications you are currently taking and any allergies to medications. You may see your own physician or we can recommend a primary care physician at PAMF. If you choose to see a non-PAMF physician, **a copy of your evaluation must be faxed** to the Center for Total Joint Replacement at **650-853-6088** 1-2 weeks prior to surgery.

You should also consider where you would like to have outpatient physical therapy, which usually begins 2-3 weeks after your knee replacement. However, your individual timetable may vary depending on the length of your hospital or nursing home stay, your progress with in-home physical therapy and your individual needs. Please confirm that your chosen facility is approved by your health insurance. Then let us know the name and location of that facility so we can fax a referral. This will allow you to schedule your appointments in advance, since some locations tend to fill up quickly. Our team can provide you with recommended physical therapy offices.

Preoperative Laboratory Testing

Within 30 days prior to surgery, you must have blood tests, an electrocardiogram and a urine analysis done (if you have urinary symptoms) either at the Palo Alto clinic or through your non-PAMF primary care physician. The blood tests include, but are not limited to, complete blood count, metabolic panel and clotting factors. If you choose to have a non-PAMF physician perform these tests, **please fax the test results** to the Center for Total Joint Replacement at **650-853-6088** 1-2 weeks prior to surgery.

Dental Care and Total Knee Replacement

Proper dental hygiene is essential for good health. We may ask you to see a dentist before surgery to check for tooth or gum problems, as bacteria in your mouth can travel through the bloodstream and infect the replaced joint. The dentist will help identify any dental issues or tooth decay that may develop into a dental infection. This must be treated before total knee replacement surgery. After total knee replacement, you will need to take antibiotics before any dental work, including routine cleanings for as long as your surgeon recommends. We suggest delaying any routine dental work for at least 3 months after total knee replacement.

Blood Transfusion

A very small number of patients who undergo total knee replacement require blood transfusion. Patients who have a low blood count may feel lightheaded or have low energy, which might prevent them from doing therapy. These patients may benefit from a blood transfusion. For those who require a blood transfusion, blood may be obtained from a blood bank. The blood is thoroughly screened for correct blood type and blood-borne infections.

Preoperative Total Joint Replacement Seminars at PAMF

PAMF offers two total joint replacement educational seminars at our Palo Alto center, hosted by Drs. Hartford and Graw. The seminars provide information on the upcoming joint replacement procedure and an opportunity for patients and significant others to ask questions. The seminars are informal and patient interaction is encouraged. For more information, including dates and times, call the Center for Total Joint Replacement at **650-853-2018.** Please call before attending to ensure the seminar has not been rescheduled due to emergency surgery commitments.

Preoperative Gait Training Class

Prior to surgery, it may be a good idea to attend PAMF's Preoperative Gait Training Class. The class is taught by staff and educators from PAMF's physical therapy department and Center for Total Joint Replacement. The class is designed to prepare you for physical therapy after surgery and to get you acquainted and comfortable with the equipment you will be using. Call the physical therapy department at **650-853-3355** for dates and times of the class and to sign up.

Medication

You may take your regular prescription medication up to the day of surgery. However, you should stop taking aspirin and anti-inflammatories, such as ibuprofen, naproxen or Celebrex, 1 week prior to surgery. If you are taking a blood thinner, such as warfarin, Eliquis or Xarelto, your surgical team will tell you when to stop taking this medication. Bridging with Lovenox injections may be necessary. Please check with your primary care doctor and/or cardiologist. Vitamins and herbal medications should be discontinued 1 week prior to surgery. These include, but are not limited to, vitamin E, turmeric and fish oil, which have blood thinning properties. You may resume taking vitamins and herbal medications 6 weeks after surgery.

Diet

It is important to maintain a healthy, well-balanced diet prior to surgery. You may NOT eat solid food after midnight prior to surgery, but may have regular meals until that time. You may drink clear liquids (water, Propel, Gatorade, tea or black coffee without cream or milk) up to 4 hours before arriving at the hospital. You may take your morning medications with a sip of water. Good nutrition before and after surgery is important. Because constipation is common following surgery, patients are advised to add extra fiber, such as bran, to their diet or to take an over-the-counter laxative like Miralax for 3-4 days prior to surgery.

Diabetes Care

It is important to keep your glucose levels under control both before and after surgery, which will help with wound healing and infection prevention. We strongly recommend hemoglobin A1C levels below 7.0 and fructosamine levels below 260. Please consult your primary care physician and/or endocrinologist for help with diabetes management.

Tobacco Use and Smoking Cessation

If you smoke cigarettes or use other tobacco products, it is imperative to stop these behaviors as soon as possible before surgery and to avoid resuming smoking after surgery. Tobacco not only can lead to mouth, throat and lung cancer, but to COPD, heart disease and wound healing issues, which can then lead to infection. Please contact your primary care doctor or call **510-869-8833** (option 4) for Sutter's Smoking Cessation Workshop.

Preoperative Checklist

Three or More Weeks Prior to Surgery

- Prepare a list of all medications (prescription and over-the-counter), vitamins and other supplements you take, and review this list with your surgeon.
- Have a preoperative check-up with your primary care physician, including a physical exam, heart and blood tests, X-rays and urine analysis (if you have urinary symptoms).
- Have a dental exam to check for tooth and gum problems, as bacteria in your mouth can migrate and infect the replaced joint.

One Week Prior to Surgery

- Stop all vitamins and supplements (Vitamin D, Vitamin E, fish oil, turmeric, etc.)
- Stop taking all anti-inflammatory drugs, such ibuprofen (Motrin, Advil) and naproxen (Aleve). Acetaminophen (Tylenol) is OK.
- Stop taking all aspirin and blood thinning medications when instructed (ie. warfarin/ Coumadin, Eliquis, Pradaxa, and Xarelto). Bridging with Lovenox injections may be necessary.
- Please call your insurance company to confirm that Lovenox, Oxycontin and Celebrex are covered under your plan. If they will need prior authorization, please contact us to initiate authorization.
- Make arrangements for transportation to and from surgery at Sequoia Hospital in Redwood City.
- Begin eating a nutritious, high-fiber diet, as constipation is common after surgery.
- Pack a bag for your hospital stay, including loose-fitting, comfortable clothes that are easy to take on and off, elastic-waist pants and slip-on shoes.

