

## Out of Town Patient Information

Dr. Sanders and the Sanders Clinic staff assist patients from across the United States as well as Canada and Mexico with a variety of **Orthopedic** injuries and conditions, utilizing an aggressive and effective approach to recovery. Time-sensitive programs are tailored specifically to each patient in order to ensure the highest quality of medical and rehabilitative care, while also accommodating individual schedules.

Athletes are able to schedule a procedure between events with minimal downtime. Rehabilitation programs designed to transition athletes quickly back to their sport rapidly reduces recovery time.

The clinic is located in the heart of the Uptown/Galleria area in the renowned River Oaks Medical Tower. Accessible to the finest hotels and restaurants of all price categories, the Galleria area is also one of the most popular shopping spots - home to the distinguished Galleria Mall and many boutiques. And it is just minutes from the downtown business district, museums and theaters

## Arthritis of the Knee

Arthritis, which actually means joint inflammation, is a disease that indiscriminately affects nearly one in seven people in the United States. Arthritis represents more than 100 different diseases. It most often affects areas around the joints where bones meet - such as in the knee. The ends of the bones are protected by cartilage, which acts as a shock absorber and prevents bones from rubbing together. Enclosed in a capsule aided by the synovium, which secretes lubricant, the joint moves smoothly and without friction. Muscles and tendons also play a role in this fluid movement. When an injury or condition causes damage to the articular cartilage - further aggravated by unconditioned muscles and secondary deformities, arthritis is the inevitable outcome. The once fluid movement of the affected joint is replaced with friction.

It is a condition diagnosed in young and old, active and inactive - sometimes resultant from natural degeneration or in a young patient because of injury. The major problem is loss of the articular cartilage and the occurrence of secondary deformities caused by wearing down of the bones. In today's society, the prevalence of obesity has made it an epidemic.

Despite the many ways in which a patient can develop arthritis, it is simply the overriding condition once it develops - the cumulative result of earlier problems or lifetime of normal to excessive wear. By the time patients with earlier knee problems become elderly, there is only one common knee problem - **arthritis**.

Generally, arthritis of the knee affects either the lateral compartment (outside), medial compartment (inside), or the patellofemoral compartment. Occasionally a patient is affected in two or all three compartments.

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## Symptoms

When a patient has arthritis of the knee, it is apparent. The knee hurts when walking and may even ache at night preventing sleep. Popping and grinding may accompany it. In cases that are more serious, patients may develop a deformity - a knee that does not fully straighten, or a limb that becomes over time either at the knee, bow-legged (**Varus**) or knock-kneed (**Valgus**). These are the principal deformities that people face in serious arthritic cases.

An inspection of the knee will demonstrate that the leg does not fully straighten out, is bow-legged, or knock-kneed. The knee is swollen. There will be tenderness when the joint lines are palpated. An X-ray taken with the patient standing will reveal that the joint space is narrowing. Rather than the normal four millimeters of joint space, it shows significantly less. And in severe cases, it may show an absence of joint space resulting in "bone on bone."



## Treatment

While the articular surface changes of arthritis are not reversible, there are a number of things patients can do to improve joint function and reduce pain. It is always preferable to approach a condition non-surgically, by utilizing a specific nutrition and exercise program.

### Non-Surgical Treatments

Most arthritic conditions do not require surgery. Moreover, the first forms of treatment for arthritis of the knee most patients should consider are non-invasive conservative treatments, which prove highly effective for most patients. Dr. Sanders underscores the importance of weight loss, and exercise. These plans are among the most successful conservative treatments at the SandersClinic. Often times weight reduction alone can significantly improve the patient's condition. Dr. Sanders may also prescribe anti-inflammatory medication and nutritional supplements, rich in Glycosaminoglycans and Chondroitin Sulphate. This

combined with an individualized program of stretching exercises to improve flexion and especially extension of the knee, as well as strengthening exercises to build quadriceps muscles, yields tremendous results.

Patients hoping to avoid more invasive surgery may begin this reconditioning program that also incorporates, as necessary, a **Step Box** for performance of closed chain quadriceps exercises, and **Elite Seat**, to assist patients in reaching physiologic hyperextension, equal to the normal leg. The cold compression of a **Cryo/Cuff** is provided to reduce swelling and ease pain after the exercise program.

