



# Orthopaedic surgery



## THE KNEE JOINT

The frequency and severity of injuries to the knee joint have increased considerably over the last years. Statistically the main causes are sports injuries. Quite often these injuries are followed by post traumatic degenerative disorders. However, degenerative changes which lead to osteoarthritis of the knee joint can also develop spontaneously and are frequent. While in the past extensive open surgery was necessary, today minimal-invasive surgical techniques are the treatment of choice. These invasive operations are very well tolerated and are giving much better results.

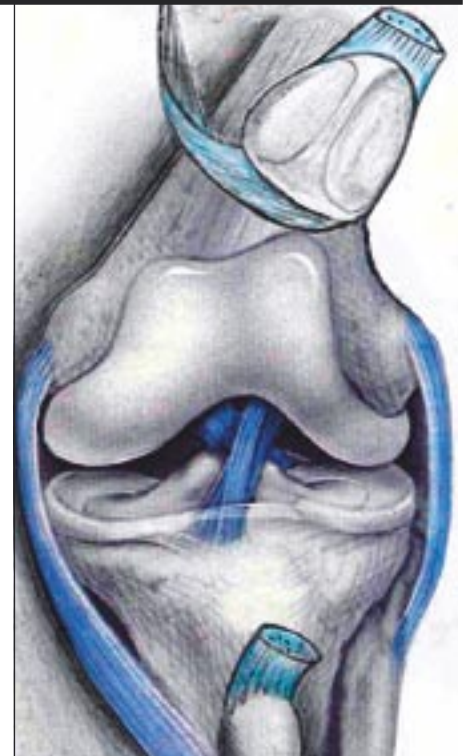
### Anatomy

The knee joint is mainly built up by the biggest bones of the body. A third small bone – the patella – is another bony component and last but not least the head of the fibula is another bony anchor for some very important ligamentous structures. Since there is no bony congruence between these components a lot of other structures, such as ligaments, cartilage menisci and synovium are needed to facilitate perfect joint function. In addition to these passive structures muscles are needed as active elements for locomotion and active stability control. The main passive stabilizing structures are the anterior cruciate ligament (ACL) and the posterior cruciate ligament (PCL). Both together are building up the central pillar of the knee joint. The ACL is mainly securing the tibia against anterior translation whereas the PCL prevents the tibia from posterior translation. The medial and lateral collateral ligaments are protecting the joint against sheering forces. The medial and lateral meniscus are completing the congruence between the femoral and tibial joint surface. The menisci, consisting of fibrous cartilage, are important shock absorbers and passive stabilizers of the joint. Excessive external forces, which are commonly acting on the knee joint during accidents and sports injuries, may cause ruptures of the joint capsule, the ligaments, the menisci and also damage the cartilage. In many cases operative

treatment is inevitable. Since the introduction of minimal-invasive surgery therapeutical results have improved greatly. Through tiny little skin incisions it is possible to operate on the knee, shoulder, elbow, wrist and ankle joint with minimal surgical trauma. There is much less post operative pain and rehabilitation time is much shorter in comparison to conventional open surgery.

### Operative technique

Today arthroscopy (i.e. endoscopy of any joint) as minimal-invasive operative technique is the state of the art in joint surgery. By the help of a thin optical lens and a small chip camera the whole interior aspect of the joint is shown on a monitor and precise diagnosis is possible followed by refined surgical procedures with very small precision instruments. This kind of surgery is technically demanding and needs a lot of experience and surgical skill. Over the last ten years, the surgeons of "Praxisklinik 2000" have done more than 25.000 arthroscopically assisted interventions. Our operating theatres are fully equipped and kept always on the latest technical standard. Our unit was certified and is controlled by a very well respected institute for hygiene.



*anterior/posterior cruciate ligament, medial and lateral collateral ligament, patella (elevated) lft. knee joint*



*medial and lateral meniscus (view directly upon tibia head)*



*arthroscopic surgery*