

# **Your Personal Knee Surgery Guide And Workbook**

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Welcome to Your Personal Knee Surgery Guide and Workbook -Designed to help YOU understand your total knee replacement surgery, before, during and after it happens.

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To Our Patients:

This workbook is designed to help you understand and remember the important details of your knee surgery. From the moment the decision is made to have total knee surgery to months after your surgery, you will have many questions. This Workbook will answer some of those questions and inspire more.

We have written this guide for your use. Please read it thoroughly and feel free to write down any questions or comments you have **in the Workbook itself**. We have also included a glossary of medical terms in the back. Be sure to ask us and your other health care providers for the answers to your questions so that you completely understand what you need to do and what will be happening during the next few weeks. Remember that no question is silly or insignificant. Your surgery is an important event in your life and you need to understand it well.

**Your Personal Knee Surgery Guide and Workbook** is also meant to be your manual during your hospital stay. Please make sure to **BRING IT WITH YOU TO THE HOSPITAL** to use as a reference and a place to jot down notes. After your hospital stay, use this booklet as a resource for remembering proper body mechanics and exercises.

As you read, you will have questions and space is provided throughout the booklet for you to write them down. Use this booklet to remind you of those questions and to get the answers you need. We will be glad to discuss your concerns with you. As you understand more about the surgery and the postoperative process, you will be able to actively participate in your recovery and to achieve the results you want from this surgery -a pain-free knee.

To your good health,

Ronald M. Carn, M.D.

## Why Me?

Approximately one in seven people suffer from significant **arthritis** (inflammation of the joints). There are many causes of arthritis, but the common factors are pain, stiffness and weakness around the arthritic joint.

## Your Knee

The knee is a major weight-bearing joint, which functions as a hinge. The thigh has two rounded surfaces and a groove for the kneecap. The lower portion is formed by the upper end of the leg bone, the **tibia**. The flat surface is called the "**plateau**". The thigh portion moves smoothly over the tibia and is cushioned by the semilunar cartilages (menisci) and bound together by many ligaments.



The knee can be damaged from trauma or from inflammation. Either can result in severe pain that is not relieved by medications or modification of activities.



**Trauma:** With an injury to the knee (perhaps from a fall or car accident), the smooth surface of the joint may be broken. This can result in an arthritic joint and subsequent pain.

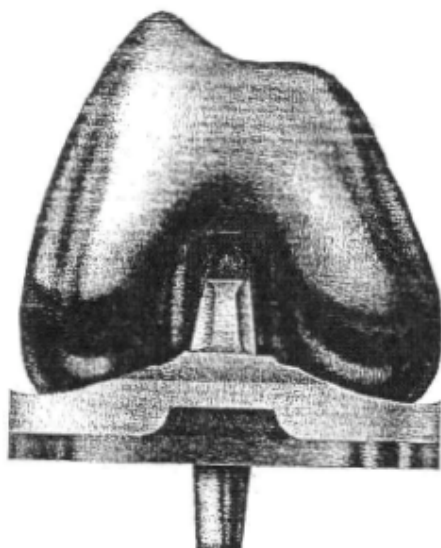
**Inflammation:** A healthy knee joint is covered by a smooth gliding surface. Some diseases will roughen and pit this surface, causing pain. The two most common diseases are **Osteoarthritis** and **Rheumatoid Arthritis**, causing joint pain, stiffness and inflammation. These in turn hamper the ability to walk and function in normal activities of daily living.

Osteoarthritis usually affects the surfaces of the weight-bearing joints, and usually only affects one or two joints in any one person. It is believed to be caused by abnormal and prolonged wear and tear to the joint surfaces -where the articular cartilage (the cartilage that covers the edges of the bones) wears away and bones grind against each other and microscopic debris is created, causing inflammation. The grinding and inflammation are both sources of pain.

Rheumatoid Arthritis may affect any joint. The specific cause is unknown, but it is often accompanied by abnormal immune system responses and inflamed joints throughout the body. In some patients, other body systems are also involved.

Conservative treatment for arthritis patients will be attempted before a decision to consider surgery is made. Conservative treatment may include walking with a cane or crutch and limiting stressful activities. Medications that help reduce inflammation may also be used. When the relief of pain with conservative treatment is unsatisfactory, a decision to consider surgery may be made.

## What is a Total Knee Replacement?



If the knee is substantially worn out, it generally causes great pain. In this case, the best surgery is to replace both the surfaces of the femoral bone and the tibial bone. They can be replaced with a metal and plastic bearing that function similar to the natural knee. This replacement is technically called a **total knee arthroplasty** (commonly known as a total knee replacement). This should be thought of as a resurfacing. Like "relining the brakes." The binding ligaments and muscles are yours and work in the same way after surgery.

There are many kinds of materials that can be used for this surgery. The materials currently used in knee surgery have a long history of safety and include cobalt chrome, titanium and high-density polyethylene.

## How is the total knee held in place?

The parts of the knee replacement can be held in place by different methods. One method uses plastic cement or grabbing material called **methylmethacrylate**. This is an acrylic polymer that sets very quickly. It is applied during the operation to fix the metal to the bone. Another method uses the natural growth of the bone to attach the new knee lining. This method requires the body to participate by using a **porous metal prosthesis** (with many small holes), which allows the bone to grow into it and mechanically attach the artificial knee to the bone. The method used is a factor of age, bone quality and other medical considerations.

### Questions:

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## Are there risks in knee replacement surgery?

If there were no risks and surgery was pain-free, you probably would have had your knee surgery a long time ago. But, as you know, medical treatments do have risks and may have pain associated with them, and surgery is no exception.

Great improvements have been made in orthopedic surgery with some of the most significant advancements occurring in joint replacement operations. Despite this being the "best time ever" to have your knee replaced, there are still some real risks involved in this type of surgery.

**Infection** Any time that skin is violated (e.g., punctured, cut or burned), **infections** can occur. With a joint replacement, there is a foreign, inert material implanted in the body and this is susceptible to infection, especially in the early postoperative period. Many new special techniques are used to prevent infection. As a result, the problem has dramatically decreased during the last few years.

infection. Special dressings and supportive hose are used to help keep gentle pressure on the operated area in order to prevent swelling. Elevation of the leg (**with the ankle above the heart**) and moving the ankles and toes will also help.