The Night Before Surgery

- Do NOT eat solid food after midnight prior to surgery. However, you may have clear liquids (water, Propel, Gatorade, tea or black coffee without cream or milk; sugar is OK) up to 2 hours before arriving at the hospital.
- Generally, you may take your blood pressure or thyroid medication the morning of surgery with a sip of water unless your blood pressure medication is an ACE inhibitor or an ARB. Common names in these categories include, but are not limited to: lisinopril (Zestril), benazepril (Lotensin), enalapril (Vasotec), losartan (Cozaar), valsartan (Diovan), telmisartan (Micardis), and olmesartan (Benicar).
- Using the chlorohexidine soap you received from Sequoia Hospital, wash from the neck down as directed on the package.
- Sleep on clean sheets and in clean pajamas.
- No pets on the bed.

The Day of Surgery

- Shower in the morning, again using the special chlorhexidine soap. Do not use hairspray, hair gel or mousse, makeup, deodorant, nail polish, hairpins or moisturizer.
- Do not wear contact lenses. Bring a case for your glasses.
- Do not wear jewelry or other valuables.
- Brush your teeth and use mouthwash.

Hospitalization

Preoperative Holding

After you have checked in at Admitting/ Registration on the Ground floor, you will be escorted by the nurses to the preoperative waiting area. Your family may stay with you during this time. Your personal belongings, such as glasses or dentures, will be collected for safekeeping during surgery. At this time, you will be visited by your surgeon and the anesthesiologist. Your surgical site will be marked, shaved (if necessary) and wiped with a special antimicrobial solution (chlorhexidine). You may receive either a spinal (regional) block or general (total) anesthesia. This decision will be made after you consult with the anesthesiologist who will attend your surgery. You will have an IV inserted before leaving the preoperative holding area on your way to the operating room.

During Surgery

Because infection of the joint replacement site can cause serious complications, special precautions are taken to ensure the operating room is sterile. You will receive antibiotics to kill bacteria on your body and surgeons will wear special suits to prevent the spread of bacteria from their bodies. Your surgery will take 2-3 hours, including time for anesthesia. Following your surgery, you will be transported to the recovery unit for 1-2 hours before making your way to your hospital room on the orthopedic ward.

Anesthesia

About Anesthesia

PAMF board-certified anesthesiologists provide care for Center for Total Joint Replacement patients having surgery at Sequoia Hospital. Prior to your surgery, your anesthesiologist will discuss your specific medical conditions and help determine the appropriate anesthetic care.

About Spinal Anesthesia

Your anesthesiologist will discuss your options for anesthesia depending on your health needs and other concerns. Spinal anesthesia is recommended during total knee replacement to diminish pain, lessen blood loss, and limit the amount of general anesthetic required during surgery. A spinal anesthetic will be accompanied by sedation such that you do not have memory of the operation. If an adequate spinal anesthetic cannot be achieved you will have a general anesthetic.

Spinal anesthesia is administered in the operating room prior to surgery. You will be asked to either sit or lay in a position that best exposes the curve in your lower back. After cleaning your skin with an antiseptic, a small amount of local anesthetic is injected into the skin. Your anesthesiologist will then insert a spinal needle through the numb skin until it reaches the column of fluid surrounding the spinal cord, where the anesthetic will be injected. The medication acts on the spinal cord nerves to decrease or stop pain and prevent leg movement during surgery.

After the injection of the anesthetic into the spinal cord, your legs may feel warm and heavy, and you may have difficulty with movement.

Advantages and Disadvantages of Spinal Anesthesia

There are several advantages in using spinal anesthesia for total knee replacement surgery, including postoperative pain relief, especially in the first 12 to 24 hours after surgery; decreased blood loss during surgery; and decreased risk of deep vein thrombosis (blood clots) following surgery. However, your anesthesiologist may not use spinal anesthesia in some circumstances, including cases in which health concerns make spinal anesthesia unsafe. Talk to your surgeon and anesthesiologist about the best anesthesia option for you.

About Adductor Canal Block Injection

In addition to spinal anesthesia, you will also get an ultrasound-guided injection into the thigh. This procedure has been shown to provide additional pain control after surgery.

About General Anesthesia

General anesthesia is used to put a patient in a state of deep sleep during surgery, instead of or in addition to spinal anesthesia and adductor canal block. An endotracheal tube is inserted – sometimes using camera assistance – and a breathing machine (ventilator) is used to help the patient breathe.

Postoperative Care

Postoperative Recovery

Immediately after your surgery, you will be in the postoperative recovery unit for 1-2 hours. During this time, your vital signs such as pulse, respirations and heart rate will be closely monitored. Your physician will work with you to provide the best pain medication. Once your vital signs have remained stable for 1 hour, you will be transported to your hospital room. Due to privacy concerns and to ensure your recovery is safe, we ask that family members refrain from visiting the postoperative recovery unit.

Your Hospital Stay

As total knee replacement has become a routine surgical procedure with reliable and predictable results, the hospital stay after surgery has become well-defined. While hospitalization varies from patient to patient depending on his or her individual circumstances, the basic process remains the same.

- Day of Surgery (Postoperative Day Zero): After your surgery, you will spend 1-2 hours in the postoperative recovery unit before being transferred to your hospital room on the orthopedic ward. During this time, you may have a drain from your surgical incision. You will receive intravenous fluids for hydration, and a catheter placed in your bladder during surgery will allow you to urinate without leaving bed. You will receive intravenous or oral narcotic and anti-inflammatory pain medications from a nurse. You may be given a clear liquid diet. You may begin working with a physical therapist in the afternoon or early evening.

- Postoperative Day One: This day focuses on the rehabilitation process. In the morning, you will have a routine blood draw to check your blood count and electrolyte balance. If you are able to tolerate a clear liquid diet at this point, you will be advanced to a regular diet. Physical and occupational therapists will make their initial assessments of your condition and begin rehabilitation protocols. Most patients begin walking on this day. In addition, you can resume taking most of your regular medications. An injectable blood thinner will be given to prevent blood clots. The surgical drain and urinary catheter will be removed. Some patients will be discharged home on this day.

