A Patient's Guide to

Arthroscopy of the Ankle

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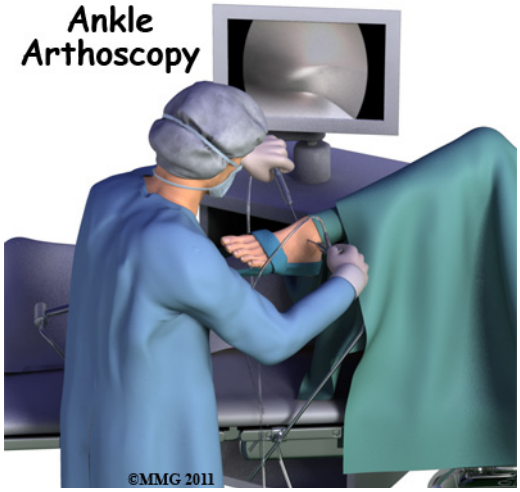


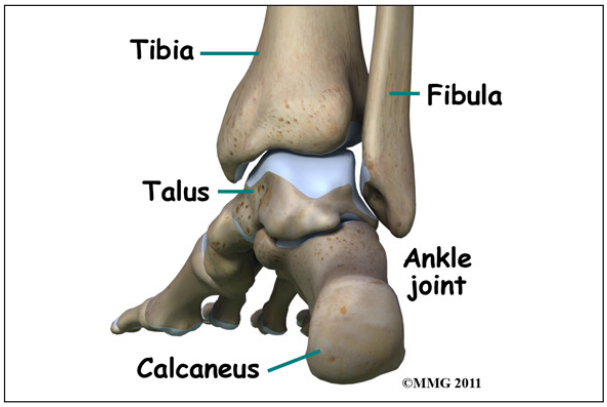
Introduction

Arthroscopy is a procedure where a small video camera attached to a fiberoptic lens is inserted into the body to allow a physician or surgeon to see without making a large incision. Arthroscopy is now used to evaluate and treat orthopedic problems in many different joints of the body. The ankle joint is one of the common joints that arthroscopy is used to evaluate and treat problems with this minimally invasive technique.

This guide will help you understand

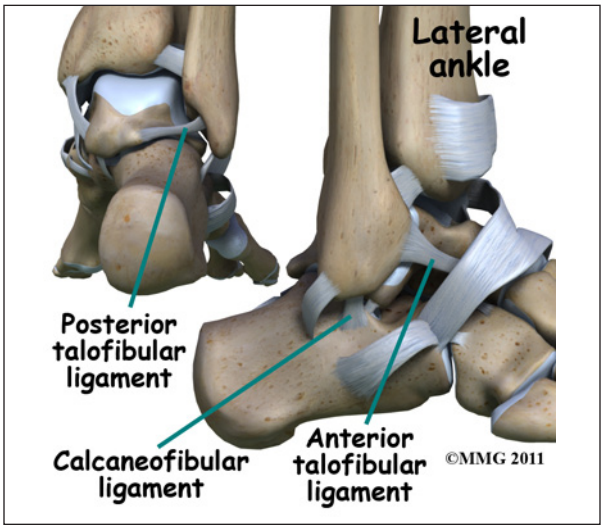
- **what parts of the ankle are ivolved**
- **what types of conditions are treated with ankle arthroscopy**
- **what to expect before and after ankle arthroscopy**

Anatomy



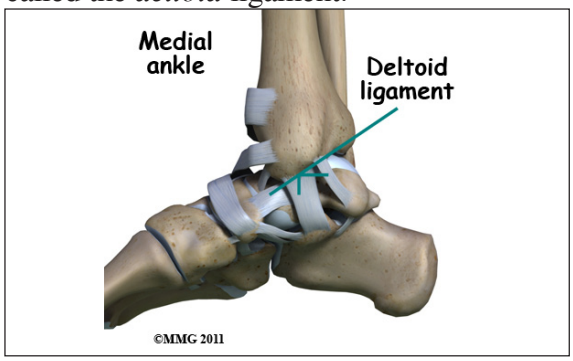
How does the ankle joint work?

