

CHRISTOPHER E. BIRCH, M.D.

Thank you for choosing Dr. Birch and Alta Orthopaedics. Our entire team is committed to ensuring that you receive expert care during your journey through total joint replacement. At any time, if you have questions or concerns about any part of the process, please do not hesitate to contact our office. We are here to help you and make your recovery as comfortable as possible. Thank you for trusting us with your care.

Dr. Birch specializes in adult reconstructive orthopedic surgery, with a focus on primary and revision hip and knee arthroplasty. He is skilled in minimally invasive total joint arthroplasty as well as advanced techniques in managing complications of failed or painful hip and knee replacements. He is comfortable performing total hip replacements through all surgical approaches and, together with the patient, decides which option is best for each individual. Dr. Birch's specialties include:

HIP:

- Minimally Invasive Total Hip Arthroplasty
- Direct Anterior Total Hip Arthroplasty
- Revision (Redo) Total Hip Arthroplasty

KNEE:

- Total Knee Arthroplasty
- Cementless Total Knee Arthroplasty
- Partial (Unicompartmental) Knee Arthroplasty
- Computer Navigation for Knee Replacement
- Revision (Redo) Knee Arthroplasty

FRACTURE:

- Periprosthetic Fracture Treatment

Dr. Birch is a Santa Barbara-native and third-generation physician who obtained a bachelors degree from Boston College and received his medical degree from the University of California San Diego School of Medicine. After medical school, he completed his orthopaedic surgery residency at the University of Vermont Medical Center followed by a complex hip and knee replacement fellowship at Indiana University School of Medicine. He is a member of the American Academy of Orthopaedic Surgeons and the American Association of Hip and Knee Surgeons and an editorial reviewer for the peer-reviewed Journal of Arthroplasty and Arthroplasty Today.

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TOTAL KNEE REPLACEMENT

The knee replacement process begins with education regarding:

- Your Knee
- Arthritis of the Knee
- The Surgical Procedure
- Recovering from Surgery

About your Knee

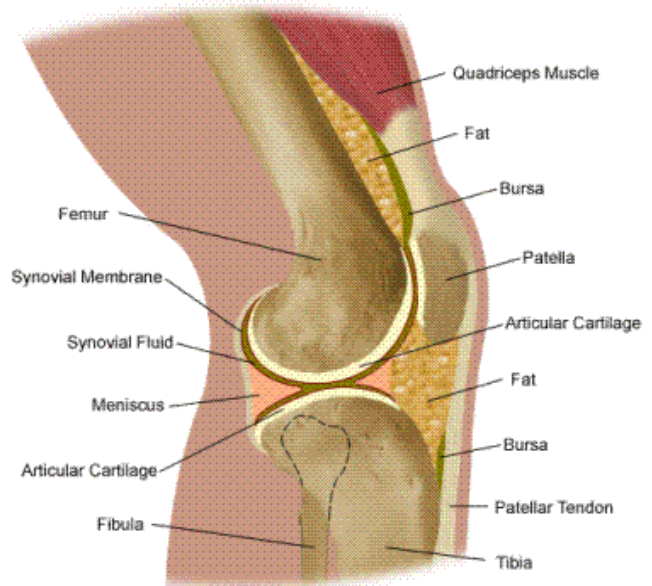
The knee, at first, appears to be a simple hinged type of joint which straightens and bends. However, it is actually a rather complicated structure with several other motions involved in its normal function. The knee joint is formed by the end of the *femur* (the thigh bone) *articulating* (rubbing) with the top of the *tibia* (shin bone). Additionally, the *patella* or kneecap also articulates with the end of the femur forming this complex joint which we call the knee. Normally, the ends of the bone are covered with a smooth, white material called cartilage. Cartilage acts as a cushion and allows free motion of the knee joint. Without the cartilage cushion, bone ends contact each other and cause pain.