- Postoperative Day Two: On this day, you will have additional blood tests. Your physical and occupational therapy will become more aggressive and those patients who have not done so already will begin walking. You will start leg exercise. The occupational therapist also will help you move from the bed to a chair and will discuss other activities of daily living, such as the use of adaptive equipment and climbing stairs. The vast majority of patients go home on this day. Equipment for your discharge will be facilitated by your physical and occupational therapists.

Tips to Ensure a More Comfortable Hospital Stay

- Be aware that hospitals strive to provide medical support and may not be quiet or restful.
- Bring items such as lip balm, hand lotion, a personal music player and a phone charger to make your hospital stay more comfortable. Earplugs, eye shades and note pads are provided by the hospital.
- Leave jewelry, watches or other valuables at home.
- Wear any necessary prescription eyeglasses.
- Bring comfortable clothes with you to the hospital, including shorts, t-shirts, sweats, underwear, socks, pajamas, shoes and slippers, and basic toiletries.

Discharge Home

When you are sent home, you will receive instructions on how to self-administer blood thinning medication for 8 to 20 days following your surgery, depending on your personal medical needs. The hospital discharge planner will coordinate home physical and occupational therapy, as well as home nurse visits, if any are necessary. You also will be provided with any necessary medication prescriptions. You will need someone to drive you home.

Transfer to Skilled Nursing Facility

If your physical and occupational therapists feel that you would benefit from extended inpatient therapy, you may be transferred to a skilled nursing facility. The hospital case manager will arrange the transfer papers, including medication prescriptions and therapy instructions. The vast majority of patients do not require going to a skilled nursing facility and will be discharged home.

Diet

After surgery, many patients find they are not quite ready to eat a full meal. Your physician may put you on a clear liquid diet to prevent nausea. Once you are able to tolerate clear liquids, your physician will put you on a regular diet. Patients fill out a menu card before each meal, and diabetic patients will be provided a meal approved by the American Diabetic Association with a specific calorie count.

Medication

You may begin taking your regular medications following surgery unless otherwise directed by your surgeon. Your surgeon may choose to delay certain medications that are not essential in the postoperative period, such as blood pressure medications, if your blood pressure is low. You will also be prescribed opioid pain medication, anti-inflammatory medication, an injectable blood thinner and stool softeners.

Pain

Following surgery, you should expect to experience some discomfort and pain, despite taking a number of different pain medications. The goal of these medications is to decrease the amount of pain, not to take all of the pain away.

Pain Medication After Surgery

Most patients will be discharged from the hospital with different types of pain medications, including opioid medications like Oxycodone, Oxycontin, Norco and/or Tramadol. **Very important:** If refills are needed, **please call at least 2 days before you run out** so we can send refill prescriptions electronically to your pharmacy. **No refills are made over weekends or holidays.**

Deep Vein Thrombosis and Pulmonary Embolus

The risk of complications from total knee replacement is very low. However, deep vein thrombosis, a blood clot that begins in the veins of your legs or pelvis during or after surgery, remains an infrequent complication for approximately 1 to 3 percent of individuals who have had total knee replacement surgery.

When a blood clot develops in the veins, the condition is called deep vein thrombosis. When the blood clot in the leg breaks off and travels to the lungs, the condition is called pulmonary embolus. Blood clots may occur because of tissue trauma and compression of veins in the leg during surgery. In addition, the period of inactivity that follows the surgery may put patients at risk for developing a blood clot.

Symptoms of a blood clot in the leg include calf pain, leg swelling, tenderness, warmth and fever. The symptoms of a pulmonary embolus include chest discomfort or pain, shortness of breath, rapid breathing, coughing or fainting. However, many patients who develop these conditions may not experience any symptoms.

Because of these conditions, all patients are given either an oral or injectable anticoagulant (blood thinning) medication after surgery. Your physician may keep you on the anticoagulant for 8-20 days, depending on your specific medical history. Other preventive measures also will be taken, including early mobilization of the legs, elastic compression stockings and a sequential compression device to help reduce the risk of deep vein thrombosis.

Some individuals are more likely than others to develop blood clots. Some risk factors include smoking, cancer, congestive heart failure, obesity, previous deep vein thrombosis or family history of DVT/PE, or taking oral contraceptives or hormone replacement therapy. Patients who have had a previous stroke, prolonged inactivity, a history of trauma or previous pelvic surgery are also at greater risk for developing deep vein thrombosis. **Please tell your surgical team if you have any of these risk factors!**

After surgery, patients should avoid long periods of inactivity, including long car rides or airplane flights. If long travel is unavoidable, you may be prescribed a short course of Lovenox (injectable blood thinner) for your flight. Patients should get out of their seats every hour to walk around and move their legs. Ankle pump exercises are also helpful while sitting for extended periods. Patients should drink plenty of water and avoid alcohol. If you develop symptoms, please seek immediate medical attention.

Heparin-Induced Thrombocytopenia

In rare cases, a patient may develop heparin-induced thrombocytopenia (HIT), which is a life-threatening medical emergency. Some signs include new or suddenly worsening leg swelling (from a blood clot), chest pain or shortness of breath (from a pulmonary embolus) and/or large red skin welts or black scabs (skin necrosis) at the heparin injection site. Immediately stop using injectable blood thinner and call 911 to be taken to a hospital.

Nausea

You may experience nausea from the anesthesia or from pain medication you take following surgery. Notify your care provider if you experience nausea with vomiting. A clear liquid diet or anti-nausea medication may offer relief.

Constipation After Surgery

Taking opioid pain medication can lead to constipation. You will be discharged with different stool softeners, but you might still become constipated. Please make sure to drink enough water and ambulate frequently. We recommend docusate (Colace), Miralax, Milk of Magnesia and/or Dulcolax suppositories, all of which can be purchased over the counter at most drug stores. Please call us if you are still constipated after trying these medications, and if you are experiencing bloating, nausea or vomiting. These symptoms could require a visit to the emergency department or hospitalization.

Swelling After Surgery

Some swelling in the surgical extremity is normal after surgery. Most patients notice leg swelling when they arrive home from the hospital. Please remember to elevate your operated leg above the heart and place ice on your knee when swelling is present. You may continue to use the compression stockings given to you at the hospital or you can buy different ones at a local drug store or online. If you notice increased redness, warmth or worsening pain with weight bearing, please call the office.

