The Difficult Knee

Most cases of knee pain are seldom caused by isolated precipitating events, but are the result of habitual imbalances in the lower extremity movement system.

Besides a torn ligament from a traumatic injury, knee pain is often multi-factorial. The cause of pain can be distant from the site of symptoms. An individual’s body structure (e.g. knock knees or bow legs) and mechanics are contributing factors, especially in combination with over-loading of the knee from walking, running, stair-climbing and sport.

The Hip and Pelvis’ Contribution towards Knee Pain

Hips that turn in (femoral anteversion) or turn out (femoral retroversion) excessively will affect the transmission of forces to the entire lower leg.

People who have knock knees or walk with turned-in hips may be putting more load on the inner aspect of the knee when standing, walking and running. Outwardly rotated hips may also strain knee ligaments and lead to an imbalance in muscle tension around the hip and buttock. Poor
trunk, pelvic and hip stability will also affect optimal knee positioning and patella (knee cap) movement during knee bending and straightening.

**Contributions of the foot to knee pain**

Flat feet or collapsed arches can cause stretching and weakening of the inner knee muscles and ligaments, accompanied by tightening of the outer knee structures. This can lead to lateral patella tracking, in which the patella is repeatedly pulled toward the outer side of the knee during knee movements. The uneven pressure distribution will accelerate wear and tear of the cartilage lining the under surface of the patella. Orthotics often help to improve foot and knee positioning while balancing out the forces of the entire leg. Orthotics should be comfortable and supportive.

**Patella Taping**

Taping can be effective not only to encourage better patella tracking but also to correct the imbalance in tension between the inner and outer knee muscles and ligaments. Taping that reduces pain will encourage more ideal muscle activation patterns.

**Long-term strategies**

- Orthotics to correct foot pronation, where needed
- Strengthen weak hip and buttock muscles
- Increase pelvic stability
- Restore muscle balance and optimal patella tracking
- Stretch tight structures in the knee and thigh
- Improve mechanics of standing, walking, running and other aggravating activities
- Reduce load-bearing on the knee
- Establish an ongoing maintenance program
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