Arthritis of the Knee

Arthritis is a medical word, not a disease, used to describe inflammation and pain often caused by the wearing of cartilage. As cartilage wears, the joint lining reacts by secreting excess fluid and by causing pain. In the early stages, this inflammatory response can be treated by the use of non-steroidal anti-inflammatory medication. However, when the cartilage is worn and the bone ends are bearing on one another, these medications may no longer be effective. Arthritis is actually a number of different conditions, all of which can ultimately cause the wearing out of your knee joint. One or more of the following may have caused your knee joint to wear out:

- **OSTEOARTHRITIS** sometimes occurs with age, injury or deformity and is caused by "wear and tear" on joints. Most often we do not really know the cause of osteoarthritis ("OA").
- **RHEUMATOID ARTHRITIS** and other related inflammatory arthropathies are generalized inflammatory conditions in which many joints may be affected. This can occur at a relatively young age.

Anatomy of the Knee



- **OSTEONECROSIS** is not initially arthritis; it results from the lack of blood supply to the head of the femur, causing it to erode away. Arthritis then develops.
- **TRAUMATIC ARTHRITIS** is due to an injury to the joint, such as a fracture or dislocation.

When arthritis pain is not relieved by anti-inflammatory medication, or when walking and other daily activities are limited, a total knee replacement can be considered. In this surgery, the bony surfaces of the knee joint are usually replaced with metal and plastic components. Replacement of joint surfaces allows for smooth, pain-free motion and a stable joint.

Immediately after your knee joint is replaced, you will experience a different type of pain than you had before the surgery. This pain will be from the surgery itself and will continue until your tissues heal. As you exercise and increase walking, the discomfort will eventually subside. The majority of total knee replacement patients return to active, pain-free lives.

The Surgical Process

Preparation for the Hospital

1. Before knee replacement surgery you will require an evaluation by your physician. If you are not from the Santa Barbara area, a temporary local physician may be required.
2. A few days before surgery you will go to the hospital for final blood tests and possibly other medical tests. You will also speak with someone from the anesthesiology department.
3. During your pre-surgery visit with Dr. Birch, prescriptions will be sent to your pharmacy for the following medications. You will need to use both as prescribed prior to surgery:
 - **ANTIBIOTIC SOAP** (Hibiclens) with which you will wash your knee the night before and the morning before reporting to the hospital for surgery.
 - **LAXATIVE** so that you will not be troubled by constipation after surgery. Take one the night before surgery and as needed after.

IMPORTANT: Do NOT eat or drink anything after midnight the night before surgery.

The Day of Surgery

Before surgery you will be given medication which will make you drowsy and help you to relax, but you may be aware of some of the activities going around you. You will first enter the preoperative area where the nurses and anesthesiologist will start an *intravenous line* ("I.V.") in your arm to give you antibiotics. From there, you will be taken to the operating room, where the surgery takes place. The surgical technician will be wearing a "space suit" and will be busy setting up instruments.

After you are anesthetized, your knee and entire leg will be washed with antiseptic soap and partly covered with sterile towels and blankets. The operation will then take place. Once the replacement process complete, and the knee properly straightened, each layer of tissue is securely closed back together. At this point, you will be transferred to the recovery room where the staff of specially trained nurses monitors your vital signs as you awaken from the anesthesia. If there is any question regarding the amount of bleeding, your blood pressure, heart rate or any of your vital signs, you will be taken to the Intensive Care Unit.

You will have an I.V. to receive antibiotics and fluids through the vein and, if necessary, a catheter to drain urine from your bladder. The bladder catheter is usually removed the morning after surgery.

Recovering from Surgery

Evaluation and treatment by a physical therapist begins the day of surgery. They will help you progress toward your previous level of walking and other activities. You go home as soon as you are able to get up from bed and walk independently. This is usually one or two days following surgery depending on the degree of disability and the possible presence of other medical problems.

The following breathing, coughing and leg exercises will improve your lung capacity as well as maintain circulation and muscle tone in your leg. Be sure to practice these exercises before your surgery so they will become easy to do.