### **Phlebitis [also known as DVT (deep venous thrombosis) or VTE (venous thromboembolic disease)]**

Clotting of the veins in an abnormal fashion is called phlebitis. This can be a problem in joint replacement surgery and can result in swelling and pain in the leg. On occasion, a clot can break free in the vein and go all the way into the lungs causing difficulty in breathing and pain in the chest (pulmonary embolism). This is a rare problem and many precautions are taken to minimize these risks. Your blood will usually be thinned during your hospitalization. In addition, compressive and supportive hose are used to prevent the blood from pooling in the legs. **The most important preventive measure is to use your leg muscles.** You should move your toes and ankles as much as you are able -starting in the recovery room (don't be afraid to wiggle your toes, ankles and heels right away). You will be gotten out of bed starting the day after surgery, which will greatly aid in preventing phlebitis by promoting normal muscle contraction and deep breathing.

If you have a history of phlebitis in the past, then you may need to be placed on a low dose of Coumadin well before the surgery. **Please inform us if you have had phlebitis in the past.**

### **Nerve Injury**

Injury to major nerves is rare. Small skin nerves will be cut as part of the incision. This results in small areas of numbness, usually on the lateral (outside portion) of the knee, but this is minimal and not a long-term problem.

### **Breathing Problems**

Incentive spirometry (a device which helps you breathe deeply) is used to help decrease breathing problems like pneumonia. Use of the device is discussed later in this booklet.

fluid intake minimizes urinary tract problems and special attention is also given to skin care to prevent areas of soreness or skin breakdown (such as bed sores or rashes).

Although these represent real and potential problems, they are generally rare. All of the medical professionals involved in your surgery and aftercare will do their best to prevent these problems. Another important consideration is that many of these preventive techniques depend upon **your cooperation** as well. As a result, you can actively help to reduce the risk of complications by participating as fully as possible in these activities and treatments.

## **Questions:**

### **Blood Transfusions**

With this type of surgery, **blood** is sometimes lost and **transfusion** may become necessary. When possible, a self-donation blood program will be used which requires you to donate blood before surgery. This blood can then be used after surgery as needed. You will take iron supplements to allow your body to manufacture and replace blood. You will be sent information on blood donation prior to surgery.

There are risks of receiving blood after surgery. They include fever, kidney problems, antibody formations and even low blood pressure. These risks are minimized with transfusion of your own blood. We therefore encourage our patients to give blood before surgery as long as there are no medical problems that would prevent them from donating.

## **Pain Medications**

Our goal is to reduce the amount of pain you will experience after having your surgery. We will do our best to control your postoperative pain by using narcotics for the first few weeks. We have a Post-Operative Pain Management Policy that we use to help control our patient's pain. We understand that the effectiveness in controlling pain varies greatly from person to person.

If you need a prescription refill: Call your pharmacy and have them fax the office a refill request. Please note that our office is closed on Fridays. Allow 48 hrs. for refills.

Narcotics have many bad side effects when used for more than 3-4 weeks. Chronic use of narcotics clouds the mind and decrease our tolerance to cope with problems. If you experience difficulty-managing pain after surgery our office will refer you to a pain management clinic for further evaluation.

## **Anesthesia**

At the time of surgery, one of two types of anesthesia is generally used. One method is an injection given into your back in order to numb you from the waist down. This is known as **spinal anesthesia**. The other method, known as **general anesthesia** is when medicines are used to help you go to sleep and requires a tube to be placed in your windpipe to help you breathe. Spinal anesthesia is preferred and in some cases it can reduce blood loss and the risk of phlebitis. Most joint replacements are done with spinal anesthesia, as this is well tolerated. Patients who have had both a general anesthetic and a spinal anesthetic usually prefer the spinal, as they feel better after surgery. The anesthesiologist will discuss the different types and risks of anesthesia with you prior to your surgery. The two of you will decide on which type of anesthesia is safest and best for you.

## **Questions:**

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## **Preparing for Surgery**

### **Preventing Potential Problems Before Surgery**

Tooth and gum problems can allow bacteria to enter the blood stream, placing your newly operated joint at risk for infection. Therefore, it is **IMPERATIVE** that you have any dental problems taken care of weeks prior to your joint replacement surgery. Also, please remember to brush your teeth at least twice a day. Your teeth and gums need to be healthy and free from infection for at least two weeks prior to surgery.

Any skin rashes, cuts or scrapes on the leg to be operated increase the risk for infection. If you sustain an injury or develop any skin problems within a few weeks prior to your scheduled surgery, please call the office, as we will likely want to see you and assess this.

If you develop symptoms of a urinary tract, respiratory or sinus infection within the month prior to surgery, please call the office. Often times we can arrange to have this evaluated and treated by your family physician and avoid canceling the surgery.

Because the bowels can become sluggish after surgery, it is important to eat a diet rich in hits and fiber and to drink plenty of water at least two weeks prior to surgery. This will help prevent constipation.

### **Upper Extremity Exercises**

Using a walker or crutches requires strong upper body muscles. Strengthening exercises can be performed which will help prepare you for "walking on your hands."

Wall Pushups can be done by standing arms length away from a wall. Keep your body stiff and bend your arms until your head touches the wall. Slowly push away from the wall, and then repeat.

Chair Pushups are done in a chair with arms. Sit in the middle of the chair with your hands on the arms of the chair and your elbows bent behind you. Pushing with your arms, lift up your entire body, trying not to use your legs. Your feet may stay on the floor. Hold for 10 seconds then slowly lower yourself down. This method is most like using a walker or crutches.

Hand Exercises should be done to prevent hand soreness when using a walker or crutches. Squeeze a rubber or silicone ball several times throughout the day.

Try doing your exercises in sets of 10 or 20, resting briefly between sets. Don't forget to hold -that will help build strength and endurance. Try to exercise at least three times a day, because the stronger your arms are, the farther you will be able to walk.

