

Department of Orthopaedics

Division of Joint Replacement & Reconstructive Surgery

## Total Knee Replacement

### What is a Total Knee Replacement?

The knee is a complicated joint, which is made up of muscle, tendons, ligaments, and bones. These components permit it to move in a number of directions enabling us to sit, stand, walk, climb stairs, and change direction (pivot). There are three bones: the femur (thigh bone), the tibia (shin bone), and the patella (knee cap). The surface of the ends of these bones is covered in cartilage. A cartilage pad, called the meniscus, sits between the femur and the tibia. The entire joint is bathed in a slippery fluid - synovial fluid -, which lubricates the joint and also supplies the cartilage with nutrients. The knee can be damaged by trauma (for example, falls, sports injuries, car accidents) or through disease such as with arthritis. Following trauma or disease, the articular cartilage wears away and raw bone begins to rub against raw bone. Once enough damage has occurred, the knee becomes painful and causes discomfort, limping, instability, giving way, and swelling, resulting in a decrease in the motion and function of the knee joint.

Total Knee Replacement is a surgical procedure, which involves the replacement of the worn-out parts of the knee with an artificial joint. A total knee replacement implies that everything about the joint is being replaced - which isn't true. What is actually being done is just a resurfacing of the bones of the joint. The prosthesis that is used is made up of plastic and metal and is placed on the joint surface of each bone. Most of the ligaments and all of the tendons remain intact. This allows the bones to glide against each other and allow the knee to bend and move without pain.

### Why Knee Replacement?

It is important for you to realize that this is an elective surgical procedure, which means that you have to choose it. It's not absolutely essential, although almost certainly you would be improved by it as long as there are no major complications. The reason for this report is to provide you with the kind of information as well as answers to some typical questions that will help you make that decision.

Once the knee is damaged to the point that it is painful or that it can no longer move in the way that it is intended, the patient goes to a physician to see if anything can be done to change this situation. There are things that can be done other than knee replacement for people who have problems with their knees. Whether those things are likely to be successful, depends a little bit on the specific individual circumstances. One of the alternatives to total knee replacement, of course, is to do nothing, simply to continue with your present disability and your present discomfort and modifying those, if possible, with:

- physical therapy
- anti-inflammatory medications and pain killers
- restricting your activities using a cane or crutches.

That may be a reasonable alternative for some people. Others, once they learn what is required may prefer a total knee replacement. There are also surgical procedures that are lesser surgical procedures than total knee replacement such as: osteotomy, arthroscopic debridement, and synovectomy. These surgical procedures should be discussed with you to determine if they are reasonable alternatives in your case. Depending on the stage of your disease or damage, total

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joint replacement may be the only reasonable surgical procedure. This means that basically the choice is either to proceed with a total joint replacement or simply to wait a little bit longer to see how rapidly your condition deteriorates and to try some other things including medication, limitation of activity, weight reduction, etc.

### **What Should You Expect?**

**Pre-admission Testing.** Within four weeks prior to your surgery, you will be asked to undergo several laboratory tests and possibly an electrocardiogram and chest x-ray. This is called pre-admission testing. This will help us to tell whether there are any conditions, which might increase the risk of surgery. A physical examination, performed by your own medical doctor or hospital staff here, is also a part of pre-admission testing.

### **Just Before Surgery**

You will not be allowed to drink or eat anything after midnight and on the morning of the surgery. In some cases, you may be allowed to take a medication you normally take in the morning with a minimal amount of water. If instructed to do so, you will need to let the admitting nurse know that you have done this.

When you come into the hospital on the day of surgery, you may have some additional x-rays that might not have been taken previously and have a physical examination by your surgeon or resident. If you have not already done so, you will be asked to sign an operative consent form to state that you understand what is being proposed and that you are in agreement that we may proceed with the operation. Just prior to surgery, an intravenous line will be started and you will be taken into the operating suite.

### **Anesthesia**

An anesthesiologist will see you on the morning of surgery. The anesthesiologist can answer specific questions you might have. Most of our surgeries are performed under regional anesthesia. This is a very safe form of anesthesia. It is safer than general anesthesia, which is one of the reasons why we recommend it. Spinal anesthesia disturbs the major body functions a lot less than general anesthesia. Unless there are some specific reasons why a spinal anesthetic should not be used in your case, this is our preferred method of anesthesia.

The anesthesiologist will give you some medication to make you sleepy so that you're not really aware of what's going on in the operating room. You will not be totally asleep either. However, the area that will be operated on will be totally numb throughout the operation and for several hours after the surgery.