1. **BREATHING** – Breath in through your nose, filling the lower part of your lungs as much as possible. Breathe out through your mouth. Repeat ten times. Try to move a good amount of air into and out of your lungs. In the hospital you may also learn how to use an incentive spirometer, which is a small plastic machine that helps you take deep breaths.

2. **COUGHING** – Take several deep breaths to get the air moving in your lungs. After the last breath, cough twice giving a deep sound. Do not breathe between coughs. During this exercise you may cough up mucus as a consequence of the anesthesia.
3. **LEG EXERCISES** – The circulation in your legs depends on muscle action for blood to be returned to the heart. Inactivity, such as lying in bed, causes the blood in your veins to become sluggish. Exercising your leg muscles will help pump the blood more efficiently, assisting circulation and helping to prevent blood clots. *Walking is the most efficient way to promote circulation.*

The elastic stockings given to you in the hospital along with the following exercises will lessen the risk of developing thrombophlebitis (blood clots) in your legs. After you are home you do not need to wear the heavy white elastic stockings if you are getting up and down and doing some walking a few times a day. **Some muscle pain and swelling are normal.** The pain will decrease as you gain motion and strength, and as your activity increases.

Do these leg exercises while lying in the bed about every half hour while awake.

- A. Tense your thighs, one at a time, pressing the back of your knee into the bed. Hold for a count of four; then relax. Repeat ten times each leg.
- B. Paddle your feet and ankles up and down ten times.
- C. Make circles with your feet and ankles, first in one direction ten times; then in the opposite direction ten times.
- D. Dig your heel into the bed, hold five seconds; and then relax.
- E. Tighten your stomach muscles, hold five seconds; and then relax.

Postoperative Days One and Two

Starting on the day of the surgery and until you return home you will work with the physical therapist two times a day. The physical therapist will teach you how to get out of bed and chairs safely and how to move around with your new knee. The therapist will also review the breathing, coughing and leg exercises. Even if you feel safe getting in and out of bed the hospital nursing staff will still supervise you as you move around.

Going Home

You are not required to stay in the hospital for a particular number of days. Some patients may leave the same day of surgery; others may require up to three days.

You will be ready to leave the hospital when:

- You have no new or active medical problems requiring treatment
- You are able to get up from the bed and walk independently
- Your pain is controlled on oral medications
- You are able to eat and drink without any problems
- You can void urine independently

Deciding where to recover from surgery requires planning. You should consider location, layout of the home, length of recovery time (approximately six weeks) and the availability of assistance before deciding where to recuperate.

At Home

SWELLING MANAGEMENT:

The swelling around your knee and the entire leg will increase for about 10 days after surgery: you will become more swollen after you are home. Swelling can be uncomfortable but is minimized by "putting gravity to work for you." You should rest by lying down – ideally with your legs elevated above the level of your heart. Ice is also useful to reduce pain and swelling.

Avoid resting or sleeping in a seated position for a prolonged period. You can expect to be easily fatigued for more than a month following the surgery. You will want to spend more than your usual amount of time lying down – in bed or on a couch.

While in the hospital you will wear some heavy support stockings. These are helpful to prevent swelling and also may help to prevent blood clots. However, if you are moving around comfortably, your muscles are contracting and helping circulation and the stockings are optional.

SURGICAL WOUND:

There is surgical glue on the incision, which will flake off with time. There are no stitches (sutures) to remove – your body removes them for you by gradually absorbing them ("absorbable" sutures are used). However, as your body reacts to get rid of the sutures some additional local swelling may occur and you can expect some redness around the wound. It is also not unusual to have a small amount of drainage, or fluid leakage from the wound for 2 or 3 days after surgery.

You will have a waterproof bandage that is designed to stay in place for 7 days. Remove the Aquacel dressing (bandage) on the 7th day after surgery. After removing the bandage, wash the wound and the skin around it with soap and water.

If there is leakage wipe the wound area with alcohol (you can simply pour some on a wash cloth) and cover at least twice a day (more often if

necessary) with fresh gauze. If there is no leakage you will not need any bandage at all.