Remember to exercise **slowly** and **do not perform exercise if you experience pain.**

## STEPS TO PREPARE FOR SURGERY

Once you decide to commit to surgery, there are several things that must be done prior to your hospitalization.

1. Call Dr. Carn's Office Manager/Surgery Coordinator (Marliese @245-0325 on Mondays or Wednesdays) and choose a surgery date.
2. Call your Primary Medical Doctor and schedule an appointment for a pre-operative clearance. Also note: you must receive clearance from your cardiologist if you have a cardiac history. **This must be done and the clearance must be received in our office the week prior to your surgery in order to proceed.**
3. You will receive a surgery packet from our office approx. 2 -3 weeks before surgery. This packet will contain a surgery confirmation letter with all relevant information along with a number of things that must be completed prior to your pre-operative appointment with Dr. Carn.
4. You must have **lab work, a chest x-ray, and an EKG** done the two weeks before surgery. These tests are important and must be received prior to your pre-operative appointment with Dr. Carn. If you are experiencing any symptoms of a Urinary Tract Infection, please call Marliese @245-0325 ASAP. This would need to be addressed and treated in advance to your surgery.
5. All the paperwork in your surgery packet must be completed and brought with you to your pre-op appointment with Dr. Carn. This includes: Medical History Form, Medication History (handwritten or typed on the original form), Special Concerns, and Surgery Consent initialed, Signed and Dated.

10 days prior to surgery you will need to stop some medications. A list of medications to discontinue will be enclosed with your surgery packet. You will need to stop all NSAIDS (non steroidal anti-inflammatory medications). **If you are on a blood thinner (ex. Coumadin, Plavix) please call Marliese and let her know as this may need to be reduced or stopped before surgery. Do not take any Aspirin within 10 days of surgery.**

Some of these medicines may be helping your pain. After you stop the medicines, you may experience an increase in your pain. If needed, you can call the office for a prescription for pain medicines. Also, you can decrease your activities, use ice packs, and use your cane or walker.

About one week prior to surgery, you will be seen here in the office. At that time, the procedure will be explained to you and your questions answered.

To help prevent infection in your wound after surgery, we want you to shower with a special soap. The soap is intended to reduce bacteria on the skin. The medicated soap is called **pHisoHex**. You will receive a prescription for this soap at your pre-op appointment. The soap is not for your head/face. You should shower with the special soap the evening prior to surgery, then again the morning of the surgery before you go to the hospital. Take care to emphasize cleaning the area of the operation. Please pay special attention to the hard-to-get-to areas that are normally places where bacteria gather (i.e., genitalia, buttocks, or fat folds). Be sure to clean these areas with extra care before surgery. **Do not use any other soaps, lotions or perfumes around the surgical site after you shower with the pHisoHex.**

**Coumadin** is a blood thinner that is used to help prevent blood clots in the veins of your legs, which sometimes referred to as DVT (deep venous thrombosis) or VTE (venous thromboembolism). This medication is a prescription medicine that will be given to you at the time of your preoperative evaluation by Dr. Carn. The first dose is usually given before surgery. There will be specific instructions given on how to take the medicine so that it will be effective in your body following your operation. It is necessary to do this throughout your hospital stay.

If you are taking Coumadin for another medical condition prior to your surgery, your Coumadin dose will be adjusted in conjunction with your primary medical physician and will not affect the outcome of your medical problem or your surgery in the long term. Each regimen varies from patient to patient, and will be arranged specifically for that patient depending on the amount of Coumadin you are currently taking. **If you are currently on Coumadin or have ever had a blood clot (DVT, Phlebitis) please call the office and inform Marliese a.s.a.p.**

review and sign an operative consent form (permitting the hospital and Dr. Carn to do your surgery), and get one more blood test to check your blood count prior to surgery. At the hospital pre-op you will be informed on what time to arrive for surgery and what medications to take the morning of surgery.

Please do not get any biopsies or have a dermatologist work on your skin for several weeks before surgery. Your skin must be clean and clear of any infections or open area's to proceed with surgery.

### **Pre-Surgery Skin Care**

1. If you have any sores or infections within two weeks of surgery, be sure to inform your doctor.
2. Do not shave the area of surgery. We will use special clippers at the hospital.
3. Wear long sleeved shirts and long pants while playing with puppies, kittens, or any other animals that might scratch you.
4. Wear protective clothing while outside doing yard work.

## **The Day Of Your Surgery**

You will be asked to check into the hospital two or three hours prior to your surgery. Remember to shower again with the pHisoHex. **BRING YOUR WORKBOOK WITH YOU TO THE HOSPITAL.**

You will be asked to put on a hospital gown and remove your jewelry and dentures. It is generally a good idea to leave your jewelry and other valuables at home (this includes your wedding ring and other items that you may not normally remove).

The nurse will start an I.V. and you will be fitted with the special compressive stockings to help prevent edema and phlebitis by keeping blood from pooling in your legs. One stocking will be placed on the normal leg. The leg to be operated will be shaved and scrubbed with an antibiotic skin preparation and after surgery the other stocking will be placed on this side. You will be instructed on the use of the breathing exercise device (incentive spirometer) to be used after surgery.

The anesthesiologist will discuss types of anesthesia and relative risks. In order to reduce the risks of anesthesia, you will have been instructed to refrain from eating and drinking for a number of hours. This short fast usually begins at midnight on the night before surgery or very early in the morning if your surgery is later in the day. It is critical that you do not break this rule as the consequences can include serious complications after surgery.

When the operating room is ready, you will be placed on the operating table. A catheter will be placed in your bladder to keep it drained, as the anesthesia will prevent you from urinating. The bladder catheter will be removed on the second day after surgery.

Medical staff in the O.R. will position you for surgery. Special solutions will be used to clean your skin and then the sterile draping will be placed. This draping is used to prevent contamination and reduce the chance of infection at the time of surgery.

## **Questions:**

## **After Surgery**

After your surgery you will be taken to the recovery room where you will be kept until the medications from your operation have substantially worn off. As the anesthesia wears off, the pain from your surgery will become apparent and the nurses will give you pain medication as needed.