The ankle joint is formed by the connection of three bones. The top of the *talus* fits inside a socket that is formed by the lower end of the *tibia* (shinbone) and the *fibula* (the small bone of the lower leg). The bottom of the talus sits on the heel bone, called the *calcaneus*.

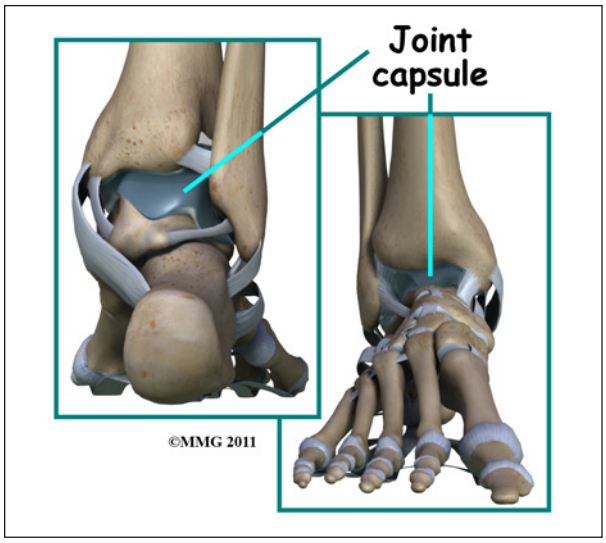


Ligaments are tough bands of tissue that connect bones together. Three ligaments make up the *lateral ligament complex* on the side of the ankle farthest from the other ankle. They are the *anterior talofibular ligament (ATFL),* the *calcaneofibular ligament (CFL)*, and the *posterior talofibular ligament (PTFL).*

The common ankle sprain, or inversion injury to the ankle, usually involves two ligaments, the *ATFL* and *CFL.* Normally, the ATFL keeps the ankle from sliding forward, and the CFL keeps the ankle from rolling inward on its side. On the side of the ankle joint closest to the other foot (the *medial* side) is another ligament called the *deltoid* ligament.



The deltoid ligament can be torn, but it is usually torn in a combination of injuries when the ankle is broken; it is uncommon to injure the deltoid ligament alone.



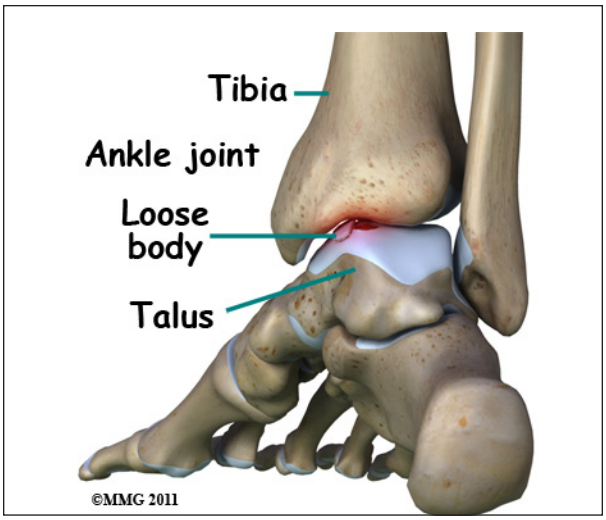
The ankle joint is surrounded by a water tight pocket called the *joint capsule*. This capsule is formed by ligaments, connective tissue and synovial tissue. When the joint capsule is filled with sterile saline and is distended, the surgeon can insert the arthroscope into the pocket that is formed, turn on the lights and the camera and see inside the ankle joint as if looking into an aquarium. The surgeon can see the structures that are inside the ankle joint including the joint surfaces of the distal tibia, fibula and talus and the synovial lining of the joint.

Rationale

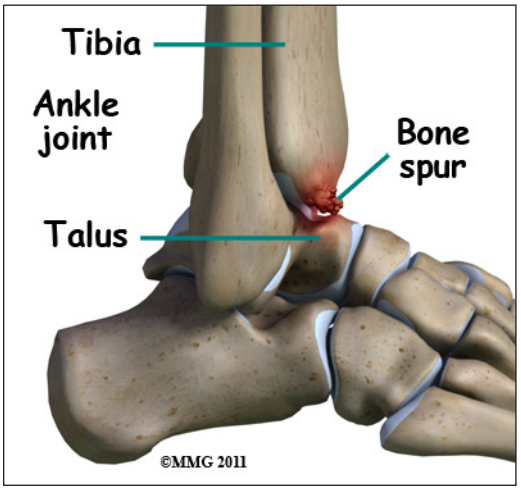
What does my surgeon hope to accomplish?