Nutritional supplements combined with mild pain relievers such as Advil or prescription drugs such as Celebrex also facilitate the reconditioning program, by addressing the challenges the body faces during the strengthening phase.

Occasionally injections are beneficial to arthritis patients, though the results are short-lived and not the preferred treatment. Dr. Sanders may use a Cortisone injection for an arthritic patient needing to attend a weekend event, though rarely on an on-going basis. And while such injection medications such as Synvisc helps decrease the friction in the bearing surfaces, it is expensive and only marginally more effective than Advil.

These are the principals of conservative treatment. The emphasis is to get down to an optimal body weight, exercise in an age appropriate fashion, and, most importantly, to get the knee to full symmetrical hyperextension equal to the non-affected knee. Patients with symmetrical hyperextension rarely need surgery. And the majority of Dr. Sanders' patients see improvement with these methods.

Dr. Sanders does not endorse the use of braces. They are likely to compress the venous system and restrict knee motion. He believes that the best brace is strong quadriceps. And the use of ace bandages are discouraged, as they are not found to be helpful and place the patient at risk of blood clots by restricting blood flow.

### **Conservative Surgery**

Though the conservative, non-surgical reconditioning treatment is effective for the majority of patients, some may require additional treatment. In these cases, there are several conservative surgeries available.

A **Tibial Osteotomy** is performed on those patients medially affected by Arthritis and suffering from an excessively bow-legged (varus) limb. **It is ideal for active patients with a physiological age of 60 or younger.** This procedure entails cutting the tibia, or leg bone, in order to shift the stress from the arthritis-affected medial compartment onto the stronger lateral compartment. The result is a more knock-knee (valgus) stance, as pressure is relieved from the medial compartment to the normal lateral compartment. The immediate postoperative treatment allows immediate motion of the knee, but requires two handed support usually for six weeks. Previously, we used either cadaver bone graft or bone graft from the hip. It has now been shown that these grafts are no longer necessary and we have abandoned them.

Less frequently, a **Femoral Osteotomy** is performed on those patients laterally affected by Arthritis and suffering from excessive knock-knee (valgus). **It is ideal for active patients with a physiological age of 60 or younger.** This procedure entails cutting the femur bone in order to shift the stress onto another compartment. The result is a more bow-legged (varus) stance as pressure is relieved from the lateral, arthritis-affected area to the stronger, normal medial compartment. The immediate postoperative treatment allows immediate motion of the knee, but requires two handed support usually for six weeks. Previously, we used either cadaver bone graft or bone graft from the hip. It has now been shown that these grafts are no longer necessary and we have abandoned them.

For arthritis of the patellofemoral joint not responsive to conservative measures, the entire lower limb must be studied clinically and with a CT scan to determine alignment in the frontal, side, and transverse plane. From the data obtained, a surgical plan that is customized for the individual patient can be determined. Surgical treatment in these cases involves correction of deformities that may be congenital or developmental in nature. Repair of these deformities will result in a much improved clinical state. In decades past, a "shotgun" approach to patellofemoral disease was taken in which many secondary deformities were created to compensate for primary deformities. This has been shown to lead to highly unsatisfactory results. Osteotomies of the femur, tibia, tibial tubercle, and reconstruction of damaged ligaments may be necessary. Our most important rule is to study the patient, and do what is anatomically correct, rather than follow a plan predetermined by medical history. More details about this procedure are present in **Patellofemoral Disorders**.

**Arthroscopic surgery for debridement of the arthritic knee has proven to provide minimal benefit, while subjecting patients to all the risks of surgery, and is not used by Dr. Sanders.**

When a patient suffers from severe arthritis in more than one compartment of the knee, a **Total Knee Replacement** is performed. **This procedure is ideal for those less active patients who have a physiological age of 60 or older.**

## **Postoperative Management after Total Knee Replacement**

As in most surgeries on the knee, the postoperative rehabilitation is of the utmost importance and Dr. Sanders starts the day of surgery. A patient will remain in the hospital for two to three days, immediately beginning an accelerated rehabilitation program.

