THE BRACING ROOM

BURLINGTON ORTHOTIC CENTRE

Knee Pain - ACL Injury

One of the most common non-contact knee injuries is an anterior cruciate ligament sprain or tear[1]. Up to 70% of ACL tears are due to non-contact quick deceleration/rotating type movements, which overloads the ligament. Individuals with greater Quadriceps angles (particularly women because of a wider pelvis) are predisposed to ACL injuries[2]. Your ACL plays an important role in being the main stabilizer within the knee joint, when intact, it eliminates anterior translation of the tibia on the femur and checks lateral rotation of the tibia in flexion as well as hyperextension.[3] Once it is torn, either partial or fully torn it can cause tremendous pain and discomfort, increase fluids within the joint and can cause instability or even buckling of the knee. The maximum amount of force put on the ACL during gait is during the early stance phase.[2] A proper assessment is needed by a therapist/orthopaedic surgeon along with imaging.

Causes & Symptoms:

The ACL can be injured in several ways:

- Changing directions rapidly
- Sudden deceleration
- landing incorrectly (rotational forces)
- direct contact or collision to the knee.

Symptoms can include:

- Pain with severe swelling (pain may diminish and cease shortly after)
- Loss of range of motion
- tenderness along the joint line
- buckling/ giving way while walking.

Treatment:

Minimal ligament damage can be controlled through conservative treatment, such as ice, elevation, a tensor wrap (pressure) as well as limiting weight put on the affected limb [2] .Keeping your muscles strong around the hip and knee joints is crucial to the healing process. Without stability in these joints, the ACL is compromised and stressed even more. Seeking a good health professionals can help with increased range of motion, decreased swelling, improved proprioception and improved muscular firing patterns. Your orthopedic surgeon typically will request surgery to repair a fully torn ACL, in which case proper rehabilitation after surgery is fundamental to the healing process along with adequate bracing support.

Bledsoe Z-12. These braces are designed to aid the hamstring muscle group to limit anterior tibial translation. The “dynamic strap” on the Z12 retracts posteriorly as the brace goes through extension, which can reduce the amount of translation in open kinetic movement, giving more stability to the knee joint. The pivoting strap also promotes greater fitting with minimal migration during strenuous activities. It’s dual metal hinges and Aluminum or Magnesium frames allow for proper articulation of the femur on the tibia and reduce stress imposed on the MCL or medial meniscus (which are commonly aggravated with ACL injuries).

References

1..Moeller 1997 2. Anderson & Parr 2013 3. Magee 2014