When ankle arthroscopy first became available it was used primarily to look inside the ankle joint and make a diagnosis. Today, ankle arthroscopy is used to perform a wide range of surgical procedures including confirming a diagnosis, removing loose bodies, removing bone spurs, debriding excess inflamed synovial tissue, and fixing fractures of the joint surface.

Your surgeon's goal is to fix or improve your problem by performing a suitable surgical procedure; the arthroscope is a tool that



improves the surgeon's ability to perform that procedure. The arthroscope image is magnified and allows the surgeon to see better and clearer. The arthroscope allows the surgeon to see and perform surgery using much smaller incisions. This results in less tissue damage to normal tissue and can shorten the healing process. But remember, the arthroscope is only a tool. The results that you can expect from a ankle arthroscopy depend on what is wrong with your ankle, what can be done inside your ankle to improve the problem and your effort at rehabilitation after the surgery.



Preparation

What do I need to know before surgery?

You and your surgeon should make the decision to proceed with surgery together.

You need to understand as much about the procedure as possible. If you have concerns or questions, be sure and talk to your surgeon.

Once you decide on surgery, you need to take several steps. Your surgeon may suggest a complete physical examination by your regular doctor. This exam helps ensure that you are in the best possible condition to undergo the operation.

You may also need to spend time with the physical therapist who will be managing your rehabilitation after surgery. This allows you to get a head start on your recovery. One purpose of this preoperative visit is to record a baseline of information. The therapist will check your current pain levels, ability to do your activities and the movement and strength of each ankle.

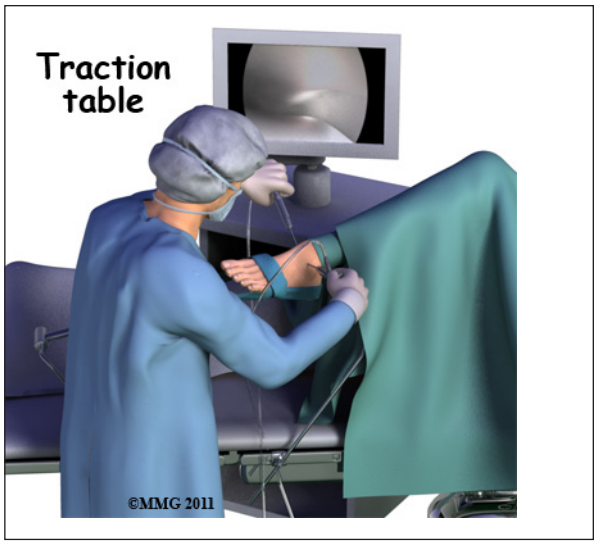
A second purpose of the preoperative visit is to prepare you for surgery. The therapist will teach you how to walk safely using crutches or a walker. And you'll begin learning some of the exercises you'll use during your recovery.

On the day of your surgery, you will probably be admitted for surgery early in the morning. You shouldn't eat or drink anything after midnight the night before.

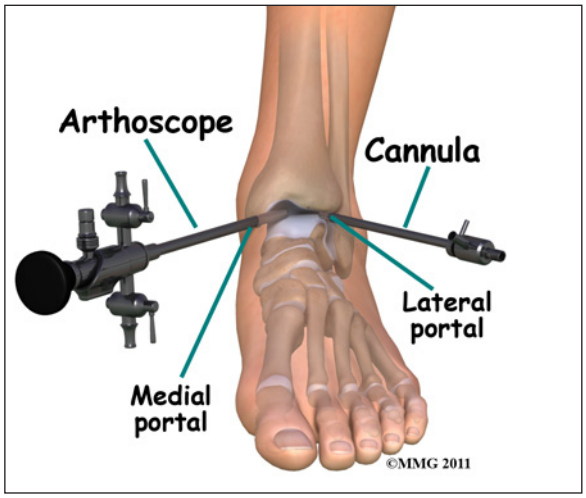
Surgical Procedure

What happens during ankle arthroscopy? happens during the operation?