### **Avoiding Blood Clots**

A risk of a blood clot traveling to the lung and causing death is present after total knee replacement. All patients undergoing major lower limb surgical procedures receive spinal anesthesia because it has been shown to diminish the incidence of blood clots after surgery. Dr. Sanders minimizes the use of a tourniquet on the limb for total knee replacement. This measure both decreases the incidence of blood clots and results in pain relief on the stand alone basis. Patients also receive mechanical measures to compress the veins of the opposite lower extremity while on the operating table. After surgery mechanical pumps are placed on both legs. Patients are expected to be out of bed walking with assistance the afternoon of their surgery. Based on a patient's presurgical medical condition blood thinning medications such as aspirin or Warfarin may be utilized. Aspirin is all that is necessary for patients who do not present a high risk.

### **Medication**

As the time the spinal anesthetic is given, a catheter is placed in the epidural space for administration of pain medicine. This stays in place for two days and allows considerable pain relief, and as such makes the rehabilitation much better tolerated. Most of our patients achieve full extension and greater than 100 degrees of flexion by the first post operative day. After the catheter is removed a 48 hours, patients are able to tolerate oral pain medications. Typically, they are discharged with a prescription for oral pain medicines on the third day after surgery.

After discharge, these should be used sparingly. These medicines frequently cause side effects such as nausea and/or constipation. Preemptive pain control drugs such as Tylenol and Tylenol PM prove to work just as well as the narcotics.

### **Preventing Infection**

Infection is a serious complication following Total Knee Replacement, so patients are given antibiotics by vein at the time of surgery - which reduces the risk to less than one percent. Furthermore Dr. Sanders mixes antibiotics in the bone cement and that has been shown not to weaken the cement, while further decreasing the infection rate of these procedures. Following this, no further antibiotics are necessary. Patients are responsible for the care of their wound and prevention of infection. Good personal hygiene and proper wound care are of utmost importance.

### **Wound Care**

Patients should expect some blood drainage through the dressing. This is normal and should not be a cause for alarm. We do not reinforce the dressings, as it inhibits knee motion.

The drains, which were placed into the wounds during surgery to control swelling and prevent stiffness, are removed the second day following surgery. Compressive stockings (TEDS) are placed on the legs and may be removed in order to shower the day after surgery. Following a shower, using a 50/50 mixture of Hibiclens® and water, the wound is covered with antibiotic ointment, and then a gauze dressing, and the compressive stockings are replaced. During the time that the staples are in place, showers are allowed, but tub baths are not permitted.

### **Preventing Swelling and Excessive Pain**

A **Cryo/Cuff® (cold therapy device)** is placed over the compressive stocking on the recovering limb the first day post surgery and remains for several weeks to further minimize the amount of swelling and pain.

Initially, the Cryo/Cuff® should be removed only when performing active knee flexion exercises. Otherwise, it should be maintained at all times. With less swelling and pain, motion is regained faster. The leg is then elevated eight inches above the heart with the knee absolutely straight, and nothing under the crease behind the knee.

The best way to keep pain and swelling manageable is almost complete bed rest and elevation of the recovering leg for the first week, and after release from the hospital. Patients should be up only for the purpose of constructive fully weight bearing exercises several times per day. They may most certainly leave the bed to use the washroom, and to take their meals at the table. Leaving the house is best avoided the first week.



## **Regaining Mobility and Strength**

### **Phase One**

The Recovering Knee, Day of Surgery through Postoperative Day 14

Movement is one of the most important elements in a rapid recovery and return to full mobility. A number of different devices and exercises are introduced to patients through an accelerated program in the advancement towards recovery.

Established in three phases, the first device used in this rapid recovery process is the Cryo/Cuff® which compresses the knee and keeps it cold. 55 minutes of the hour is spent with the limb elevated eight inches above the heart and fully straight.

Four ten of these 55 minutes, patients work on active quadriceps exercise. To complete this exercise, the foot rests on a pillow, with nothing under the back crease of the knee. Patients will attempt to push the back crease of the knee down towards the bed, move the toes upward towards the head and lift the leg ten inches straight up into the air. It is maintained there for a count of five. This exercise is repeated 10 to 25 times.

While the water is being changed in the cryocuff, patients do a "Cannonball" exercise as they grasp the back of both knees and bring them to the chest. The knees will bend on their own. During this time no energy much be expended. Patients are encouraged to concentrate on deep breathing and long exhales.