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#### **Surgery**

As stated before, the surgery involves the removal of all of the damaged bone and cartilage. This is done with saws and drills much like a carpenter uses. The next step is to prepare the bone for the prosthesis. This involves using specialized tools to make precise cuts and to shape the bone so that the prosthesis will fit properly. The artificial joint is then placed into the bone with or without bone cement. The surgery itself takes between two to three hours, depending on the complexity of your case. It may depend on how many previous surgeries you've had, how badly deformed your knee is, how mobile it is, etc., as to how long it will take. The length of time is not really very important.

Total knee prostheses can be attached to the bone using a material called methylmethacrylate or, more simply, bone cement. With proper technique, this gives an immediate fixation of the prosthesis to the bone. Another method is called biologic fixation. This method requires that the surface of the prosthesis next to the bone is porous. With time, bone grows into the pores and the prosthesis becomes an integrated part of the joint. There are advantages and disadvantages to each type of "fixation." Furthermore, the type of fixation recommended to you will depend on your age, weight, and activity level.

#### **Recovery Room**

When your surgery is completed, you will go to the recovery room where you will be closely monitored until the effects of the anesthesia and intra-operative medicines are decreased and you are relatively awake and comfortable.

#### **Orthopaedic Unit**

When you have completed your stay in the recovery room, you will be transferred to your hospital room in the orthopaedic nursing unit. You will be lying on your back in a comfortable position. If you have surgery early in the morning, you may sit up on the edge of the bed that evening. In general, all patients are out of bed within twenty-four hours and attending physical and occupational therapy. The therapists will instruct you in learning how to use crutches or a walker and being taught some of the precautions that are necessary in the immediate post-operative period. The physical therapist will answer any of your questions and will go over all of the details.

#### **Risks**

It is important that you understand that there are risks associated with any major surgical procedure and total knee replacement is no exception. This section is not meant to alarm you but you really do need to know these kinds of things in order to make the decision as to whether you wish to proceed with a total knee replacement. These risks include the risk of death. That's true of any major surgical procedure requiring anesthesia and blood transfusion. The risk of death in our hospital for total knee replacement is in the order of 1 per 1,000 cases so that you can see that the risk is very small, but it's not 0. The specific risk for you will depend upon your general

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medical condition, your age, and the difficulty of the surgical procedure, but the risk of death itself is really very small.

Although precautions are taken, there are other potential risks that need to be taken into account. These include infection, limitations in knee motion, and loosening of the prosthesis. Although these do not occur frequently, you should be aware that they could occur.

A major potential risk is the risk of infection. Again, in this hospital, the risk of infection is in the order of 1/2% or less. 1/2% would be 1 case in 200 and, in our hospital; the risk is actually 1 case in 400. You will be receiving an antibiotic on the morning of surgery and this will be continued for 24-36 hours after surgery. There are other preventive measures that will also be undertaken to reduce the possibility of infection. In spite of these, a very small percentage of patients will develop an infection and that generally can be treated by antibiotics and cured. This would require longer hospitalization, treatment with antibiotics for a longer period of time, perhaps opening and draining of the knee and, in some instances, perhaps even removal of the artificial components themselves in order to cure the infection after which another knee replacement could be implanted.

Another risk of total knee replacement is that the motion of the knee may be more limited than before the surgery. To a certain extent, how well your prosthesis moves after it's put in will depend upon how much your knee moved before the operation. People with very stiff knees before the operation may not get as much motion as patients without stiff knees. In addition, some people whose knees moved easily before the operation may actually lose some motion after the operation. However, the important thing to understand is that it is motion without pain that is important. If there is a lot of motion before the operation but it is painful and after the operation there is some limitation of motion but it is pain-free, this is an improvement. We would like the knee to move to about 105°. This makes it easy for the patient to get up and down stairs and go up and down out of a chair quite easily. This will be one of the things that you will be required to do in the post-operative period. Physical therapy, both in the immediate post-operative period and after you go home, is very important. It's important to recognize that this is not something that is just going to come your way without any participation on your part. You will have to extend some effort to get the best possible result. We will be asking you to move your knee in the post-operative period. We will be asking you to work on strengthening your muscles.