Before surgery you will be placed under either general anesthesia or a type of spinal anesthesia. The ankle joint is very tight with little space between the tibia and the talus. By applying traction, the surgeon is able to increase this space and allow the arthroscope to be inserted into that space. The end of the arthroscope will be moved about in this space to look throughout the joint. Finally, sterile drapes are placed to create a sterile environment for the surgeon to work. There is a great deal of equipment that surrounds the operating table including the TV screens, cameras, light sources and surgical instruments.



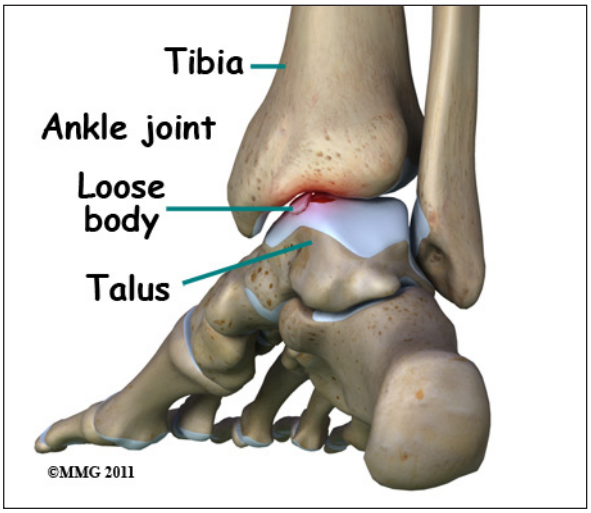
The surgeon begins the operation by making two or three small openings into the ankle, called *portals*. These portals are where the arthroscope and surgical instruments are placed inside the ankle. Care is taken to protect the nearby nerves and blood vessels. A small metal or plastic tube (or *cannula*) will be placed through one of the portals to inflate the ankle with sterile saline.



The arthroscope is a small fiber-optic tube that is used to see and operate inside the joint. The arthroscope is a small metal tube about 1/4 inch in diameter (slightly smaller than a pencil) and about 7 inches in length. The fiberoptics inside the metal tube of the arthroscope allows a bright light and TV camera to be connected to the outer end of the arthroscope. The light shines through the fiberoptic tube and into the

ankle joint. A TV camera is attached to the lens on the outer end of the arthroscope. The TV camera projects the image from inside the ankle joint on a TV screen next to the surgeon. The surgeon actually watches the TV screen (not the ankle) while moving the arthroscope to different places inside the ankle joint.

Over the years since the invention of the arthroscope, many very specialized instruments have been developed to perform different types of surgery using the arthroscope to see what is going on while the instruments are being used. Today, many surgical procedures that once required large incisions for the surgeon to see and fix the problem can be done with much smaller incisions. For example, simple removal of a loose body in the ankle can be done using two or three small 1/4 inch incisions.



More extensive surgical procedures may require larger incisions. Your surgeon may decide during the procedure that the problem requires a more traditional open type operation. If this has been discussed before the operation the surgery may be performed immediately; if not, the arthroscopic procedure will be concluded and a later operation planned. Your surgeon will discuss the details of what was found at the time of the arthroscopy and what more needs to be done in the later operation.

Once the surgical procedure is complete, the arthroscopic portals and surgical incisions will be closed with sutures or surgical staples. You may be placed in a large compressive bandage and splint that will be applied from the knee to the toes. The splint and bandage is used to immobilize and protect the ankle. If your surgeon feels that you do not need a bulky bandage and splint, you may be placed in compression stockings. A compressive bandage (or stockings) reduce swelling and help prevent blood clots in the leg. Once the bandage has been placed, you will be taken to the recovery room.

Complications

What might go wrong?