### **The second half of Phase One: Postoperative day 8 through 14**

On the eighth day following surgery, patients are generally able to resume regular sedentary activities and have a nearly normal gait often times without any assistive devices. The length of time that patients use a walker or crutches is dependant on the patient's age and general physical health. Patients should continue their active exercises four times per day. A follow-up appointment is made at this time.

### **Phase Two**

Postoperative Day 15 through 28

At two weeks, patients continue their exercise program by adding the Step Box. This simple device is used for the performance of closed chain knee extension exercises, beginning with four sets of 25 reps of two-inch excursions until fatigue each day, progressively increasing until 50 reps can be performed. The same routine is then continued with a four-inch excursion. After the same goal is reached, the excursion is increased to six, then eight inches. Patients must remember to do at least four sets per day. The patient may start to work the stationary bike and/or the Stairmaster in the routine, as well as continuing the Step Box at increasingly longer excursions through the end of the fourth week.

### **Phase Three**

Postoperative Day 29 until discharge from active treatment

Patients schedule another follow-up appointment with Dr. Sanders one month after surgery. Typically, skin staples are removed at that time. Certified trainers or Physical therapists work one-on-one with the patients to continue a **Reconditioning Program**. They establish an exercise routine that can be done both at home

independently, as well as at a gym or clinic under supervision. During months three and four, patients may begin returning to sports at a restricted level. And through the remaining year, patients are periodically evaluated with strength and measurement tests.

### **The long term**

The loosening and wear of the prosthesis has been a problem over the years. Many innovations in the design of the Total Knee Prosthesis have been introduced only to be withdrawn when they have shown to cause more problems than solutions. These have included bone ingrowth prostheses, which did not use cement, and metal backed tibial trays, and a asymmetric metal backed patella prosthesis. New designs for replacement of a single compartment are now on the market, but Dr. Sanders has not embraced them because of lack of a long enough record of good service.

Dr. Sanders uses a prosthesis system that has been shown the best long-term results and has been in service for 25 years or more. These designs may retain or sacrifice the posterior cruciate ligament, have a fully cemented metal femoral component. They have a fully cemented plastic patella component. The tibial component is also cemented, and may be either metal backed or fully plastic based on the patient's age and activity level. Dr. Sanders mixes antibiotics in the bone cement and that has been shown not to weaken the cement, while further decreasing the infection rate of these procedures.

**Patients undergoing joint replacement procedures should always inform physicians before future procedures are done such as dental procedures and colonoscopies. Antibiotics are required in advance in order to prevent the bacteria introduced into the bloodstream from infecting the prosthesis.**



## Rotator Cuff Tears



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The rotator cuff consists of four muscle-tendon units deep in the shoulder. They are the subscapularis, supraspinatus, infraspinatus and teres minor tendons. Injuries to the rotator cuff, occasionally known as the rotocuff, occur with repetitive overuse or trauma. The degenerative affect of aging is also a large factor.

The rotator cuff tendons and surrounding bursa become stressed causing tendonitis and bursitis, which is called impingement. A tear results when the already weakened tendons are further stressed by activity or impact, such as that which is experienced in the constant grinding of an "overhead sports athlete," or an individual involved in repetitive overhead activities. Damage to the Rotator Cuff usually results in chronic pain, weakness, shoulder tenderness, and sleeplessness from night pain.

Most rotator cuff injuries can be approached non-surgically. They may be treated with Tylenol and a course of [shoulder exercises with a Thera-Band®](#), which is a latex resistive exercise band designed to strengthen the shoulder by providing both positive and negative force on the muscles, as well as improve range of motion and cooperation of muscle groups. Thera-Band® exercises help strengthen the shoulder in Flexion, Abduction, Internal rotation and External rotation. They also help stretch the shoulder into internal rotation, as well as strengthen the **Scapula Rotators, namely the lower trapezius, rhomboids, and serratus anterior which are key muscles to help the scapula rotate out of the "Impingement" zone.** Three sets of 12 repetitions of each exercise are necessary each day.

Activity modifications are also necessary. Patients need to keep the arm out in front of them and keep the elbow beneath the shoulder level.

In some cases, pain persists and an injection of cortisone into the shoulder may be considered. Generally, this will yield good results without complications, but should not be regularly repeated as repetitive cortisone injections will weaken the tendon and cause it to rupture. If a good result is achieved, then the injection may be repeated in six months, if necessary.