One of the things that could occur is the loosening of the prosthesis. This loosening would not happen suddenly, but it would be a gradual process and it would be characterized by discomfort. In most instances, if a prosthesis becomes loose, it can be corrected but that usually means further surgery. Now what is the nature of this risk? That depends on several circumstances. We think in general, it's probably a cumulative risk of about 1% per year, so that if you have your prosthesis for 20 years, the possibility of loosening over those 20 years could be as high as 1 in 5. If you have your prosthesis for 10 years, it could be 10%. However, improvements in the instruments, prostheses, and the surgical techniques used today may result in a reduction in the risk of loosening.

There is a host of other possible complications if you review series of several thousand you will see literally dozens of possible complications that could take place but take place with exceeding rarity. Things such as muscle ruptures, pulling off of the tendon, injuries to nerves and blood vessels, superficial infection and opening of the wound, and other things of this nature may occur. They don't occur very often, but they can occur.

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#### Activity

What can you expect to be able to do with a total knee replacement, assuming it's successful? You can do anything that requires normal walking. You should be able to go up and down stairs easily. You should be able:

- to get in and out of a chair.
- should have enough movement to be able to put on your shoes and socks.
- should be able to walk distances that would be limited by things other than your knee.

You may well have other conditions that limit your activity. Other joints may be involved, so it's not possible to tell you that you would be able to walk 2-3 hours if you would be limited by something else. Yet, we do have patients who return to very active work and who basically walk more than a mile a day on an average basis after a total knee replacement. However, you should be aware that knee replacement is not meant for sports.

The main thing that we would like to achieve and the main purpose for doing a total knee replacement is to reduce your discomfort and we would expect that most people who have a total knee replacement would have either no pain whatsoever, or very minimal occasional pain which would not require any medication. Obviously, there are lots of things that can cause discomfort around the knee that have nothing to do with a knee replacement. We do not replace tendons, ligaments, or muscles. All of these can possibly be the source of discomfort. Many times this type of pain can be controlled with anti-inflammatory medication and, if you are taking that type of medication now, it's possible that you may still need to take that medication after the operation.

#### Helpful Hints

Once your surgery has been scheduled, there will be a period of time prior to your admission to the hospital. This time can be used to organize and plan for both your hospital stay and your care after discharge. The suggestions given here are a guide in assisting you to make the best decisions concerning your surgical experience as well as your full recovery. With this goal in mind, please feel free to adapt any of the following to your individual situation.

**MAKE LISTS** - Making lists can help organize your thoughts and plans during this time. Included here are several ideas for lists you may find helpful to you.

**QUESTIONS** - No doubt you and your family members will have questions regarding your pre-admission, surgical, and post-discharge care. Making a list of these questions will help in assuring that any and all information needed is obtained. Keep the lists with you (perhaps in a notebook) before, during, and after your surgery, so that the appropriate people involved with your care will answer all of your questions.

**MEDICINES** - Throughout your preoperative as well as your postoperative care, many people may ask what medicines you take. Be prepared by making a list of all the medicines you take (both prescription and over the counter). Include medicines that you are taking for medical as well as orthopaedic reasons. Add to the list any vitamins or nutritional supplements you also may be taking. Be sure to also list any allergies you have to medicines or other substances. Keep this list

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handy and definitely bring it with you at the time of your pre-admission work-up as well as the day of admission to the hospital

**APPOINTMENTS** - Depending on where your pre-admission testing is performed, you may have several appointments before your actual admission to the hospital. Pre-admission appointments may include scheduling doctor's appointments, lab tests, blood donations, x-ray appointments, and preoperative class appointments. Keep yourself organized by listing the date and time of any appointments necessary and checking them off as they are completed.

**PLANNING** - Take the time to plan for your care after surgery. Planning and preparing ahead of time will make your experience much more pleasant and productive. By making a list of who and what will be needed to assist you throughout this time, you can be assured that nothing important will be missed. Ideas for planning might include a list of who will be available to assist you to travel to appointments and stay with you after discharge if necessary. The list might also include your plans for home care assistance, meals, and rehabilitation after discharge from the orthopaedic unit.

**EVALUATE YOUR HOME** - One of the most important goals of surgery is for you to return home and function as independently as possible. By evaluating your home for safety and ease in functioning before your surgery, you can avoid what may later seem like large obstacles to your recovery.