Your incision will have a kneeRap© about the operated leg to hold the dressing in place and provide gentle compression over the surgery site. There will be a tube coming out of the dressing (the tube will have blood in it). Do not be alarmed. This is part of the vacuum blood evacuation system that prevents blood from accumulating deep in the wound. This helps to prevent infections and decrease pain. This tube is usually removed two days after surgery.

You will be wearing the special compressive stocking on both legs. These should be pulled up because they are not very effective if they wrinkle or bunch up (it will be **your** job to help keep the hose pulled up and smooth on your legs). You will also have pneumatic compression hose, which are the balloon-like large stockings that massage your legs and keep the blood from pooling in your legs.

After the surgery (usually on the second day) your leg is placed in a Continuous Passive Motion Machine (**CPM**), which will gradually exercise your knee and help you regain movement. The amount of movement (bend) will be gradually increased during your hospitalization and you will be taught how to adjust the controls on the CPM. Please try to increase the amount of bending as much as possible. You should plan to use the CPM **whenever you are in bed during the day**. You can also use it at night if you wish. By the time you are discharged you should have at least 90 degrees of knee motion and good control of the muscles about your knee. You will not be using a CPM after you are discharged from the hospital.

**Don't be afraid to move your ankles up and down** as this will actually help to keep the blood from pooling in your legs and help keep swelling out of the legs and wound. Move your toes, feet and ankles a lot to promote good circulation. Begin toe and ankle motion while in the recovery room.

It is very important that you cough and **breathe deeply** as well as use the incentive spirometer machine to keep your lungs well inflated and help prevent pneumonia. We suggest you use your incentive spirometer at each commercial on T.V.! **BE SURE TO USE THIS DEVICE AT LEAST 10 MINUTES EACH HOUR.**

To help make your pain tolerable, there will be numerous strong pain medications available. For the first one or two days after surgery I.V. narcotics will mainly be used. These medications are generally administered through the Patient Controlled Analgesia device. There is a pump that administers narcotics directly into your intravenous catheter. The pump is controlled by a button, which you push when you are in pain. Dr. Carn and your nurses control the settings. If you are not getting pain control, then ask your nurse for help. After one or two days, pain pills are usually more effective and your PCA will be discontinued.

**Make sure to request your oral pain meds when you begin to feel uncomfortable. DO NOT WAIT until you are in a lot of pain, as it takes time for the narcotics to take effect** As a routine precaution to prevent infection, I.V. antibiotics will be administered for two days. After all of your intravenous medications have been given, your I.V. will be removed (usually the second or third day).

During your hospital stay, your blood will continue to be thinned to help prevent phlebitis. To allow safe administration of the anticoagulant (blood thinner), it is necessary to draw blood every day. The amount of anticoagulant medicine you are given is based on that day's blood test.

Also, your blood count will be checked daily for three days to see if you need a blood transfusion. If you need a transfusion and have donated blood for yourself, this will be given back to you; otherwise, bank blood will be used.

Your supportive stockings (TED hose) will be needed for approximately four weeks after the surgery. Be certain to pull them up often, paying special attention to their placement around the knees and thighs. Try to keep them wrinkle-free and creaseless. If the hose tend to roll up on your thigh, then wear them only during the day and leave them off at night. The pneumatic hose, which massage your legs, will only be used during your hospital stay.

At first, you may not feel like eating. After a few days, your appetite will return. It is very important that you do your best to drink plenty of fluids to replace those lost during surgery, and to maintain a good urine output. Usually a catheter is required to drain your bladder. This catheter will remain in place for a minimal amount of time -just long enough to allow proper urination.

Occasionally, a urinary tract infection can result from the catheter so it is used only used for a few days (usually two). Physical therapy will usually begin the day of surgery if you have surgery in the morning. If your operation is later in the day, you can expect to be up with

P.T. the next day. The physical therapy staff will work with you on a regular bases, emphasizing walking and special exercises to improve strength and function. (See **Physical Therapy** section later in booklet)

The length of stay in the hospital is quite variable. For routine knee replacement surgery, it is usually three days. Depending upon your home circumstances, it may be necessary to transfer you to a rehabilitation facility for additional therapy until you are able to do all of the things you need to do before you go home. A **discharge planner** will often coordinate this for you. This will be discussed on the next page.

(Please see **WHAT TO EXPECT** -daily hospital schedule later in booklet)

### **Physical Therapy**

The role of the physical therapist is very important to your recovery. The primary reasons for having your operation are to allow you to get around more easily and do the things you want and need to do without pain. Physical therapy will help you achieve these goals in a safe manner. It is critical that you do your best to cooperate with the therapist whose primary goal is to help you gain independence in your activities and to teach you how to move correctly.

While you are in the hospital, the therapist will emphasize movement with transfers in and out of bed, to a chair, and to the toilet. The therapist will also help you walk. It is important that you learn how to climb up and down stairs and curbs safely. Be sure to tell the therapist how many stairs there are in your home, or if you have any special concerns about movement due to the physical layout of your home.

During your hospital stay, the physical therapist may also go over our home exercise program with you. This program can be found at the end of this booklet. Revision surgeries require special considerations and may not include the same motions or strengthening exercises.

Number of stairs in home: \_\_\_\_\_

Other concerns:

## **Occupational Therapy**

Members of the occupational therapy department will also evaluate your particular problems and help you with some "grabbers" and other aids to assist you to take care of yourself when you go home (you should be familiar with these from our Pre-Op Class).

## **Hospital Discharge**

### **Going Home**

You will be discharged from the hospital once you have met the goals of physical therapy, your pain is well controlled, your incision is healing well, and you have no signs of phlebitis.

If you have someone at home to help you with meals and be with you for a couple of weeks, it is likely you will be discharged home.

### **TCU**

At times you may need additional therapy or it may be that there is no one to help you once you are discharged. You have the option of going to a Transitional Care Unit (TCU), which is located in a local rehab facility. The hospital will arrange for transport to the TCU upon discharge. The average TCU stay is 5 to 7 days, sometimes shorter, sometimes longer. During your stay you will work with physical and occupational therapists that will help you gain strength and stamina so that you can better care for yourself when you go home. Your medical care while at the TCU will be the responsibility of a rehabilitation physician or a primary care physician on staff at the facility. Dr. Carn will be responsible for your therapy and any **orthopedic** problems you may have.