As with all major surgical procedures, complications can occur during ankle arthroscopy. This document doesn't provide a complete list of the possible complications, but it does highlight some of the most common problems. Some of the most common complications following ankle arthroscopy are

- anesthesia complications
- thrombophlebitis
- infection
- equipment failure
- slow recovery

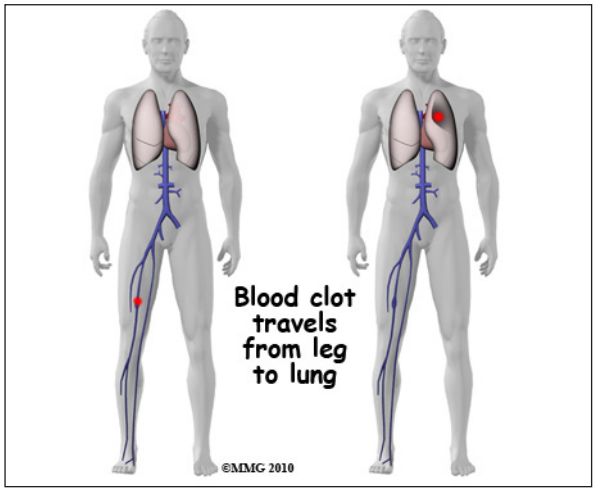
Anesthesia Complications

Most surgical procedures require that some type of anesthesia be done before surgery. A very small number of patients have problems with anesthesia. These problems can be reactions to the drugs used, problems related to other medical complications, and problems due to the anesthesia. Be sure to discuss the risks and your concerns with your anesthesiologist.

Thrombophlebitis (Blood Clots)

Thrombophlebitis, sometimes called deep venous thrombosis (DVT), can occur after

any operation, but is more likely to occur following surgery on the hip, pelvis, or knee.



DVT occurs when blood clots form in the large veins of the leg. This may cause the leg to swell and become warm to the touch and painful. If the blood clots in the veins break apart, they can travel to the lung, where they lodge in the capillaries and cut off the blood supply to a portion of the lung. This is called a *pulmonary embolism*. (Pulmonary means lung, and embolism refers to a fragment of something traveling through the vascular system.) Most surgeons take preventing DVT very seriously. There are many ways to reduce the risk of DVT, but probably the most effective is getting you moving as soon as possible after surgery. Two other commonly used preventative measures include

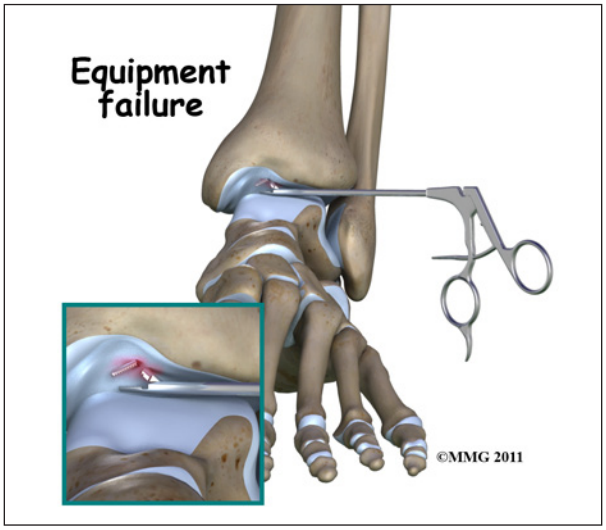
- pressure stockings to keep the blood in the legs moving
- medications that thin the blood and prevent blood clots from forming

Infection

Following ankle arthroscopy, it is possible that a postoperative infection may occur. This is very uncommon and happens in less than 1% of cases. You may experience increased pain, swelling, fever and redness or drainage from the incisions. You should alert your surgeon if you think you are developing an infection.

Infections are of two types: superficial or deep. A superficial infection may occur in the skin around the incisions or portals. A superficial infection does not extend into the joint and can usually be treated with antibiotics alone. If the ankle joint itself becomes infected, this is a serious complication and will require antibiotics and possibly another surgical procedure to drain the infection.

Equipment Failure



Many of the instruments used by the surgeon to perform ankle arthroscopy are small and fragile. These instruments can be broken resulting in a piece of the instrument floating inside of the joint. The broken piece is usually easily located and removed, but this may cause the operation to last longer than planned. There is usually no damage to the joint due to the breakage.