**MULTI-LEVEL VS. ONE LEVEL HOMES** - If you live in a multi-level home, consider where you will stay after coming home, keeping in mind that you should be able to climb stairs after discharge. For many patients in a 2 level home, they get up in the morning, bathe and dress upstairs, then come down to the first level and remain there the rest of the day. If there is no access to a bathroom on the 1st level, it may be necessary to obtain a portable toilet. While there is no set limitation to the number of stairs you can climb, certainly in the first several weeks after discharge, stair climbing may tire the patient. As stability, confidence, and strength continue to improve, stair climbing becomes more frequent.

A one level home presents minimal problems since all rooms are available to the patient.

- **STAIRS- INSIDE/OUTSIDE** As mentioned, all patients are taught stair climbing while in the hospital. Evaluate any steps at your home prior to your surgery. Make sure that the handrails are sturdy. If you desire, install rails on both sides of the steps for maximum convenience going up and down. If outside steps do not have a handrail, perhaps now is the time to install one if possible. Evaluate the entrances to your home. Select the one that has the easiest access for you while using crutches or a walker. You'll find if you work on these ideas now, your recovery time won't be hampered by trying to make these decisions.
- **BATHROOMS** - Safety is the keyword when you look at your bathroom. Make sure you can maneuver. Remember, you will be using a walker or crutches for 6 weeks. Some ideas to consider are:
  - shower/tub rail
  - rail on wall by toilet (many times a sink to the side of the toilet can be used for support)
  - raised toilet seat
  - shower/tub bench
  - non-slip mat inside tub/shower

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Many patients who have been living with joint problems already have some equipment in their bathrooms. While not all of the equipment listed is required, the most important one patients need is the raised toilet seat. If you are not currently using one, you may want to wait until you attend the preoperative joint class or until your admission to the hospital. By doing so, you and the occupational therapist can decide which type is best suited for your bathroom. The second most popular piece of equipment used by patients is the tub bench. This allows the patient to be seated while in the shower since standing without support is not allowed the first six weeks after surgery. If you intend to use a tub bench after surgery, please be aware that it will be necessary to remove any tub doors in order for the bench to fit inside the tub. Our recommendation is to purchase a tension rod and shower curtain, and store the tub doors until they can be used again.

The other important aspect to consider in the bathroom is to have any supplies within easy reach. If possible, place shampoos, shaving equipment, toilet tissue...within easy reach (waist to chest level) where there is minimal or no bending over or reaching too far for supplies. You'll find that this is the most efficient way to maneuver, meets any position restrictions recommended in the postoperative phase, and by far is the least likely to cause discomfort or injury after surgery. An added plus is that you'll be able to quickly identify when supplies are running low.

- **KITCHENS** - Again, planning ahead can mean the difference between a recovery period that runs smoothly or one that you feel is constantly frustrating. Using safety and efficiency as the primary guides, take a look at your kitchen. Think about meals and the equipment used for them. Put pots, pans, canned goods and cleaning supplies at waist to eye level for ease of access. When using crutches or a walker you're not going to want to be bending too low or reaching too high for safety's sake.

Use your upper cabinets or counter space to store your most frequently used equipment.

If you plan on preparing meals and freezing them before having your surgery, try to place them in containers that will go from the freezer to the oven, stove, or microwave to make life easier. (Don't make any containers too heavy if you are the one who will need to get them out.)

Remember the refrigerator too. The same rules apply - try to keep the items you'll use most frequently on the upper shelves to maximize energy conservation and maintain any position restrictions you may have.

- **GENERAL HOUSEHOLD** - In general, most households need just a few adjustments made in order for you to function more effectively after surgery. As with all the suggestions given here, remember to adapt what may be suited to your individual needs.

**Floors** - Be sure that your pathways are cleared. If you have small items sitting on floors or stairs, you may want to put these away for now. If you have small children at home, educate them now to put away toys, books, etc. so that everything is up from the floor.

**Household Pets** - If you have indoor pets such as cats or dogs, please be sure that someone will be available to help care for them. You will need assistance with their care while using a walker or crutches. In addition, consider the safety factor of functioning in your home with an indoor pet. Remember, you will always want a clear pathway and every effort made to avoid injury.

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Carpets - Scatter rugs should be placed away for later use. They can cause you to lose your footing and perhaps fall. Even those with rubberized backs can be an obstacle to crutches or walkers so our advice is to get them off the floors while recuperating.

Furniture - In general, patients are most comfortable sitting on higher furniture with arms. Sofas or chairs that are too low can cause problems bending too much to get into, and straining too much to get out of. Pick a comfortable, moderate height chair or sofa for sitting so that your knees are on a level with or slightly lower than your hips when you are seated. Foam cushions on chairs or sofas that are too low may help to keep you on the right level and are available through the physical occupational therapy department while you are in the hospital.