### **Medications**

Generally, by the time you are discharged home, you have already started your usual medications again, with the possible exception of your arthritis medications. Dr. Carn will provide you with a prescription for pain medication. Be sure to drink lots of liquids to help prevent constipation, which might occur from taking pain meds and being less mobile than usual upon discharge and after the Coumadin has been stopped. Most patients will also be asked to take one **325 mg aspirin a day** (if not allergic) for three months to prevent blood clots. **Patients who take Coumadin on a regular basis should not take aspirin.**

Ask your primary doctor about any changes in medications you were taking prior to surgery. In the space below, write down the medications you will be taking after you go home.

Medications

Dosage

Times/Day

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### **Care of the Incision**

There are certain changes that take place in the skin about the incision, which are expected after a surgery. There will be increased warmth, a pinkish or slightly reddish color, and a firm or lumpy feeling. These are due to the body's response to healing and include increased circulation and scar formation. Often times there is associated bruising and discoloration.

There are also many layers of sutures, which hold the tissues together, and the skin is most often closed with a special suture just below the surface. For a few weeks your incision may feel lumpy and bumpy, but the suture will absorb in time. It is all right to shower starting about five days after surgery. Let the water run over the incision **-do not scrub it with soap**. Gently pat the area dry. Please do not remove the Steri Strips (tape over your incision). If they do not come off on their own, we will take them off at your 4-week follow up appointment.

As noted above, some swelling, warmth and redness are to be expected after knee surgery and may last many months. Ice packs can be applied to the knee to decrease pain and swelling, but be sure to place a towel or pad between the skin and ice pack. If you notice a marked increase in pain (not relieved by pain meds, ice and rest) or any sudden redness or drainage, please be sure to call the office so that we can make sure everything is healing normally. Please note that numbness around the incision is normal and is to be expected.

### **Compressive Hose**

It is still important to keep blood from pooling in your legs when you go home. Therefore, the compressive stockings should be left on for four weeks after surgery. Remember to keep them pulled up and wrinkle free. If they tend to bunch up at night, you can remove them before going to bed and only wear them during the day.

It is also necessary for you to spend **at least two hours each day** with your legs raised above the level of your heart. Spend one hour in the late morning and a second hour in the late afternoon with your legs elevated **above your heart**. Please note that a reclining chair is not enough elevation.

There is a tendency toward puffiness and swelling in the operated leg. The elevation and compressive hose should minimize this. If you have more pain and swelling than expected in your leg, please contact us **immediately** so that we can evaluate your progress.

### **Dental Procedures, Surgeries or Infections**

Our blood circulates throughout the entire body. This means that an infection in one part of the body has the potential to spread to other places by way of our blood stream. It is rare, but it has been known to occur, that an infection in one part of the body infects a joint replacement. It is therefore very important to help prevent such spread of infections.

For **routine dental procedures** (cleaning) we ask that you wait **3 months** after your surgery. You should take antibiotics prior to all dental work (including cleaning). This is a good means of preventing bacteria spreading from the mouth. Be sure to notify your dentist of your joint replacement before you have work done. Either they can give you a prescription, or you can call our office and we would be happy to prescribe your antibiotic as well. **Please take antibiotics before dental work indefinitely. It is a cheap way to help prevent infections.**

Some **surgeries** also have potential for bacteria entering the blood stream and may require antibiotics. Please consult the surgeon performing the procedure or call our office to be advised whether or not antibiotics are needed for a particular surgery.

Bladder, kidney or skin **infections** need to be treated appropriately. Viral infections, such as flu and colds, do not have the capability of infecting a joint replacement and therefore do not need antibiotics.

### **Weight Bearing:**

After your surgery you will be able to bear weight on your knee. If you have a primary knee replacement (1" time surgery) you will bear as much as you can tolerate. The physical therapist will know your limitations, if any, by the orders from Dr. Carn. You will most likely walk with crutches or a walker initially until your pain decreases and your strength increases. This will occur gradually.

As your pain diminishes, you may wish to progress to a cane. This progression will be based on how comfortable you may be in doing such (i.e., no pain when you walk or any unsteadiness). The progression to a cane varies for everyone. Do not be discouraged if you

three months following surgery in most cases; however, there may be exceptions. Some patients have arthritis in many joints or have unsuitable walking patterns. The walking aid may need to be used longer or to protect other joints other than the operated one.

Revision surgeries often have restrictions on how much weight you should place on your leg. This will be discussed with you while you are in the hospital.

To determine how much weight you are placing on the operated side, you can use a bathroom scale. For example, if you are instructed to bear a specific amount of pounds:

- Step up to your scale (using walker or crutches)
- Place your foot (operated side) on the scale
- Press down until the scale indicates the amount Dr. Carn wrote at discharge from the hospital. (Usually 50 pounds and sometimes less with certain revisions)

This is how it should feel when you touch the operated side to the floor when walking with your walker or crutches. Check this a number of times throughout the day to make sure you are touching down with the correct amount of weight.

4 Weeks after surgery you will be seen in the office and if all is well your weight bearing will be increased on the operated side. At that time you will probably be instructed to gradually switch to a cane. It is important that you **remember to use your cane** for the next month until you see Dr. Carn and x-rays are taken.

Usually not until 2 to 3 months after revision knee surgery is full weight bearing allowed without a walking aid (cane or crutch). If this is a subsequent (revision) knee surgery, weight bearing will be determined on an individual basis.

### **Physical Activity and Home Physical Therapy**

Your rehabilitation will continue at home, and should include a regular physical therapy program as well as increasing your activities toward your normal level.

**It is very important that you understand that YOU are the most important factor in getting the motion and strength in your new knee.** The physical therapist in the hospital and at the home directs and checks your progress. The majority (95%) of your progress is what you do when the therapist isn't there.

Please keep in mind the following level of importance in what activities you do to recover from your surgery.