ACTIVITIES:

1. Work on getting your knee fully straight. This is a difficult, but important, part of your recovery.
2. Use your crutches or walker for at least one month after surgery.
3. Continue your daily exercise at home, two times a day.
4. Walk regularly: generally 10 to 15 minutes for the first month and then no more than 30 minutes for the next month. Use your walker or crutches as directed.
5. Place only as much weight on your new knee as is comfortable.
6. Get at least 8 hours of sleep each night, plus a 1 to 2 hour nap in the day.
7. Use ice regularly to reduce pain and swelling.

To preserve the life of your total knee replacement, there are some restrictions that should be followed for the rest of your life. Avoid repetitive jarring activities such as jogging. Tennis, racquetball and skiing are probably OK if you are already skilled and they are not associated with knee pain or a sensation of weakness. Avoid lifting heavy loads.

Ultimately, successful surgery of any sort depends on you, the patient. This is especially true in orthopaedic surgery. Unlike most surgeries, orthopaedic operations require rehabilitation and re-education of muscles. Thus you will find that you regain strength, mobility, and coordination relatively rapidly.

If you have questions after reviewing the information in this booklet, please call upon Dr. Christopher Birch and his staff to address your concerns. We are here to help you and make your journey to recovery as comfortable as possible. Thank you for trusting us with your care.

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ALTA ORTHOPAEDICS

ANTIBIOTICS AFTER YOUR HIP OR KNEE REPLACEMENT

There is some confusion about the need for preventative ("prophylactic") antibiotics after hip and knee replacement surgery.

It is true that **possibly** not everyone always requires them; however, it is not clear exactly who is perfectly safe without antibiotics for certain procedures after total joint surgery. It is recommended that preventative antibiotics are used, given that the consequences of an infected total joint are catastrophic and the amount of antibiotic needed is minimal.

An antibiotic should be taken before any dental appointment for the rest of your life. Antibiotics may also be needed before other medical procedures. It is important that any clinical provider be informed that you have a total joint replacement prior to any invasive procedure.

Usually the antibiotic is taken one time, one hour before the procedure. The specific antibiotic depends on the procedure (since the infection being prevented would be coming from bacteria living in the part of you where the procedure is being done). The doctor performing the examination or procedure is the one best qualified to determine precisely which antibiotic is needed.

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TASKS TO COMPLETE BEFORE SURGERY

1. Stop taking all anti-inflammatory medication including ibuprofen **SEVEN** days prior to surgery as well as **ALL** vitamins and mineral supplements. These may thin your blood. Continue to take all other medications prescribed to you by your doctors. You may take Celebrex or Tylenol based products.
2. Stop taking "blood thinners" at least 3 days before surgery unless directed otherwise by your Primary Physician or Cardiologist. You may need to temporarily take a shorter acting "blood thinner" (lovenox) after stopping your usual. If so, you will have the last injection early in the evening before surgery.
3. If you take an aspirin—that may be continued.
4. Schedule a pre-operative appointment with your regular doctor for medical clearance about 2 weeks prior to your surgery. This appointment may include a medical history, physical examination, chest x-ray, EKG and lab work. **OUR OFFICE NEEDS ALL RESULTS FROM YOUR DOCTOR AT LEAST 48 HOURS PRIOR TO SURGERY OR YOU MAY HAVE TO REPEAT TESTS AT THE HOSPITAL.**
5. Out-of-town patients might also need to meet with a Santa Barbara physician prior to surgery. This will be arranged by our office when necessary.
6. If applicable, obtain a letter from Dr. Birch's office that requests a temporary suspension from any athletic club membership.
7. Obtain a temporary DMV disabled parking permit from Dr. Birch's office **before** surgery if you plan to drive after surgery.
8. Please note that anesthesia charges are separately billed and are NOT part of your hospital bill. Pre-certification is obtained by our office for the surgeon and facility only.

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