Leg Lengths After Surgery

Some patients may feel that their operated leg is longer after knee replacement surgery, especially if a major deformity was corrected. This feeling is normal and your body may take several months to adjust.

Immediate Help

Ring your call button for the nurse immediately if you experience any of the following symptoms during your hospital stay or while recovering at a skilled nursing facility: **difficulty breathing, chest pain, irregular heartbeat/palpitations, sudden numbness or lightheadedness.** If you experience these symptoms while recovering at home, **immediately dial 911.**

Physical Therapy

Physical therapy is vital for a successful recovery from joint replacement surgery. Your physical therapy will begin in the hospital on the day of surgery and will continue intensively for 8-12 weeks, or longer if needed. Recovery time depends on the complexity of the surgery and the physical condition of the patient. Most patients attain recovery within 8-12 weeks.

The initial therapy session will begin with an assessment of your condition. Pain management is very important to maximize the productivity of each physical therapy session. If you are on oral pain medications, you may want to request 1-2 pills 45-60 minutes before the therapy session begins.

Below are knee exercises that may be used during your physical therapy sessions.

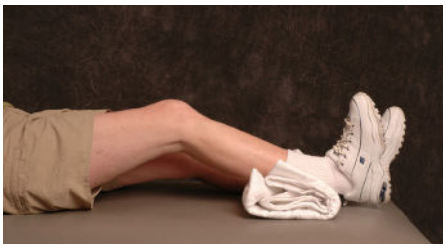
- **Ankle Pumps:** Keep the knee straight, move the foot in circles, clockwise and counter-clockwise.
  Repeat 10 times.

- **Gluteal Sets:** Squeeze the buttocks together, count to 10 and repeat.

- **Quad Sets:** Keep the operated knee straight, press the back of the knee down. Count to 10 and repeat.

- **Straight Leg Raises:** Keep the non-operated leg bent and your foot flat. Straighten the operated knee while tightening the quad muscles in the front of the thigh. Lift the operated leg 6 inches above the bed and lower it down slowly. Repeat 10 times.

- **Hamstring Sets:** Bend the operated knee 15 degrees, tighten the muscles in the back of the thigh and count to 10.
  Repeat 10 times.



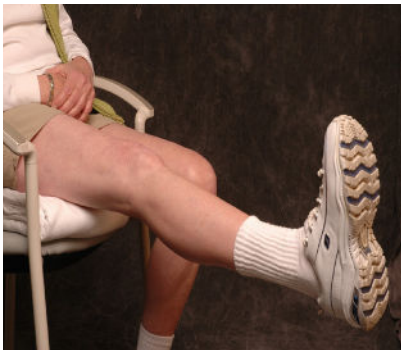
- **Heel Slides:** Straighten the operated knee, point the kneecap toward the ceiling, slide your foot toward your buttocks while keeping your heel on the bed and return to the starting position with your knee straight.

- **Knee Extension Exercises:** Place the operated knee over a firm rolled bath towel. Next, straighten your knee by tightening your quad muscle in the front of the thigh. Do not raise your knee off the rolled bath towel when lifting your leg. Repeat 10 times.

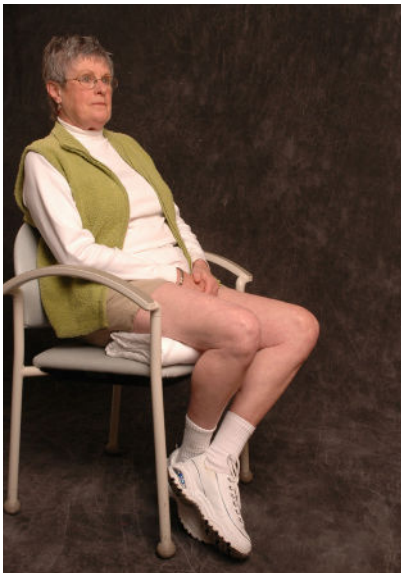
- **Knee Extension Stretch:** Let your heel rest on the rim of a rolled bath towel. Next, relax and allow your knee to straighten as much as possible. Increase the stretch by 30 to 60 seconds per day for up to 10 minutes per day. The goal is to fully straighten the knee by 12 weeks.

- **Knee Extension Stretch:** While lying on your stomach, bring your feet over the edge of the bed while keeping your knee on the bed. Relax and allow the knee to straighten. Add 2-5 pound weights on each ankle, increasing the stretch by 30 to 60 seconds per day for up to 10 minutes per day. The goal is to fully straighten the knee.

- **Sitting Knee Extension:** Sitting in a chair with your back against the chair, straighten your knee and hold for 5 seconds. You may also try resting your heel on a chair or ottoman in front of you. Keep this position for 10 minutes to let the knee slowly drop down and straighten your leg.



- **Sitting Knee Flexion:** Sitting in a chair, bend your operated knee back as far as possible and aim your heel under the chair. Use your other leg to assist this motion and hold for 10 seconds. Repeat.



Movement

When you return home after surgery, you should return to your normal activities, such as bathing, using the bathroom and preparing meals. At first, limit your activities and slowly progress as you feel comfortable. You may find you need to schedule several rest periods during the day, which is normal. Rest, ice and elevate the leg during these breaks. Use an assistive device (walker, cane, crutches, etc.) for the first 3 weeks and then gradually stop using adaptive equipment when appropriate.

Consult with your physical therapist on the types of movement recommended. You should not drive for the first 4-6 weeks following surgery.

To minimize swelling, try to keep you operated leg elevated above the heart for 20 minutes at least 4 times during the day. Excessive swelling and worsening pain may be an indication of a deep vein thrombosis. If you have been wearing compression stockings after the surgery, you may stop wearing them when the swelling in the legs subsides.

Exercise

Exercise is important for your general physical and mental health. The purpose of the total knee replacement is to return you to an active and healthy lifestyle. Since the knee replacement is mechanical, it is subject to wear and deterioration over time. In this regard, exercise should be vigorous, but not strenuous. In addition, you should permanently avoid high-impact sports, such as full-court basketball, running or jumping. Walking, hiking, biking, swimming, doubles tennis, cross-country skiing and golf are safe activities. You should avoid long distance travel (intercontinental) for at least 3 months following surgery.