## I -MOST IMPORTANT

### WALKING

It is crucial that you **WALK EVERY DAY** - among all activities and exercises, this is the **MOST IMPORTANT**. Many short walks throughout the day are best in the first few months. Get outside into the sunshine; it truly does contribute to bone healing and is a pleasant way to get your exercise. When you start your walking program, begin with a modest goal -perhaps to the house next to yours, and then return home. It is important that you do not go so far that you wear yourself out and have trouble getting home. As the days go on, increase the goal bit by bit and start to build endurance. Don't be discouraged if you tire easily as **it takes approximately three months for your endurance to return to the level it was before your operation**. Be patient, and remember it is O.K. to rest during the day when you first come home.

## II -VERY IMPORTANT

The chair exercises are to be done all the time. They are to direct the scar how to heal and allow good motion. The 10-10 exercise is to be done whenever you are sitting. The buttock slide chair exercise stretches the scar and is the best exercise to improve the motion in your knee.

## III -LESS IMPORTANT

All the other exercises are just not as important as the walking and chair exercises. If you are too sore, or too tired, then skip them for a day or two, and then start again. Make sure you walk and do the chair exercises every day.

We have included our home physical therapy and exercise program for first time surgeries at the end of this section. Revision surgeries often do not include strengthening exercises. The physical therapist in the hospital will go over this with you and make sure that you understand the exercises. On occasion, there are exercises that you should avoid, and Dr. Carn will discuss them with you before your discharge.

Sometimes a therapist will be assigned to help you in your home. It is **important that the therapists not change or add to our home physical therapy and exercise program** unless he or she has discussed the changes with us. If your therapist suggests exercises that are different than the ones in this booklet, please ask him or her to call us so that we can be certain we agree with the suggestions. On occasion, if Dr. Carn and the hospital physical therapist feel you are doing well with exercises on your own, there is no need to order home therapy. In this case, be sure to do your workbook exercises on a **regular basis**.

We do not believe in the "no pain, no gain" principle regarding rehabilitation after surgery. It is more important that you listen carefully to your body and use that knowledge to modify your activities. It is all right to work against your stiffness, but if it produces marked pain, then the activity should be changed or discontinued for a few days. As the wound heals and your muscle strength improves, try the exercises again. If you do too much, the scar and muscles will become sore and painful. If this happens, decrease your activities and exercises for a few days (**don't stop walking ...just walk less**), and then go back to the exercises, but at a less strenuous level, and build from there.

### **Sexual Activity**

Sexual activity can be resumed with the following precaution: Activities that cause pain should be avoided until there is no discomfort. It is important that infections anywhere in the body are avoided and treated promptly. Therefore, any bladder or other infections (which can occur with sexual activity) should be diagnosed and treated quickly.

### **Follow-up Appointments**

Your first follow appointment (for a 1" time knee replacement) will be approximately 4 weeks after surgery. At this appointment you will have new x- rays taken and Dr. Carn will examine your progress and answer any questions. If your Steri Strips have not already fallen off on their own, we will remove them in the office. **Please remember to wear loose fitting clothes so we can easily examine your knees.**

If doing as expected, your next appointments will be a 2 months, 4 months, and then as necessary or at your yearly anniversary.

**X-ray follow-up after a joint replacement is extremely important** to alleviate any potential problems that can occur with time. If your x-rays at one year look good, you will be contacted to repeat them every other year from that point, barring any problems. Each time you are x-rayed, a progress note will be sent to you from Dr. Carn. Remember, if you have any problems whatsoever please contact the office.

### **Questions and Special Instructions**

Please use the space below to write down any additional questions you may have and/or special instructions given to you by your doctors.

Thank you for taking the time to read this booklet and to fill out your medication lists for your doctors and hospital staff. We hope that with the information in this guide, and with all of your questions answered before surgery, you will feel more confident and assured. Be sure to ask any questions you have and to use this workbook as a resource during the months to come.

Sincerely,

Ronald M. Carn, M.D.

## **Rules To Live By**

**DO NOT** sit in low or soft chairs or sofas.

**DO NOT** sit on a low toilet seat (use elevated toilet seat).

**DO NOT** sit in a bathtub (shower or sponge bath instead) for at least three Months.

**DO NOT** crouch in a very tight position.

**DO NOT** use a stair-stepper or treadmill.

**DO NOT** sleep with a pillow under your knee.

\*\*\*\*\*

**DO** sleep with a pillow between your knees when on your side.

**DO** try to go outside at least once a day.

**DO** elevate your legs above your heart for one hour in the morning and one hour in the afternoon to prevent ankle swelling.

**DO** call our office if you have any questions or concerns.

## **Home Physical Therapy and Exercise Program**

**Purpose:** To increase your range of motion, strengthen your muscles and improve your endurance and allow you to resume an active life.

The physical therapist in the hospital will go over these exercises with you and answer your questions.

**Principles:** Use pain as your guide. It is all right to push an exercise with a feeling of stiffness or pressure, but if pain results, lessen your effort and decrease the amount of motion. If pain persists, avoid the exercise for one or two days, then resume.

Do the exercises as often as described in the following pages, but **don't overdo**, as this will make you too sore and interfere with your progress.

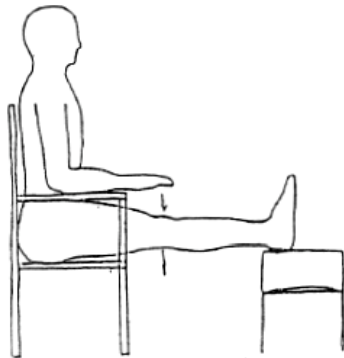
Dr. Carn may make changes in your program on occasion and a home physical therapist may be asked to see you. If the therapist suggests exercises other than those outlined here, **have the therapist call the office** and discuss them with Dr. Carn before they are undertaken.

**CHAIR EXERCISES**  
**(Very Important)**  
**10 – 10 EXERCISE**

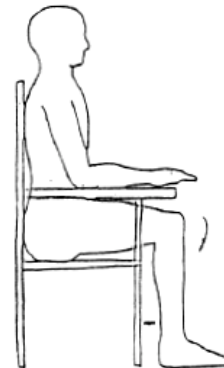
Purpose: For the first few months after knee replacement surgery, it is important to move your knee from one extreme (straight) to the other (fully bent). The following should be done **whenever you are sitting (all day long)**.