For patients with history of severe trauma or profound weakness, these treatments will not be successful. In these patients, imaging studies such as MRI may be necessary. And consideration of [arthroscopic shoulder surgery](#) is given in patients who maintain an active lifestyle. Arthroscopic surgery is used to remove the bursa - section the coracoacromial ligament - and smooth the undersurface of the acromion, which may have developed a spur. [If tears of the rotator cuff tendons are present, they are repaired with suture anchors.](#) Arthritis of the acromioclavicular joint, and other shoulder pathology may be addressed at the same time.

[Out of town patients](#) should plan a two-day stay for this procedure

## Arthroscopic Shoulder Surgery

Arthroscopic shoulder surgery (also called microsurgery) is performed on the shoulder for a variety of reasons, among the most common is repair and/or decompression of the supraspinatus or rotator cuff (rotocuff) tendon of the shoulder. It is also used to remove an arthritic end of the collarbone, or repair a dislocating shoulder.

### Pre Surgery Preparation

A complete health assessment and patient profile is given to an anesthesiologist, who is a doctor of medicine experienced in matching the proper anesthetic and dosage to the patient.

Patients are encouraged to fill prescriptions for pain and other medications on or before the day of their surgery, as pain following arthroscopic surgery can be moderate. Pain medication is prescribed by **Dr. Sanders** and administered to the patient in the operating room.

### Medication

Medications that may be prescribed include a mild to moderate narcotic analgesic (Class 3 medication), and strong narcotic analgesics (Class 2 medication) that are generally not necessary for arthroscopic surgery of the shoulder but occasionally prescribed. Patients are urged to take the prescribed medications as directed, usually not more than one to two pills every three to four hours.

Most of the Class 3 medications are a combination of Hydrocodone (an effective pain relief medication and NOT a form of "Codeine") and Acetaminophen (the active ingredient in Tylenol). These medicines frequently cause side effects such as nausea and/or constipation. Phenergan is prescribed to help with nausea. Taking two Tylenol every four hours is a good alternative.

And Tylenol PM (a preparation that includes Benedryl) is encouraged over other medications late post surgery in the event of sleep disturbance, which is common after such procedures. Ambien, which is also prescribed, is a stronger sleep aid.



## Post Operative Care

### Rehydration

Too often patients come in for surgery, particularly out patient surgery, having had very little to drink and subsequently become dehydrated following the surgery. It is important that patients rehydrate following a surgical procedure – consuming sufficient quantities of water and a sports aid drink containing sugar and electrolytes. Proper hydration is key for the body, particularly one in recovery. We recommend that patients drink a sports drink for hydration until their urine is clear.

### Dressing

Since the wounds are not sutured to allow for any excess water used in the arthroscopy to drain, surgical dressing may appear bloody early post-surgery. This is not a cause for concern. The small amount of blood combined with the large amount of water used produces the red color of fresh blood - though it is not. Simply reinforce the dressing should it become saturated.

A **Cryo/Cuff®** is placed over the dressing, delivering cold therapy as well as compression. It should remain on the entirety of the first day, but may be replaced with a sling on subsequent days, utilizing it again after exercises and during painful periods.

### Avoiding Infection

During surgery, antibiotics are administered by vein to prevent the risk of infection. No other antibiotics are needed, but patients are encouraged to follow all instructions regarding the care of their wound and monitor it closely to further reduce the risk of infection.

The day after surgery the patient may remove the compression stocking and shower. The cuts should be washed with a 50/50 mixture of Hibiclens® (4% Chlorhexadine Gluconate) and water and used as soap.

Following the shower and whenever the dressing is changed, the incision should be dressed with antibiotic ointment and fresh gauze.

If a portion of the surgery was performed through an open incision, the wound may be closed with nylon sutures or staples. They should be left in for three weeks or until determined by Dr. Sanders. Occasionally, there is a small amount of drainage from the wound - a normal bodily response and NOT an infection.

### **Regaining Mobility**

Following shoulder surgery, postoperative stiffness is a serious - though entirely preventable - complication. Movement is key to avoiding this complication.