Occupational Therapy

The role of the occupational therapist is to educate and evaluate your daily activities, such as getting in and out of a chair or bed, getting out of a bathtub, taking a shower, and putting your socks and shoes on and off. Like physical therapy, occupational therapy begins at the hospital. The occupational therapist will visit you daily in the hospital and make an initial evaluation of your condition during the first home visit.

The goal of an occupational therapist is to help you move as independently as possible before you leave the hospital. The therapist will help assess the best environment for you to recover from surgery, whether this is at home or at a skilled nursing facility. The therapist also will help arrange the delivery of assistive devices, such as a long-handled shoe horn, a dressing stick and a reacher, and demonstrate how to use these devices.

Your occupational therapist will discuss the movements listed below, as well as other movements in daily life, that you will need to be able to perform.

- **Standing up from a chair:** Always try to sit in a chair with arm rests, if possible. When getting up, scoot to the front edge of the chair and push up with both hands on the arm rests. If you are sitting in a chair without arm rests, place one hand on your walker and push off the chair with the other hand. Hold on to the walker while balancing yourself.

Home Safety Tips

- **Toilet transfer:** When sitting down on the toilet, take small steps and turn until your back is to the toilet – never pivot. Back up to the toilet until you feel it touch the back of your legs. If using a toilet with arm rests, reach back for both arm rests and lower yourself down gently. If using a raised toilet seat without arm rests, keep one hand on the walker while reaching back for the toilet seat with the other hand. Slide your operated leg in front of you when sitting down. When getting up from the toilet, use the arm rests to push up, if available. If you are using a raised toilet without arm rests, place one hand on the walker and push off the toilet seat with the other hand. Balance yourself before grabbing the walker.

- **Getting into bed:** Back up to the bed until you feel it touch the back of your legs. Reach back with both hands and sit down on the edge of the bed. Once you are firmly seated, scoot back toward the middle of the mattress. Next, move your walker out of the way and scoot your hips around so that you are facing the foot of the bed. Lift your leg into the bed while scooting around. Keep moving your body and lift your other leg into the bed. Move your hips toward the middle of the bed.

- **Getting out of bed:** Inch your hips toward the edge of the bed and then sit while lowering the non-operated leg to the floor. You may need a leg-lifter to help you. Once both legs are on the floor, push your buttocks to the edge of the bed. Use both hands to push off the bed. If the bed is low, place one hand in the middle of the walker while pushing off the bed with the other hand. Hold onto the walker while balancing yourself.

- **Shower transfer:** Keep your incision dry until your surgeon says it is OK to get it wet. The occupational therapist may decide you need a shower bench to ensure your safety while showering and will teach you the correct way to take a shower.

  To get into the shower, place the shower seat in the shower facing the faucets. You should back into the shower seat until you feel the bench against your knees. Once you feel the bench, reach back and place one hand on the shower seat. While keeping the other hand on the walker, slowly lower yourself on the bench. Keep the operated leg straight. Once you are firmly balanced on the seat, move the walker out of the way. If the shower is in a bathtub, lift your legs over the edge of the bathtub. You may require the leg lifter for help.

  To get out of a shower that is in a bathtub, raise your legs over the outside of the tub. Push one hand on the back of the bathtub while holding the middle of the walker with the other hand. Make sure you are properly balanced before holding onto the walker. Tip: Keep soap, scrubbers and washcloths within easy reach, and have a rubber mat on the floor to prevent slipping.

  Be very careful with your first shower! Warm water may cause vasodilation (widening of blood vessels), which can lead to lightheadedness, fainting and/or falling.

- **Bathtub transfer:** Like transferring to and from the shower, transferring to and from the bathtub may be difficult the first time. It is best to practice this first with your occupational therapist before attempting the movement yourself.

  First put a chair or bath bench inside the bathtub. Then place your hand on the bench, keeping one hand on the walker. Slowly lower yourself onto the bench, bringing your other hand down to balance yourself. Sit on the edge of the chair inside the bathtub. Slowly bring the non-operated leg inside the tub while keeping your operated leg straight. You may need help with a leg lifter.

  To get out of the bathtub, use the leg lifter to lift the operated leg over the edge of the bathtub. Keep your operated leg as straight as possible. Slowly scoot yourself toward the edge of the bench and bring the non-operated leg outside of the tub. Grab the center of the walker, balance yourself and bring yourself upright. Once you are balanced, place both hands on the walker. Again, you may require help the first few times. Do not attempt this by yourself unless the occupational therapist feels you are ready to do so.

- **Car transfer:** Getting in and out of the car is similar to getting in and out of a chair, except that you do not have arm rests to support you. This movement is easiest if the car seat is pushed all the way back.

  First, back up to the car seat with the walker. Stop when you feel the car door jam against your legs. Place one hand on the seat and slowly lower yourself onto the seat. Be careful to clear your head in the door. When bringing the operated leg into the car, keep the leg straight, and lean as far back in the seat as you can. Turn the one leg into the car and slowly bring in the other leg. Lean as far back in the seat as you can when bringing the operated leg into the car.

- **Dressing with pants:**

  To put on pants, start in a seated position. Put the pants on the operated leg first and then on the non-operated leg. Take a reacher, or dressing stick, and guide the waist of the pants over your foot. Next, pull your pants up over your knees. Hold onto the walker and stand up, pulling your pants up all the way to your waist.

  To remove your pants, begin from a standing position with your legs backed up to a chair. Unbuckle your pants and let them drop below your knees. Lower yourself down to the chair keeping the operated leg straight. Remove your pants from the non-operated leg first. Take the dressing stick and remove the pants from the rest of the operated leg.

Home and Personal Safety

Guidelines for general safety and avoiding falls.