Position: Sitting in a chair, with arms and a firm seat, such as a captain's chair.

- Sequence:
1. Place your heel (or lower leg) on a stool or cross bar of your walker so that gravity straightens your knee.
  1. The back of your knee should be free so that it can straighten without resistance.
  2. Stay in this position ten (10) minutes and let gravity straighten your knee (figure 1).
  3. Place your foot on the floor, slide it toward the chair until it is bent as much as it will comfortably bend (figure 2).



**Figure 1**



**Figure 2**

## CHAIR EXERCISES (Very Important)

### BUTTOCK SLIDE EXERCISE

Purpose: The apprehension of bending your knee after surgery can be lessened by placing the foot on the ground where you know it won't slip or fall. The following is a bending exercise that uses a chair and your arms.

Position: Sitting in a chair, with arms and a firm seat, such as a captain's chair.

- Sequence:
1. Slide your buttock (bottom) to the back of the chair.
  2. Bend your knee as far as it comfortably bend (figure 1)
  3. Keep your foot on the floor and your leg relaxed.
  4. Using the chair arms, slowly slide your bottom forward, keeping your foot in the same place on the floor until you feel tightness and pulling in your knee. Work against tightness – **stop short of pain** – a little discomfort is O.K. (figure 2)
  5. Hold for five seconds.
  6. Slide your bottom to the back of the chair.
  7. Repeat 1-6, trying to improve the bending each time. (slide your foot closer to the chair to accomplish more knee bend)
  8. Repeat 10 times, three times a day. (Icing your knee after exercising will help with pain and/or swelling that may occur.)



Figure 1

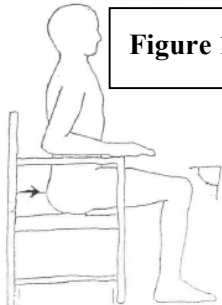


Figure 2

## STANDING EXERCISES

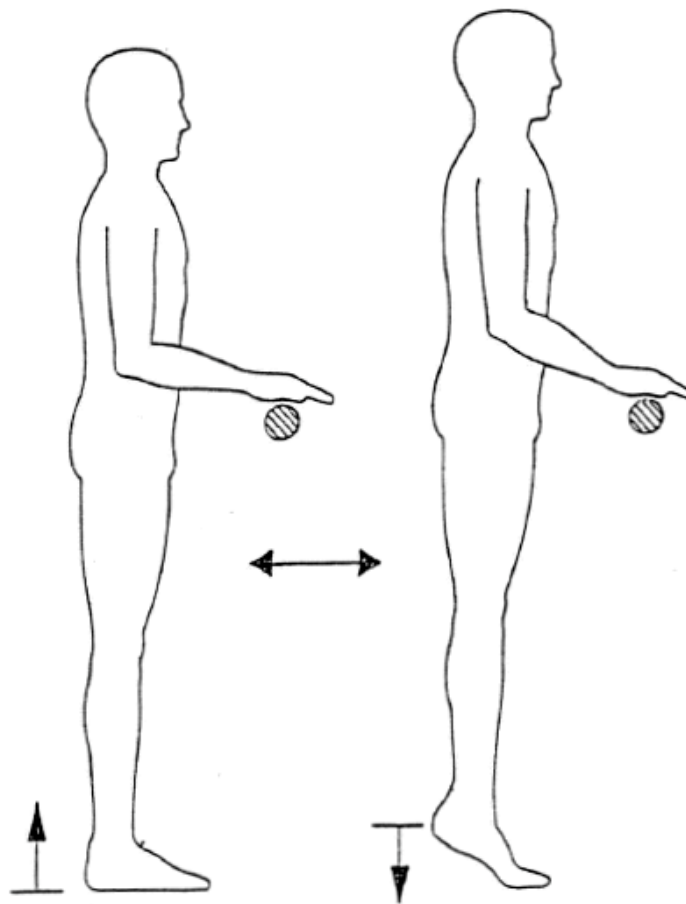
### **Exercise #1: Heel Raises**

Position: Standing using chair or walker for support

Principle: To build strength in the calf muscle

Sequence:

- From a flat foot position, raise up on your toes.
- Hold for five seconds.
- Lower heels to floor.
- Rest for five seconds.
- Repeat ten times, twice each day.



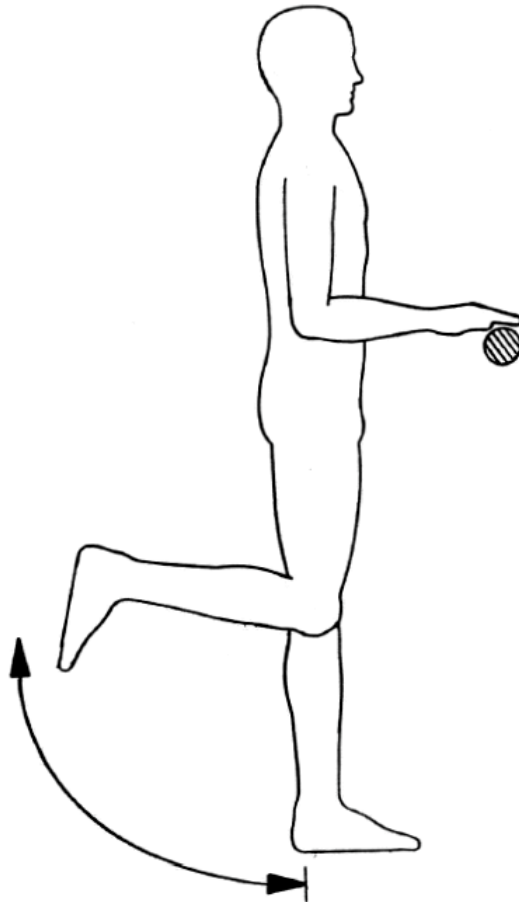
## **Exercise #2: Knee Bending**

Position: Standing using chair or walker for support

Principle: To bend knee, keeping thigh and hip in an unchanged position

Sequence:

- From a standing position and NOT moving hip and thigh, bend knee as much as able.
- Hold for 2-5 seconds.
- Relax, straighten knee.
- Repeat ten times, twice each day.



