



# ORTHOPÆDICS

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## Treatments vary for complex injuries to knees

Perhaps you watched the 2003 Fiesta Bowl, the January college championship football game, during which a running back planted his foot on the turf and then took a direct blow to that knee resulting in a catastrophic injury. One could see that, even to the untrained eye, his knee should not have bent in that direction. News reports following medical examinations and diagnostic tests described an anterior cruciate ligament tear and meniscal injury that effectively ended this young man's collegiate career. Some doubted that he would ever play football again, yet the following year he was playing in the NFL. Exactly what was his injury and how did he recover?

Christopher Kwong, a certified physician assistant at OAD Orthopaedics (OAD), explains that knee injuries may occur not only during athletic competition, but they may also arise while performing routine tasks when certain stresses are placed on the knee joint.

The knee joint is a "hinge" joint providing motion similar to a door hinge. Primarily, one can bend (flex) and straighten (extend) the knee.

The joint is comprised of two surfaces – the bottom end of the thighbone (femur) and the top end of the shinbone (tibia) – when viewing an upright person.

Ligaments are very strong connective tissues – a band or sheet of tough fibers – that stabilize the knee. The anterior cruciate and posterior cruciate ligaments (ACL and PCL) control forward and backward motion of the knee while the medial collateral and lateral collateral ligaments (MCL and LCL) control sideways or lateral motion of the knee. Cartilage is similar to cushioning pads for the knee. The

knee's medial meniscus and lateral meniscus are crescent-shaped pieces of cartilage acting as "shock absorbers" between the two bones. The ends of the thighbone (femur) and shinbone (tibia) in the knee themselves are surfaced with cartilage. Together they provide a smooth motion when one flexes or extends the knee. Knee arthritis is a situation when the cartilage is worn away causing a very painful grinding, bone-rubbing-on-bone motion of the knee. Medically, this is called degenerative arthritis or osteoarthritis.

Anterior cruciate ligament (ACL) tears occur when twisting and hyper-extension forces are applied to the knee. Energy applied to ACL injuries may also cause meniscus tears or other ligament tears. People may experience knee instability or "giving way" sensation immediately and knee swelling over the next 24 to 48 hours due to internal bleeding in the joint. If these symptoms do not improve with rest, ice and elevation, a visit to an orthopaedic specialist is recommended. An orthopaedic surgeon may order an x-ray or MRI to further evaluate the knee or confirm a diagnosis based on the physical exam.

Knee specialists at OAD Orthopaedics, Aaron Bare, M.D., David Chang, M.D., Matthew Gimre, M.D., Lenard LaBelle, M.D., David Mochel, M.D., Jeffrey Senall, M.D., William Sterba, M.D. and David Watt, M.D., emphasize the availability of both surgical and non-surgical treatment options. Surgery is generally recommended for younger patients or patients who have active lifestyles. The knee instability and possible cartilage injury left untreated may lead to early arthritis for younger patients. Arthroscopic sur-

gery, a minimally invasive procedure, involves the use of small cameras and instruments to evaluate and treat the inside of the knee joint. ACL reconstruction for tears utilizes a graft from the patient's own patellar (kneecap) tendon or hamstring (back of upper leg) tendons or from a donor cadaver. Meniscal injuries can also be treated during this operation. After surgery, early range of motion of the knee and weeks to months of rehabilitative physical therapy are needed to return an athlete to their sport.

Depending on the sport, it usually takes about four to six months to return to competitive participation.

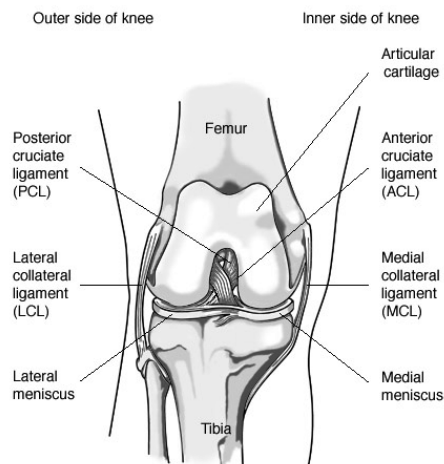
Non-surgical treatment involves rest, ice, compression, elevation, and bracing. Physical therapy may aid in the recovery and should begin when the pain is tolerable to such activity. Tylenol and ibuprofen are commonly used for pain.

Meniscus injuries usually occur with the foot planted and a twisting force applied to the knee; however, older patients may have degenerative tears simply from rising from the squatting position. Patients may experience pain from either side of the knee, swelling, stiffness and/or a locking, catching or popping sensation within the knee over the next 24 to 48 hours. Again, an x-ray or MRI may be ordered to confirm diagnosis soon after the injury or later on if symptoms do not resolve over time.

Treatment options are dependent on the different degrees of severity for meniscal injuries. The tear may be treated conservatively with rest, ice, elevation, and anti-inflammatory

medicines. Arthroscopic surgery can be used as a diagnostic and treatment tool. During knee arthroscopy, the tear may be simply "cleaned up" with some shaving of the tear (debridement) or a repair may be made utilizing internal sutures or tack-like devices.

Repairs are made based on the degree of the tear and the age of the patient. Young patients benefit more



from repairs to avoid early onset of degenerative arthritis. Post-surgical treatment may involve range of motion exercises and physical therapy for a safe return to sports.

The Terrible Triad is a type of injury more commonly associated with football. This occurs when a player receives a blow towards the outer or lateral side of the knee causing tears of the anterior cruciate ligament, the medial collateral ligament and the medial meniscus.

Symptoms would be similar to a combination of ACL and meniscus in-

juries. Again, treatment is operative or non-operative dependent on the severity of the injury and the individual's circumstances.

If you feel that you may have sustained a knee injury described above, and your symptoms have not resolved within 24 to 48 hours with rest, ice, compression and elevation (RICE), OAD recommends seeking medical attention, particularly with a physician specializing in knee injuries. More importantly, if you are unable to bear weight on the leg (stand normally without pain), you should visit the emergency department or your doctor to have x-rays taken to rule out a fracture.

*This article was submitted by knee and shoulder specialist, Lenard LaBelle, M.D., an orthopaedic surgeon at OAD Orthopaedics, Ltd., and Christopher Kwong, M.S., PA-C, certified physician assistant. OAD consists of twenty physicians who specialize in the surgical and non-surgical orthopaedic areas of sports medicine, joint replacement/reconstruction, including minimally invasive procedures, foot and anklepodiatry, spine and neck disorders, hand/wrist/elbow/lower extremity, physiatry and workers' compensation/industrial health services. With convenient locations in Warrenville, Wheaton, Carol Stream, Naperville, Bartlett and Winfield, OAD's state-of-the-art facilities provide comprehensive services such as on-site diagnostic testing/MRI, physical, occupational, industrial and specialized hand therapy services. For appointments and information call (630) 225-BONE (2663). Visit online at [www.OADortho.com](http://www.OADortho.com).*

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