- Remove throw rugs to prevent tripping.
- Remove or tape down long telephone, electrical or extension cords to prevent tripping.
- Clear all walkways to allow for easy access for your walker (26-30 inches wide), cane or crutches.
- Exercise caution around bedspreads to prevent tripping.
- Exercise caution around water, clothing, or objects spilled or dropped on the floor.
- Make sure all walkways, especially the pathway to the bathroom at night, are well lit.
- Place commonly used items within easy reach to prevent over-reaching or bending.
- Do not stand on a stool or step ladder.
- Be cautious when walking on uneven terrain, such as sidewalks, asphalt, grass or dirt areas.
- Place an end table next to an arm chair to store your glasses, medications, books, etc.
- Keep a pitcher of water and a glass at your bedside table.
- Sit in a sturdy chair with armrests. Avoid low couches and chairs, or chairs on wheels.
- Place the telephone within close reach for easy access. Cordless phones are useful.
- Exercise caution around animals.

Guidelines for kitchen safety.

- Use a cart on wheels to transport items in the kitchen and around the house.
- Sit in a high stool at the counter when cooking.
- Reorganize your kitchen so you have easy access to items you use regularly.
- Attach a bag or basket to your walker to carry items. You may also use a knapsack, an apron with pockets or a housecoat with pockets to carry lightweight items.
- Place frequently used items within easy reach, such as on low shelves or countertops.
- When shopping, purchase smaller items that will be easy to carry.
- Carry plates of food or drinks in closed containers such as Tupperware or a small thermos. Place these containers in a bag or basket on your walker.
- Move your table close to the counter, sit at the counter or use a pull-out cutting board when eating meals.
- Put bowls and pots and pans on a dish towel and slide them across the counter instead of carrying them.
- Do not get down on your knees to scrub the floors.

Guidelines for bathroom safety.

- Place non-slip strips or a rubber mat on the floor of your bathtub or shower to prevent slipping.
- Place shampoo, washcloths or other items within easy reach. A shower caddy may be helpful to organize these items.
- Use a hand-held shower hose, shower seat or tub transfer bench, if recommended. Have grab bars installed in your shower or by the toilet to increase safety, if recommended.
- Use liquid soap or soap on a rope. Have two bars of soap available in case one is dropped.
- Use a raised toilet seat with grab bars to increase your safety and independence.
- Do not get down on your knees to scrub the bathtub. Use a long-handled brush or mop.

Guidelines for clothing and footwear.

- Bathrobes and gowns should not be longer than ankle length.
- Do not wear pants that are too long.
- Shoes and slippers should go around the heel and have non-slip soles.
- Slip-on shoes are easier than shoes with ties.
- Do not walk around the house in stocking feet; wear shoes or slippers to prevent falls.

During postoperative daily life, DO:

- Use a reacher.
- Scoot to the edge of a chair and use the arms of a chair to get up.

During postoperative daily life, DO NOT:

- Place a pillow under your operated knee for comfort because it may prompt your knee to become stuck.
- Drive until your surgeon tells you it is OK to do so.
- Take more than the prescribed amount of pain medication. Please call your surgeon's office if your pain is not being adequately managed.
- Bathe, swim or use a hot tub until your surgeon tells you it is OK to do so.

Consider buying the following items before your surgery:

- Knee kit (reacher, leg lifter, long-handled shoe horn, sock/stocking aid).
- Walker (generally provided by the hospital).
- Shower chair/bench.
- Elevated toilet seat.

Follow-Up Visits

Your surgeon will visit you regularly while you are in the hospital or skilled nursing facility to check your post-operative progress. Within 10-14 days of discharge from the hospital, your wound needs to be inspected and any stitches removed. Follow-up visits within the first year following surgery should be at 6 weeks, 3 months and 1 year. Annual or biannual visits, along with X-rays, are important to monitor the wear of the artificial joint. Early intervention will prevent serious damage to the knee replacement. If you start to develop pain at any point, please call the Center for Total Joint Replacement at 650-853-2018 to see your surgeon immediately.

Wound Care

Keep your surgical incision clean and dry until seen in the office by your surgeon or one of their assistants. Contact us immediately if you have any of the following symptoms: bleeding, drainage, redness or foul smells from the wound, or a fever of 101.5 or greater.

Make sure to keep the wound clean and dry. Change the dressing as needed, using a sterile bandage until the wound is healed. These adhesive waterproof bandages are provided by Sequoia Hospital at discharge. The steri-strips may begin to peel 7 to 14 days after surgery. Once they begin to curl up, you may either trim or remove them. Expect occasional spotting or blood on the wound for at least 2 weeks.

It is essential that the healing wound is kept dry during showering. For the first 2 weeks, cover the wound with a waterproof bandage or plastic wrap to keep it dry, and do not take a bath until you have your surgeon's approval.

What to Expect

In the days following your surgery, expect the unexpected. It may be normal to experience pain, spotting of the incision, pustule (a pus-filled blister) in the incision and/or a stitch appearing from the incision. Please let us know if you have any concerns.

Returning to Work

Patients' ability to return to work depends primarily on two factors: the job to which they are returning and their physical rehabilitation. Patients with sedentary jobs may return to work after 2-3 months following surgery. For those with a more physically demanding job, patients may require 3-4 months of rehabilitation before they are ready to return to work.

About our Facilities

Palo Alto Medical Foundation

The Center for Total Joint Replacement is part of the Department of Orthopedics at Palo Alto Medical Foundation. Our offices are located in Palo Alto and San Carlos. Each campus houses physicians in many primary care and specialty areas, as well laboratory and radiology departments, urgent care centers and outpatient surgery centers. The Palo Alto center also houses a full-service pharmacy and our Community Health Resource Center, where patients can get educational materials about different medical conditions. With all of these services in one place, we can easily provide patients with other medical care they may require as part of the joint replacement process.

The Palo Alto clinic, built in 1999, boasts state-of-the-art technology and equipment. We also highly value creating a healing environment for our patients and their families. With sunny gardens, artwork on the walls and comfortable waiting areas, we strive to generate a sense of warmth and personal welcome for our visitors.

Contact Information

Contact the Department of Orthopedics Center for Total Joint Replacement directly at **650-853-2018.**

Office hours are 8 a.m. to 5:30 p.m., Monday through Friday.

