

patellofemoral instability/subluxation/dislocation

what is patellofemoral instability/subluxation/dislocation?

Patellofemoral instability is when there is excessive movement of the patella (kneecap) and/or weakness in the surrounding structures. The patella connects the muscles of the thigh to the tibia (shinbone). The patella moves through a groove on the femur (thigh bone) when the leg is flexed (bent) and extended (straightened). If this groove is too shallow or uneven in addition with muscle weakness, it could result in a subluxation (comes out of the groove, but comes back into position) or a complete dislocation (remains outside of the groove). Patellofemoral subluxations/dislocation can also be a result of muscle imbalances or a direct traumatic fall on the knee.

who is at risk?

- Children/adolescents who have femoral anteversion (thigh bone turns in), shallow femoral groove, genu valgum (knocked knee), patella alta (high-riding kneecap), loose medial (inside) structures of the knee, tight lateral (outside) structures of the knee, increased Q-angle (wider base hips) and/or excessive subtalar pronation (excessive flat feet).
- Children/adolescents who have a traumatic fall on anterior (front) surface of the knee.
- Children/adolescents who have a family history of patellofemoral instability, subluxation or dislocation.
- Children/adolescents who have poor flexibility (tight muscles) in legs during rapid growth.
- Patellofemoral instability, subluxation and dislocation are more common in females than males.
- Patellofemoral instability, subluxation and dislocation are more common from 8 to 15 years of age.

what are the symptoms?

- The child/adolescent might have an increase in swelling/edema/effusion around the knee.
- The child/adolescent will complain of marked tenderness on the inside of patella (kneecap).
- The child/adolescent will report an audible pop during a twisting movement of the leg with immediate pain.
- The child/adolescent will report an increased pain with attempts to actively move the patella (kneecap).

what are the treatment options?

Conservative/non-surgical treatment:

- Rest from aggravating activities or “relative” rest.
- Ice the area after activity and when painful for 10 to 20 minutes up to once an hour.
- Muscle stretching to improve flexibility.
 - Stretching should be done both before and after activity.
 - Concentrate on tensor fascia lata/abductors (side of thigh), hamstring (back of thigh), quadriceps (front of thigh) and gastrocnemius/soleus (calf) stretching.
 - It is beneficial to strengthen the leg with emphasis on the inside quadricep muscle, the VMO (vastus medialis) muscle. Avoid deep squats, the leg press and long arc/short arc exercises.

- Patellar (knee) braces for support and stability may be beneficial.
- If the condition does not improve, a referral to physical therapy to address pain, swelling, range of motion, flexibility, strength, gait, bracing and a return to sport training program will usually improve symptoms.

Surgical treatment:

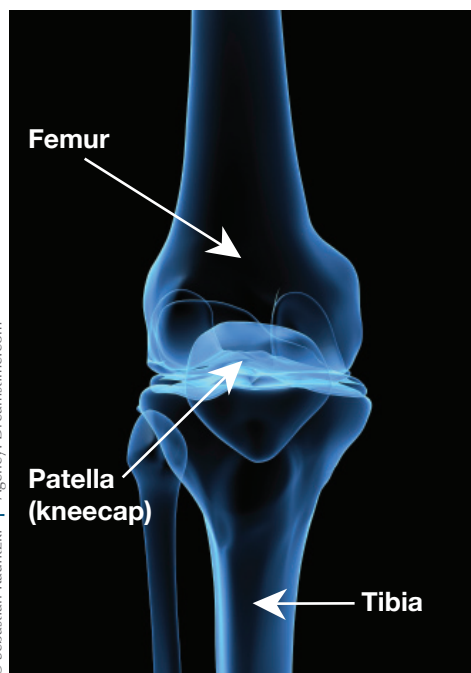
- Procedures to alter the muscle forces on the knee cap may be beneficial if therapy alone does not improve the condition.

what is the time frame for returning to activity/sport?

This is highly variable, but typically 12-16 weeks of muscle strengthening and flexibility is needed before return to activity can be expected.

what are the long-term side effects?

Untreated, this may lead to arthritis in adulthood. Some patients may require activity modifications even with treatment.



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Front View of Knee