

## physiotherapy

# Knee Injury

by: Suzanne Helfenstein, Physiotherapist

### History

A 15 year old male in his “draft year” of competitive hockey suffered a “knee on knee” impact to his right knee during a game. He was unable to bear weight on the injured leg due to pain and instability. After being cleared in an Emergency Department, he was assessed by Orthopaedics, whereby he was diagnosed (without an MRI) with a partial anterior cruciate ligament (ACL) tear, a grade 3 medial collateral ligament (MCL) tear, and a meniscus injury. The young man was immobilized in a Zimmer splint for 10 days. This resulted in an “80%” reduction in pain, although the knee remained unstable. He was put on a strengthening program at the local sports physiotherapy clinic but there was no noticeable improvement in stability or function after 2 weeks of treatment, and the patient continued to feel his meniscus “flipping” inside his knee.

The orthopaedic clinic did not order an MRI and surgery was not recommended. The patient contacted me for an alternate opinion.

### Diagnosis

My examination revealed a mild loss of quadriceps and hamstring flexibility, although there was no significant difference between left and right. The MCL was still unstable, and there remained mild laxity of the ACL. It appeared that the meniscus was still causing pain. He limped with weight bearing. What was important to discover was that he had an unusual foot structure. It was an “Equino-varus” alignment, which means that his foot favours toe walking and weight bearing on the outside of his foot. In normal, everyday activities, this is impossible, so in order to perform “normal” movements (that is, heel-toe gait and his whole foot in contact with the ground), he had been compensating through other joints. It typically is the next joint in line, which in this case, was his knee. I determined that pre-injury, this patient had been successfully compensating for his Equino-varus alignment, but once the ligaments and meniscus were disrupted, he could no longer compensate, or alternatively, his need to compensate would not let his injured structures repair.

### Treatment

Taping was applied to his foot to support the Equino-varus alignment, thereby eliminating the need to compensate at the knee. In addition, protective taping was applied to the medial knee to brace the MCL. His gait immediately corrected and he was able to squat pain free. He was provided with stability and strengthening exercises that were specifically designed to prevent strength loss, rather than aggressively building the surrounding musculature. Within one week, the patient was completely pain free and walking/running normally. Ligament stability testing was vastly improved and his meniscus was no longer painful with squatting. He returned to the gym to regain strength and fitness, while maintaining the corrective measures in his footwear.

The hockey hopeful was back playing hockey 7 weeks post injury simply by allowing healing to take place without being disrupted by compensatory movements, and following a safe and progressive rehab program.



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