Palo Alto Center

795 El Camino Real, Lee Building, Third Floor
Palo Alto, CA 94301
Main Phone: 650-321-4121

San Carlos Center

301 Industrial Road
San Carlos, CA 94070
Main Phone: 650-321-4121

Sequoia Hospital

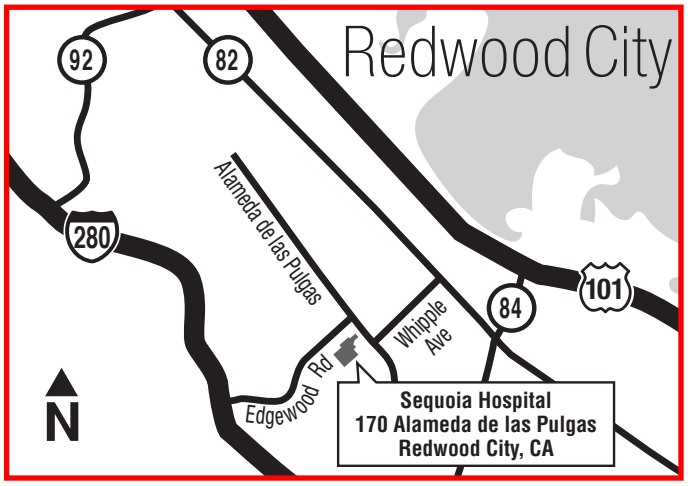
About Sequoia Hospital

PAMF surgeons perform all joint replacement operations at Sequoia Hospital in Redwood City. It has a dedicated, highly specialized team of doctors, nurses, physical therapists and physician assistants who help coordinate your care before, during and after surgery.

Directions and Parking

Sequoia Hospital is located at 170 Alameda de las Pulgas, Redwood City, which is in the heart of the peninsula and is easily accessible via Highways 101 and 280, as well as El Camino Real.

Both valet parking and self-parking are available in the spacious garage structure free of charge.



Hospital Contact Information

Telephone: 650-369-5811
Website: locations.dignityhealth.org/sequoia-hospital-redwood-city-ca

From 101 North or South

- Take the Whipple Avenue exit, heading west.
- Follow Whipple Avenue for approximately 2 miles, crossing El Camino Real.
- Sequoia Hospital will be directly in front of you upon reaching Alameda de las Pulgas.
- Cross Alameda de las Pulgas and make your first right turn into the main entrance driveway.
- Choose self-parking or take advantage of the free valet parking in front of the main entrance.

From 280 North or South

- Take the Edgewood Road exit, heading east.
- Follow Edgewood Road for approximately 2.5 miles, until reaching Alameda de las Pulgas.
- Turn right on Alameda de las Pulgas.
- Proceed approximately a quarter-mile until you reach Whipple Avenue.
- Turn right on Whipple Avenue and make your first right turn into the main entrance driveway.
- Choose self-parking or take advantage of the free valet parking in front of the main entrance.

El Camino Real North or South

- Turn on Whipple Avenue heading west (away from the bay and toward the hill).
- Follow Whipple Avenue for approximately 2 miles.
- Sequoia Hospital will be directly in front of you upon reaching Alameda de las Pulgas.
- Cross Alameda de las Pulgas and make your first right turn into the main entrance driveway.
- Choose self-parking or take advantage of the free valet parking in front of the main entrance.

Frequently Asked Questions

What is an artificial joint?

An artificial knee replaces your native deteriorated knee. In a knee replacement, the deteriorated portions of the femur (thigh bone), tibia (leg bone) and patella (kneecap) are removed. The two ends of the long bones are capped with metal replacements, while the kneecap is capped with a plastic button. A polyethylene spacer is placed between those two metal caps, which allows the joint to move similarly to a natural knee. Joint replacement procedures are generally performed to address persistent pain that is not alleviated by non-surgical methods, such as pain medication, injections, braces and/or physical therapy.

How do I know if it's the right time to have total knee replacement surgery?

It is a personal decision to have total knee replacement. However, if you are unable to perform daily activities due to pain or decreased mobility, it may be a good time to consider total knee replacement surgery. Most patients decide on joint replacement when they are unable to perform normal activities of daily life without pain or limitation.

Can I wait to have total knee replacement? If I wait, will I be unable to have the surgery at a later date?

You can wait to have total knee replacement until a later date, and waiting typically will not impact your ability to have the surgery in the future. However, you do not want to wait so long that you become cardiovascularly unfit for surgery. Also, you may move forward with knee replacement if you have a knee deformity that worsens over time, because this can lead to a more challenging surgery with a less predictable outcome.

Am I too old to have replacement surgery?

Age is not a factor in knee replacement surgery, although being in good health is important. The purpose of the surgery is to relieve pain and return you to an active, normal life. If you are suffering from pain that decreases your quality of life and it is determined that the joint replacement can be safely performed, then you are a candidate for the surgery.

Should I have physical therapy before surgery?

Physical therapy is encouraged – and often required by insurance companies – before joint replacement surgery, and many patients find it helpful. You may begin home knee exercises or consult a local physical therapist.

What are some of the risks of total knee replacement surgery?

The primary risks of joint replacement surgery are blood clots and infection. Blood thinners are used after surgery to reduce the risk of blood clots and antibiotics are given to prevent infection. Other less common risks are heart attacks, strokes and dying. These are very rare.

What type of prosthesis is right for me?

The best person to make this decision is your surgeon. Most orthopedic surgeons prefer cobalt chrome cemented knee replacements with a highly cross-linked polyethylene spacer between the two metal components.

Do I have to modify my movement? Can I perform daily activities, such as dressing myself?

There are generally no limitations in the immediate post-operative period, but you may find that doing most things will be uncomfortable. Deep bending and kneeling are particularly painful.

How long will my joint replacement last?

Your knee replacement is expected to last between 15 and 20 years. For younger and heavier patients, this time may be reduced due to increased activity and demand. We are unable to guarantee the longevity of the replacement, but are optimistic that today's components will last up to 20 years.

Why do knee replacements fail?

The primary reason for loosening of the knee replacement is a process called osteolysis. Wear on the bearing surfaces primarily the plastic, creates particles. In an attempt to remove the particles, the body tries to digest them. In doing so, it loosens the bond between the implant and the bone. A knee replacement may also fail when the plastic spacer between the metal component wears out. This is a gradual process that may occur over decades. The worst case scenario of why knee replacements fail is an infection.

How long will the operation take?

