What is Knee Arthroscopy?

If a person is suffering from a continuous pain or swelling in his knee, a procedure known as ARTHROSCOPY may help relieve these problems.

Arthroscopy allows an orthopedic surgeon to diagnose and treat knee disorders by providing a clear view of the inside of the knee by doing small incisions, using a pencil-sized instrument called an arthroscope. The scope allows the transmission of the image of the knee through a small camera to a television monitor. The clear and precise image allows the surgeon to thoroughly examine the interior of the knee and determine the exact source of the problem. During the procedure, the surgeon is capable of inserting surgical instruments through other small incisions in the knee in order to remove or repair damaged tissues.

With improvements and the development of the arthroscope procedure and other higher resolution cameras, this method is now highly effective for an accurate diagnosis and proper treatment of knee problems.

Want to learn more about the anatomy of the knee?

The knee is the largest joint in the body, and one of the most easily injured. It is made up of the lower end of the thigh bone (femur), the upper end of the shin bone (tibia), and the knee cap (patella), which slides in harmony on the end of the femur. Four layers of tissue (the anterior and posterior cruciate ligaments, the medial and lateral collateral ligaments) connect the femur and the tibia together and provide joint stability. Strong thigh muscles results in strong knees with a proper level of mobility.

The articular cartilage is the area that covers the surface where the femur, tibia, and patella. This cartilage is a smooth substance that cushions the bones and enables them to glide freely and easily. Semicircular rings of tough fibrous cartilage tissue, called the lateral and medial menisci, act as shock absorbers and stabilizers. The bones of the knee are surrounded by a thin, smooth tissue capsule lined by a thin synovial membrane. The synovium releases a special fluid that lubricates the knee thus reducing friction to minimum in a healthy knee.
Is Arthroscopy for You?

The family physician refers a patient to an orthopedic surgeon for an evaluation to determine whether he could benefit from arthroscopy.

Signs that are considered for a potential appropriate candidate for this procedure include swelling, persistent pain, catching, giving way, and loss of confidence and strength in the knee.

When other treatments, such as the regular use of medications, knee supports, and physical therapy, have provided minimal or no improvement, arthroscopy is recommended as the most beneficial method.

Most arthroscopies are performed on mainly on patients between 20 and 60 years of age.

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**Knee Problems**

Usually, all the parts of the knee work together in harmony. Excessive and rough exercising, work injuries, arthritis, or weakening of the tissues with age can cause wear and inflammation, resulting in pain and diminished knee function.

Arthroscopy can be used to clearly diagnose and help in deciding on the appropriate treatment of many problems such as:

- Torn meniscal cartilage
- Loose fragments of bone or cartilage
- Damaged joint surfaces or chondromalacia (softening of the articular cartilage)
- Inflammation of the synovial membrane, such as rheumatoid or gouty (crystalline arthropathy) arthritis.
- Abnormal alignment or instability of the kneecap
- Torn ligaments, including the anterior and posterior cruciate ligaments.
How is the Orthopedic Knee Evaluated?

The orthopedic knee evaluation usually consists of a medical history, a physical examination, and X-rays.

During the medical history, the orthopedic surgeon will gather information about health in general as well as any medical symptoms.

A physical examination is conducted to assess the motion, stability and muscle strength of the knee as well as the overall alignment of the leg.

X-rays is performed to evaluate the bones of the knee.
Additional information can be gathered following magnetic resonance imaging (MRI).
Blood tests results may be used to determine the presence of arthritis.

The surgeon will review the results of the evaluation and discuss the best methods to further diagnose any potential knee problems.

Treatment options include medications or surgical procedures, such as arthroscopy.
The orthopedic surgeon will explain the potential risks and complications of knee arthroscopy surgery as well as any postoperative complications.

How to prepare for Surgery

If the patient decides to undergo arthroscopy, a complete physical examination with the family physician is mandatory before surgery. This will assess the health and determine any conditions that could interfere with the surgery.

Before surgery, all medications or supplements must be declared to avoid any side effects.
Additional tests, such as blood samples or a cardiogram are necessary to gather all the information needed.

What is Arthroscopic Surgery performed?

Almost all arthroscopic knee surgery is performed on an outpatient basis for healthy patients. Depending on each hospital, specific and detailed instructions are given to the patient about pre-operative behavior on the day of surgery, for example patients are asked not to eat late night before the day of surgery.

Upon arrival, specific anesthesia method is determined depending on each case (local or general anesthesia).
The orthopedic surgeon will make a few small incisions in the knee. A sterile solution is used to fill the knee joint and rinse away any cloudy fluid, providing a clear view of the knee. The surgeon will then insert the arthroscope to properly diagnose the problem, by looking at the image projected on a monitor to guide the arthroscope. If surgical treatment is needed, the surgeon can use a variety of small surgical instruments (e.g., scissors, clamps, motorized shavers, or lasers) through another small incision.

This part of the procedure usually lasts 45 minutes to 1 1/2 hours.

Knee arthroscopy is commonly used in the following cases:

- Removal or repair of torn meniscal cartilage
- Reconstruction of a torn cruciate ligament
- Trimming of torn pieces of articular cartilage
- Removal of loose fragments of bone or cartilage
- Removal of inflamed synovial tissue

At the end of the surgery, the surgeon may close the incisions with a suture or paper tape and cover them with a bandage.

The patient is transferred to the recovery room for a couple of hours. If no complication appears, the patient can go home.

**What should be done following arthroscopy?**

**Recovery at Home**

Recovery from knee arthroscopy is much faster than recovery from traditional open knee surgery. To avoid any problems, it is better to follow the following medical instructions.

- **Swelling**: Avoid swelling by keeping your leg elevated as much as possible for the first few days after surgery. Apply ice to relieve swelling and pain.
- **Dressing care**: A dressing cover is placed around the knee. Avoid direct water. Incision must be kept dry and clean.
- **Bearing Weight**: After most arthroscopic surgeries, the patient can walk unassisted. A cane, walker can be used for a while. As the knee regains strength, more weight can be placed on the leg. Driving can be permitted after a week.
- **Exercises to Strengthen Your Knee**: Regular and continuous exercise is necessary for several weeks after surgery to strengthen the muscles of the leg and knee. Physical therapist assistance and follow up might be recommended in certain cases.
- **Medications**: Antibiotics are prescribed to prevent infections. Pain medications are used to relieve discomfort.
• **Complications:** Potential postoperative problems with knee arthroscopy include infection, blood clots, and an accumulation of blood in the knee. These occur infrequently and are minor and treatable.

### Warning Signs

The following signs require immediate follow up with the orthopedic surgeon:

- Fever
- Chills
- Persistent warmth or redness around the knee
- Persistent or increased pain
- Significant swelling in the knee
- Increasing pain in the calf muscle

### What should you expect after Arthroscopic Surgery?

*Although arthroscopy is used to treat many problems, it is associated with limitations in some activities even after recovery.*

The result and success of the surgery varies depending on the degree of the injury and damage of the knee.

An intercollegiate or professional athlete often sustains the same injury as a weekend recreational athlete, but the potential for recovery may be improved by the over-development of knee muscles.

Physical exercise and rehabilitation play an important role in the final outcome. A strict physical therapy program can improve the results.

A return to intense physical activity should only be done under the direction of a surgeon.

It is reasonable to expect that by six to eight weeks the patient should be able to engage in most of his former physical activities as long as they do not involve significant weight bearing impact.

Twisting maneuvers may have to be avoided for a longer time.

If the job involves heavy work, such as a construction laborer, the healing process is longer.