Recliners, if the correct height for comfort and any position restrictions, are a popular type of chair patients use at home.

- **GET COMFORTABLE!** - Make sure that the things you need - like the telephone, TV remote control, newspaper... are within your reach. You may want to place a small table near the chair or sofa where you will be sitting after surgery in order to keep these things handy.
- **PACKING FOR THE HOSPITAL** - Our advice for this is to pack lightly! The hospital supplies patients with gowns, robes, non-skid footies, and a small personal hygiene pack, which has a toothbrush, tissue, soap, and a comb. Most patients use hospital gowns at least for the first day or two after surgery. If you prefer bringing your own clothes, be sure that they are comfortable and loose fitting. They also should allow for easy access to the operative site since this area is checked frequently to be sure no problems develop. Shorts are a popular item for Physical Therapy sessions. Avoid gowns or other clothing made of nylon - they tend to make people perspire and become uncomfortable when in bed for any length of time.
- **FOOTWEAR** - Any closed back, flat shoe or slipper with a non-skid sole is appropriate for the post-op period. Tennis shoes are ideal and inexpensive.
- **TOILETRIES** - Items such as deodorant, combs, toothbrushes, etc. should be brought with you as desired.
- **EQUIPMENT** - Any crutches or walkers you will use post-operatively should be brought on the day of admission so that they are readily available when you start therapy.

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### **Knee Home Exercise Program**

Some exercises will be taught to you during your physical therapy sessions while in the hospital. Please do not hesitate to ask questions regarding these if necessary. Pre-operatively, do the exercises daily. For weeks 1-6 do the exercises 3 times a day; weeks 7-12 do exercises 2 times a day; and for weeks 13-26 do exercises daily.

1. ANKLE PUMPS - Bend your ankles up and down. Do 20 repetitions.
2. QUAD SETS - Keeping your knee straight, tighten your thigh muscle by pushing the back of your knee down on the bed. Hold for a count of 5. Relax. Do 20 repetitions.
3. HAMSTRING SETS - Keeping your knee straight, push your heel into the bed. Hold for a count of 5. Relax. Do 20 repetitions.
4. TERMINAL KNEE EXTENSIONS - Lying on your back with a roll under your knee, so that it is slightly bent, straighten your knee and hold for a count of 5. Relax. Do not lift your leg off the roll. Do 20 repetitions.
5. GLUTEAL SETS - Either lying flat on your back or sitting, squeeze your buttocks together and hold for a count of 5. Relax. Do 20 repetitions.
6. KNEE FLEXION - Sitting in a chair leaning against the backrest, bend your operated knee and slide your foot as far back under the chair as possible. DO NOT LEAN FORWARD while performing this exercise. Do 20 repetitions.
7. HEEL SLIDES - Lying flat on your back or sitting, bend your knee and slide your heel up the bed, keeping your toes and knee pointing up toward the ceiling. Now slide your leg back down straight. Do 20 repetitions.
8. STRAIGHT LEG RAISES - Lying flat on your back, bend your unoperated leg up and place the foot flat on the bed. Keeping your operated knee straight, slowly lift your leg up, making sure to lift the heel first. Lift only as high as your other leg. Now slowly lower your leg back down. Do not hold. Do 20 repetitions.
9. HAMSTRING STRETCHING - Sitting with one leg off the bed and the foot on the floor, and the operated leg straight on the bed, lean forward reaching for your toes of the straightened leg. Keep your back straight. Hold for a count of 10. Relax. Do 10 repetitions.

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## **Metal Detectors and Implant Cards**

All patients who have undergone total joint replacement receive a metallic implant card. The purpose of this card is to identify the patient as having an implant and avoid problems with future problems during security screening.

While most patients have no trouble passing through metal detectors after total joint surgery, several patients have reported triggering the alarm. By carrying the implant card this assists you in being identified as having a total joint replacement.

## **Handicap Tags**

Handicap tags are readily available to patients both before and after surgery. Please take advantage of this benefit if you feel this would be useful. Temporary permits are available, and require a physician's signature on the application. If you wish to apply for these, complete the required forms and either send or bring them to our office for the physician's signature. For more information regarding these tags, you can visit the [Florida Department of Highway Safety and Motor Vehicles](#) website, or you can call them at (850) 922-9000.

