

BioPed

knee pain



Knee pain that occurs around the knee cap is often referred to as Patellofemoral Syndrome. Knee pain that results from mal-alignment of the knee joint is commonly referred to as Mechanical Knee pain. In either case, pain and inflammation in the knee cap and the knee joint can often be attributed to mal-aligned feet. Combined with other causes mentioned below, the result of altered foot alignment can be both debilitating and painful to the knees.

CAUSES And The Effects On Your Feet

The following foot types, diseases and conditions may contribute to knee pain:

- Flat feet and weak ankles.
- Weight gain which results in extra force through the knee.
- Repetitive motion activities such as standing all day at work, playing active sports, and hobbies such as gardening.
- These result in torsional loads that compound knee pressure.
- Arthritis from age, disease, or previous injury.

Figure 1

The following is the sequence of events causing knee pain as a consequence of the arch/ankle flattening and rolling inwards.

1. When the ankle/arch roll down or inwards the shin bone is not supported.
2. The Tibia (shin) bone tilts in at the knee and rotates as per arrow.



Figure 1

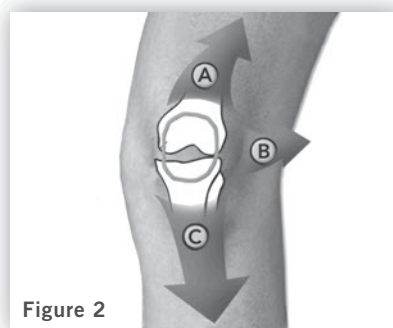


Figure 2

3. The outside (lateral) knee joint compresses excessively. The ligaments and muscles on the inside of the knee are strained.
4. To compensate for the weak ankle/arch the patient may rotate their body weight around to place weight onto the outer border of the foot. This motion further loads the outer knee with excess pressure. The back muscles can strain and pinch the sciatic nerve.

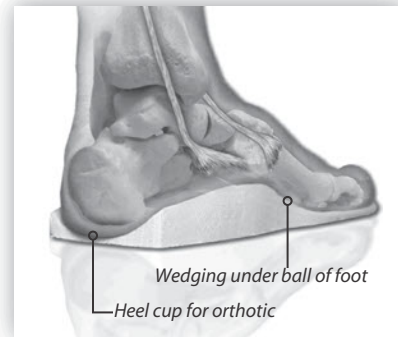
Figure 2

- A. The thigh (quadricep) muscle
- B. and its associated tendon
- C. pull the patella (knee cap) in the direction of the arrow.

Normally the motion of muscle and patella is in an up and down pattern within a groove located on the front bones. The pulling of the patella to the side can result in tenderness, swelling and pain under and around the patella bone.



THE SOLUTION Pedorthic Treatment Options



Semi-Rigid Orthotics

Custom made orthotics anatomically align the arch/ankle in a correct position. The shin bone (tibia) and knee are supported in a neutral position that allows better knee joint function. Following is a list of orthotic features that will be evaluated by your Pedorthist and subsequently built within your orthotic for controlling and/or correcting the mechanics that cause the problem.

- Heel cups with possible wedges
- Arch support
- Forefoot wedging

Thin, rigid orthotics are also available and are extremely useful in footwear that has poor support between the heel and ball of the foot. This may include dress shoes, skates, golf shoes and working boots.



Stable footwear with orthotics are long term solutions for active people

Footwear

Most stability and motion control footwear offered at BioPed centers have removable insoles that can be replaced with your orthotic. This footwear offers wide stable sole bases. It is available in casual shoes, a wide range of athletic footwear, sandals (best house shoe alternative to slippers), work and hiking boots.

The Canadian Certified Pedorthist

The BioPed Pedorthist is specialized in the casting, manufacturing, fitting and modification of many types of custom-made orthotics. Orthotics reflect the patient's condition, lifestyle and footwear requirements. A selection of fashionable footwear that are orthotic friendly, blended with on-site labs that can mould and shape footwear to fit, offers the patient relief from foot problems.



Mal-alignment due to overpronation

Corrected alignment with orthoses

Please visit www.bioped.com for a list of all centres across Canada

BioPed Beach, 1684 Danforth Ave, Unit 2, Toronto, ON M4C 1H6
T 416-778-8853 F 416-778-6398