Different types of surgical devices (screws, pins and suture anchors) are used to hold tissue in place during and after arthroscopy. These devices can cause problems. If one breaks, the free-floating piece may hurt other parts inside the joint, particularly the articular cartilage. The end of the tissue anchor may poke too far through tissue and the point may rub and irritate nearby tissues. A second surgery may be needed to remove the device or fix problems with these devices.

Slow Recovery

Not everyone gets quickly back to routine activities after ankle arthroscopy. Because the arthroscope allows surgeons to use smaller incisions than in the past, many patients mistakenly believe that *less surgery was necessary*. This is not always true. The arthroscope allows surgeons to do a great deal of reconstructive surgery *inside* the ankle joint without making large incisions. How fast you recover from ankle arthroscopy depends on what type of surgery was done *inside* your ankle. Simple problems that require simple procedures using the arthroscope generally get better faster.

Patients with extensive damage to the articular cartilage in the ankle joint tend to require more complex and extensive surgical procedures. These more extensive reconstructions take longer to heal and have a slower recovery. You should discuss this with your surgeon and make sure that you have realistic expectations of what to expect following arthroscopic ankle surgery.

After Surgery

What happens after ankle arthroscopy?

Ankle arthroscopy is usually done on an outpatient basis meaning that patients go home the same day as the surgery. More complex reconstructions that require larger incisions and surgery that alters bone may require a short stay in the hospital to control pain more aggressively and monitor the situation carefully. You may also begin physical therapy while in the hospital.

The portals are covered with surgical strips, the larger incisions may have been repaired with either surgical staples or sutures. Crutches are commonly used after ankle arthroscopy. They may only be needed for one to two days after a simple procedures.

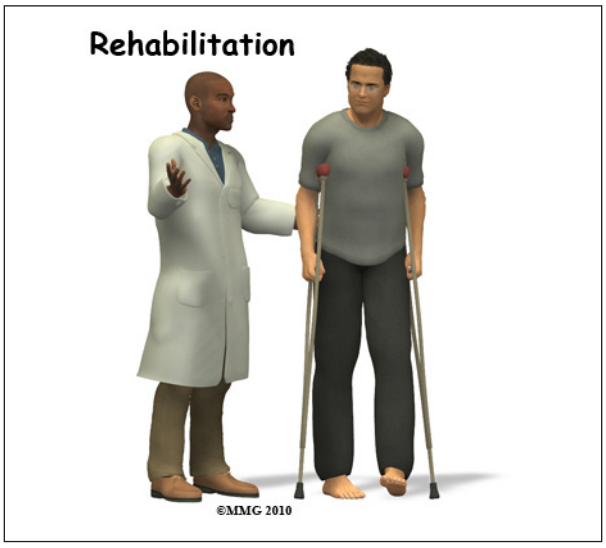
Follow your surgeon's instructions about how much weight to place on your foot while standing or walking. Avoid doing too much, too quickly. You may be instructed to use a cold pack on the ankle and to keep your leg elevated and supported.

Rehabilitation

What will my recovery be like?

Your rehabilitation will depend on the type of surgery required. You may not need formal physical therapy after simple procedures such as a simple debridement. Some patients may simply do exercises as part of a home program after some simple instructions.

Many surgeons have patients take part in formal physical therapy after any type of ankle arthroscopy procedure. Generally speaking, the more complex the surgery the more involved and prolonged your rehabilitation program will be. The first few physical therapy treatments are designed to help control the pain and swelling from the surgery. Physical therapists will also work with patients to make sure they are putting only a safe amount of weight on the affected leg.



Today, the arthroscope is used to perform quite complicated major reconstructive surgery using very small incisions. Remember, just because you have small incisions on the outside, there may be a great deal of healing tissue on the inside of the ankle joint. If you have had major reconstructive surgery, you should expect full

recovery to take several months. The physical therapist's goal is to help you keep your pain under control and improve the range of motion and strength of your ankle. When you are well under way, regular visits to your therapist's office will end. The therapist will continue to be a resource, but you will be in charge of doing your exercises as part of an ongoing home program.

Notes