## **Infection After Total Joint Surgery**

### **General Information**

Infection after total joint surgery can be a serious occurrence. In our experience, and across the country, the risk of infection after total joint surgery is approximately 1/2% or less. This is equivalent to 1 case in 200 having an infection occur after surgery. In most cases, these infections can be cured. They may require the patient to be hospitalized longer, treated with antibiotics for a longer period, or perhaps even to undergo a second operative procedure.

### **Signs of A Possible Infection**

The signs of a possible infection are:

- a temperature elevation (especially if prolonged)
- localized swelling, redness, or tenderness
- purulent (pus) drainage from the incision
- any change in color or odor of drainage from the incision

### **Prevention of Infection**

When a patient is hospitalized for a total joint replacement, the prevention of infection begins in the operating room. Surgery itself is performed in a sterile environment in the operating room, with special air filters to help provide clean air that is free of most bacteria. In addition, patients

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receive antibiotics throughout their surgery via the IV line which is started upon admission to the surgical area.

During the hospitalization period, patients continue on their IV antibiotics for 24-48 hours as a preventive measure. In addition, careful examination of the incision, observation of any drainage, and monitoring of the patient's temperature are all preventive measures taken throughout hospitalization by the nurses and physicians caring for the patient.

At the time of discharge patients are given a list of discharge instructions which contains the signs of infection and whom to call if these signs become apparent.

Long range post-operative prevention of infection is maintained by total joint patients taking oral antibiotics prior to procedures which could possibly introduce bacteria into the bloodstream. Once a patient has undergone total joint surgery, he/she should always inform other physicians that they have a joint replacement.

#### **Treatment of Infection**

If a patient does develop an infection after total joint replacement surgery, it is either a superficial (localized) infection or a deep infection. Treatment for the infection will be based on several criteria. These criteria are:

- the type of organism causing the infection
- the organism's sensitivity to antibiotics
- the length of time of the infection
- the condition of the patient's bone

Once the diagnosis of the type of infection is made, treatment is done in one of the following ways:

- **Antibiotic Therapy** - Treatment for a superficial or localized infection consists of antibiotics given either by mouth or by IV. Treatment may be anywhere from 3 days to 1-2 weeks.
- **Incision and Drainage** - For more serious localized infections an I & D (incision and drainage), or "cleaning out" of the surgical area may be performed. This is a limited surgical procedure in which the wound is washed out and the patient is treated with antibiotics IV. In this procedure all of the original prosthetic components are retained.
- **Direct Exchange** - For a deep infection which has not advanced to the bone, the recommended treatment is to perform a "direct exchange." In this surgical procedure the total joint components are removed, the surgical area is cleaned, and new total joint components are inserted. These procedures are performed at the same time, and the patient is treated with IV antibiotics before, during, and after the surgery.
- **Delayed Exchange** - This treatment is performed for deep infections in which the bone is involved. In the first surgery, all total joint components are removed. The surgeon may then insert a temporary prosthesis which is a "spacer" made of cement and treated with antibiotics. This temporary prosthesis is left in place for a period of time (usually 6-8

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weeks), during which the patient is also maintained on IV antibiotics. A second surgical procedure is then done in which the surgeon inserts new total joint components. This 2 stage treatment of infection will necessitate separate hospital admission for each surgical procedure.

- **Fusion/Girdlestone** - If a total joint replacement patient's infection cannot be eliminated or if the condition of the bone is too severe to allow for the exchange treatments discussed above, the patient and surgeon may decide that the preferred option is to remove all of the total joint components permanently. In the case of a total knee patient, the procedure to be performed is called a fusion, and in the case of a total hip replacement the surgery would be a girdlestone procedure. The goal in both procedures is to provide a stable, solid, infection-free lower extremity which will allow the patient to perform activities of daily living. However, neither procedure allows normal joint function. Comfort and reasonable activities are still possible. Surgical fusion of a knee or girdlestone procedure of the hip is performed in less than 10% of all infection cases after total joint surgery or 1 in 2,000 cases.

#### **In Summary**

As stated above, the occurrence of an infection after total joint surgery can be a serious event. Infection may occur immediately after total joint surgery, after the patient goes home, or even years later. For this reason if an infection develops in any part of a total joint replacement patient's body, this should be addressed. All total joint replacement patients are advised to consult their physician if they experience any signs of an infection. In addition, these patients are advised to make any physicians they may see aware that they have a total joint replacement. Careful follow-up of total joint patients and appropriate communication between the patient and their physicians are always the best measures in the prevention of infection.