### **Subacromial decompression, and/or an excision of the distal clavicle**

For patients who have had a subacromial decompression, and/or an excision of the distal clavicle, the sling may be discarded upon arrival home or on the first postoperative day. He or she may start using the shoulder as if a simple sprain or strain. Patients then begin Codman exercises the first postoperative day. These are done by removing the arm from the sling and resting the elbow straight. The torso must be bent forward and nearly parallel to the floor (bending maximally at the hips and lumbar spine). When this is achieved, the arm hangs perpendicularly (at right angles) to the floor. The patient makes small then increasingly larger circles with their arms. This mobilizes the shoulder and prevents stiffness. In another exercise, a patient places a broomstick in their hands and use the opposite side to help raise the operated side such that your arm is over your head, like a child raising his hand in class. Then you should bring the arm down and then repeat 10 times. This should be done 6 times per day. After a few days, you should perform this exercise without the broomstick. Dr. Sanders or your **Trainer** will instruct you in the remainder of the exercises. The patient returns for their first postoperative visit one week following the procedure, where Dr. Sanders evaluates the progress and recommends a course of shoulder exercises with a **Thera-Band®** to strengthen shoulder flexors, abductors, external rotators, and internal rotators. The use of the Theraband is also emphasized in order stretch into internal rotation. Other exercises with hand weights help strengthen the scapula rotators. Three sets of 12 repetitions of each exercise are necessary each day. These exercises should be done regularly for at least one year.

### **Surgery for Shoulder Instability or SLAP lesion**

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During a healing period of six weeks, patients undergoing procedures for **shoulder instability** should generally keep the arm at the side in a sling. The sling should be worn at all times except for showering during which time the arm can be moved away from the body just enough to wash the arm pit. Over the past few years we have learned, that unlike the knee, the ligamentous structures of the shoulder heal best with six weeks of immobilization. After that time motion is begun, first passively and then actively. Strengthening is begun at three months, and return to sports can occur as early as four months.

### **Rotator Cuff and or Biceps Tenodesis**

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Similar to issues of shoulder instability, the most up to date research indicates that, because of the special nature of the **rotator cuff tendons'** insertion to the humerus, immobilization of the shoulder in a sling is the best way to deal with the repaired rotator cuff. After six weeks, passive exercises leading to active ones are started. Return to sports is reasonable at four months, but specific exercises must continue. Improvements in strength and range of motion will continue during the entire first year.

## Arthroscopy / Arthroscopic Surgery

An innovator in the field of Arthroscopic Surgery, Dr. Sanders offers the most advanced Arthroscopic procedures for patients who are non responsive to conservative treatment. His years of experience and work in accelerated rehabilitation protocol have contributed to one of the lowest rates in complications - and among one of the highest in success.

Following anesthesia, a tiny incision is made in the skin near the injury and an instrument approximately the size of a straw in diameter is inserted. This instrument has a small lens and fiber optic lighting system that enlarges and illuminates the area inside the joint. The images are transmitted onto a television screen, allowing Dr. Sanders to see the full extent of the injury with minimal disturbance to the surrounding external and internal tissue.

Though arthroscopy was initially used as a diagnostic tool for planning open surgery, advancements in the technique and instrumentation allow it to now treat many injuries and conditions in lieu of open surgery. In most cases of joint injury, arthroscopy can eliminate the need for a large incision.

### Arthroscopic Surgery



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Arthroscopic surgery is performed in an environment in which the joint is inflated with pressurized water. Following the surgery, the point of entry is not sutured in order to allow for egress (drainage) of this fluid - minimizing swelling and bruising.

The procedure is usually done as an outpatient procedure and when combined with the reconditioning program at the Sanders Clinic allows patients to enjoy immediate movement and restoration of function of the injured area.

The Sanders Clinic reconditioning program, designed for both surgical and non-surgical patients alike, prepares patients requiring surgery for the best post-operative results by strengthening the injured area as well as the overall condition of the body. The risks of anesthesia and surgical complications are further reduced through a carefully developed plan beginning with nutritional supplements, perioperative antibiotics, effective non narcotic pain management, and the Cryocuff for control of swelling. Thromboembolic events are prophylaxed against by programs consisting of mechanical compression of the limb, early weight bearing, range of motion exercises, and occasionally anticoagulants in higher risk patients.