The actual knee replacement operation will last from 60 to 90 minutes. The length of the surgery will depend on the complexity of the individual case, as well as the size of the patient. Larger patients and those with complex deformities require longer surgical time. The time spent in the operating room is usually 2-3 hours, which includes anesthesia, positioning, draping, surgery, placing bandages, waking the patient and transporting the patient to the recovery room.

How long will I be in the hospital?

You should expect to spend 1-2 nights in the hospital. Your discharge from the hospital depends on your ability to eat, control your pain with oral pain medication and your progress with physical and occupational therapy.

Where will I go after I am discharged from the hospital? What if I live alone?

Most patients are discharged home, but some may go to rehabilitation facilities, called skilled nursing facilities, after being discharged from the hospital, if medically necessary. Where you will go for recuperation depends on your age and physical and medical condition. If you live alone, it is important to prepare your home for your return before you leave for the hospital and make transportation arrangements.

Will I need help at home?

If you are discharged home after surgery, you may require some help for the first few days with meal preparation and daily activities, such as getting in and out of a chair. You should prepare your home for your return before you leave for the hospital, including cleaning the house, doing any necessary chores, washing laundry, etc. You may seek the help of a home health agency, and your physical and occupational therapists will come to your home up to 3 times per week for the first couple of weeks following surgery.

When will I walk again, and do I have to use assistance devices such as a walker or cane?

You will begin walking again immediately following your surgery, according to your physical therapy plan. You should expect to use a walker or cane for the first 1-3 weeks.

When can I drive?

Most patients may resume driving again 4 weeks after surgery.

When can I play golf?

You may play golf 6-8 weeks after your surgery.

When can I swim or submerge the wound under water (bathing, hot tubbing, etc)?

Please do not soak the wound until a solid scar has formed and all of the scabs or stitch openings have healed completely. This usually takes 4-6 weeks. If you have any doubts, please contact us.

Do I need to purchase any special equipment for my home, such as handrails, an elevated toilet seat or shower seat?

Your physical therapist may order an elevated toilet seat and any other adaptive equipment you may need prior to your discharge from the hospital.

Are there any exercises I can perform on my own to gain strength and mobility?

In general, walking and common exercises like biking/spinning, swimming and elliptical all help to build strength. Your physical therapist will prescribe exercises you can perform at home to gain strength and mobility. Being fit and strong before the surgery will help make your recovery easier and faster.

How do I know if there is a problem with my knee replacement?

If you experience worsening pain or swelling, new weakness or instability, please contact us immediately. Otherwise, we recommend routine follow-up with your surgeon every 3 years after your knee replacement.

Why does my knee make a clicking sound when I bend it?

Your knee is a mechanical device and may make a clicking sound or other noises from time to time.

Do I need to continue taking my pain medications?

Your physician will begin reducing your pain medications 2-6 weeks following surgery. You may still require pain medication during physical therapy. It is important to have good pain control during therapy to make sure you get the most out of the rehabilitative exercises.

What should I do if my knee gets stiff after surgery?

If your knee does not bend beyond 90 degrees 6 weeks after surgery, your surgeon may recommend manipulation under anesthesia to break up any scar tissue that may be contributing to your stiff knee. This procedure is done in an outpatient setting, which means you will go home the same day. Intense physical therapy follows.

For how long should I take prophylactic antibiotics when I go to my dentist?

Your surgeon will give you specific recommendations regarding the duration and type of antibiotic they recommend you take. We also can prescribe the antibiotic if your dentist does not have any available.

PAMF Contact Information

Center for Total Joint Replacement
Phone: 650-853-2018
Fax: 650-853-6088
Hours: Monday to Friday, 8 a.m. to 5 p.m.

Palo Alto Center
795 El Camino Real, Lee Building, Third Floor
Palo Alto, CA 94301
Main Phone: 650-321-4121

Department of Orthopedics (Palo Alto)
Phone: 650-853-2951
Fax: 650-853-6088
Hours: Monday to Friday, 8 a.m. to 5 p.m.

San Carlos Center
301 Industrial Road
San Carlos, CA 94070
Main Phone: 650-321-4121

Department of Orthopedics (San Carlos)
Phone: 650-596-4040
Fax: 650-551-7076
Hours: Monday to Friday, 8 a.m. to 5 p.m.

Laboratory
Palo Alto Center
Phone: 650-853-2948
Hours: Monday to Friday, 6:30 a.m. to 6 p.m.
Saturdays, 8 a.m. to 12:30 p.m.

San Carlos Center
Phone: 650-596-4250
Hours generally Monday to Friday, 7 a.m. to 6:30 p.m., but times vary so call for most accurate information.
Saturdays, 7 a.m. to 12:30 p.m.

Los Altos Center
Phone: 650-254-5255
Hours: Monday to Friday, 7:30 a.m to 6 p.m.
Saturdays, 8 a.m. to noon

Pharmacy (Palo Alto Center)
Phone: 650-687-0154
Hours: Call number above for hours of operation.

Radiology
Palo Alto Center
Main Phone: 650-853-2955
MRI Phone: 650-853-2956
Hours: Monday to Friday, 7:30 a.m. to 6 p.m.

San Carlos Center
Main Phone: 650-596-4180
Hours: Monday to Friday, 7:30 a.m. to 6 p.m.

Los Altos Center
Phone: 650-254-5200
Hours: Monday to Friday, 8:30 a.m. to 5:30 p.m.
(diagnostic radiology)

Community Health Resource Center
Palo Alto Center
Phone: 650-614-3200
Hours: Monday to Friday, 9 a.m. to 4:30 p.m.
Individual appointments are available

Fremont Center
Phone: 510-623-2231
Hours: Monday to Friday, 9 a.m. to 4:30 p.m.
Individual appointments are available

Clinical Services
Phone: 650-853-2026
Fax: 650-853-4887
Hours: Monday to Friday, 8 a.m. to 5:30 p.m.

Medical Records
Phone: 650-853-2963

Sutter Health Billing Information
Phone: 650-812-3838

Sequoia Hospital Billing Services
Phone: 888-488-7667

Sutter Health
Palo Alto Medical Foundation

Department of Orthopedics
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795 El Camino Real
Palo Alto, CA 94301
pamf.org/joints

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