## LYING EXERCISES

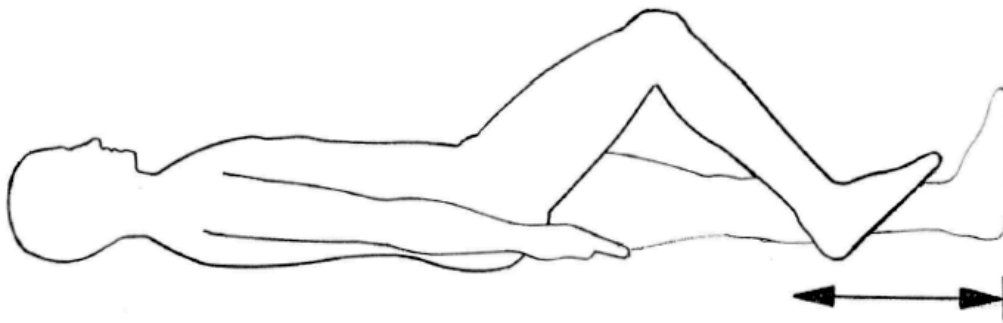
### **Exercise #1: Heel Slides**

Position: Lying on back

Principle: To slide heel along bed, bending hip and knee

Sequence:

- Slide heel along bed until heel is next to opposite knee.
- Slide heel back down until knee is straight.
- Do ten times, twice each day – BOTH LEGS



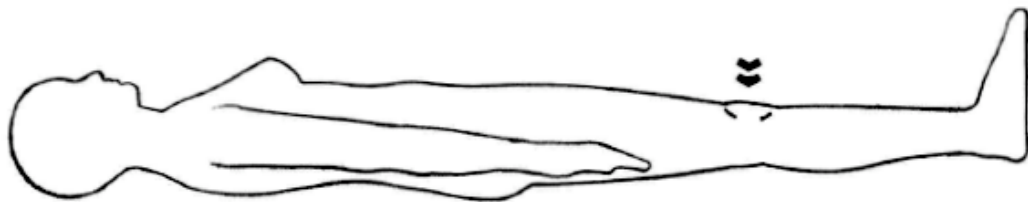
## Exercise #2: Isometric Quad Sets

Position: Lying on back

Principle: To push knee back against bed/floor while tightening the thigh muscle

Sequence:

- Push knee down.
- Hold for five seconds.
- Relax.
- Do ten times.
- Repeat with opposite leg.
- Do three sets, twice each day – BOTH LEGS.



### Exercise #3: Short Arc Quads

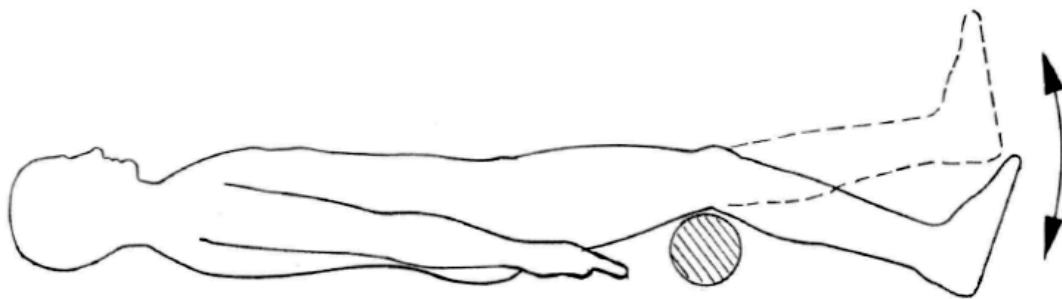
Position: Lying on back with towel rolled behind knee

Principle: To straighten the knee from slightly bent position

Sequence:

- Straighten knee fully using towel to support back of knee.
- Hold straight for five seconds.
- Relax.
- Do ten times.
- Repeat with opposite leg.
- Do three sets, twice each day – BOTH LEGS.

Advance repetitions as able, and when you are able to do 20, add ankle weights (**not to exceed 5#**) and decrease repetitions. When weights are added, do exercises twice each exercise day, but only three days a week.



## **Exercise #4: Isometric Straight Leg Raise**

Position: Lying on back, bending opposite knee

Principle: To lift heel 6" off the bed/floor

Sequences: **"I"s**

1. Lift leg (with knee straight).
2. Trace an "I" with toes.
3. Hold at top for five seconds.
4. Relax.
5. Repeat ten times.
6. Exercise opposite leg.

**"T"s**

1. Lift leg and trace a "T" with toes.
2. Relax.
3. Repeat ten times.
4. Exercise opposite leg.

**"O"s**

1. Lift leg and trace an "O" with toes.
2. Repeat ten times without putting leg down (draw 10 "o"s with toes)
3. Exercise opposite leg.

**Reverse "O"s**

5. Same as "O", only reverse direction

(DO ALL OF ABOVE TWICE DAILY)

**Advance repetitions as able, and when you can do 20, add ankle weights (not to exceed 5#) and decrease repetitions. When weights are added, exercise two times a day, three days a week.**

# **Glossary**

## **Acetabulum**

The socket portion of the hip. The acetabulum is contained within the lower portion of the pelvis.

## **Anesthetic**

A drug or medication which reduces sensation and pain.

## **Anticoagulant**

A drug used to thin blood.

## **Arthritis**

An inflammation of the joints.

## **Compressive hose**

Special stockings/hose, which help, prevent edema and phlebitis by keeping the blood from pooling in the legs.

## **Discharge planner**

A social worker that helps coordinate your transition from hospital to home or to another facility.

## **Edema**

Watery swelling area in the body.

## **Femur**

The thigh bone. The ball itself is called the "head of the femur" or simply the "head."

## **General anesthetic**

An anesthetic which results in total relief of pain

## **Incentive spirometry**

A machine that helps patients breathe deeply during its administration. Incentive spirometry is used to help decrease breathing problems.

## **Intravenous catheter**

A device which is placed in a vein to allow the administration of fluids such as medications, anesthesia, or nutritional substances.

## **Spinal anesthesia**

A type of anesthesia administered by placing an injection, which numbs a person from the waist down.