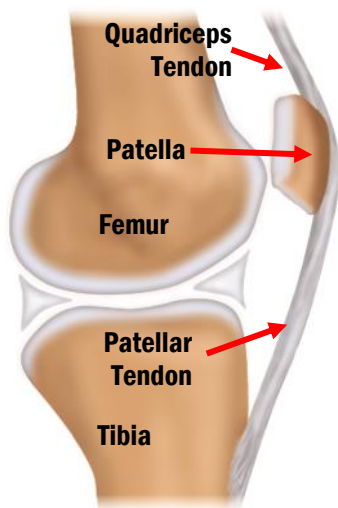


## Patellar Dislocations: Gruesome looking but treatable

by

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The patella (kneecap) rests in the trochlea (groove) along the front of the femur (upper thigh bone). The quadriceps muscle along the front of our thigh contracts to forcefully straighten the knee joint by its attachment of the quadriceps tendon through the patella (kneecap) to the patellar tendon and eventually



the tibia (lower leg bone). Forceful contraction of the quadriceps with the knee in a malaligned valgus (knock-kneed) position can generate sufficient lateral (to the outside) force to violently pull the patella out of the trochlear groove and dislocate the patella.

When a kneecap dislocates, the most important thing is to make sure the patella returned to its proper position. This is called a reduction and tends to occur spontaneously. If it does not self-reduce, the pain and a gross deformity of the knee continues and gently straightening the knee will allow the patella to reduce and return to its proper position.

After reduction, we recommend immediate icing (20 minutes at a time, three times per day), restriction of activity and crutch use to limit pain and further instability. Within a few hours, the knee will typically swell. Working to straighten the knee and fire the quadriceps muscle on the front of the thigh can help prevent muscle atrophy and speed recovery.



Image shows a patella that dislocated laterally out of the trochlea (groove).

Following the injury, you should be evaluated by a physician specializing in sports medicine. X-rays should be taken to identify any fractures or persistent dislocation. If there is significant swelling and signs of injury, an MRI should be ordered to see if there is any cartilage damage, loose bodies and/or torn ligaments or tendons. The majority of uncomplicated, one-time patellar dislocations (no fractures, loose fragments of cartilage or significant tendon and ligament injuries) are treated conservatively with ice, bracing, nonsteroidal anti-inflammatory medications and physical therapy

Orthopaedic surgeons typically do not recommend braces and encourage early range of motion and aggressive rehabilitation for uncomplicated patella dislocations. Most patients are prescribed physical therapy to participate in a progressive exercise program that restores range of motion, strength and eventually functional and athletic movements. There is an emphasis on good form and control of knee and body position with these movements. Rehabilitation also includes work on range of motion and strengthening of the hips, core and quadriceps musculature. The majority of patients recover completely with this conservative treatment and typically return to sport and activity in four to six weeks.

*Continued on page 8*

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*Continued from page 2*

Early surgical intervention may be necessary to remove or repair a large loose cartilage and/or bony fragment, or to repair other injured ligaments or tendons. For patients with recurrent dislocations, surgery may be required to reconstruct the medial patellofemoral ligament (MPFL) to prevent further dislocations and injury to the knee joint. Variations in anatomy also may increase the risk for re-dislocation including a shallow trochlea (groove), an underdeveloped patella, generalized laxity in the tissues, patella alta (high-riding kneecap), valgus knee alignment (knocked knees), lateralization of the tibial tubercle, and increased femoral anteversion (rotational deformity in the thigh bone), to name but a few. These factors are taken into consideration if surgical intervention is contemplated.

Nevertheless, simple patellar dislocations are not uncommon and the majority can achieve good outcomes with conservative treatment and aggressive rehabilitation. Surgical management, when necessary, reliably restores patellar stability and can allow a full return to athletics and other recreational activities.

## Running Away From Stress Fractures

*Continued from page 3*

Stress fractures are preventable because bone has the ability to get stronger and adapt to the stresses it experiences as long as the intensity, duration and frequency of activity is increased gradually with sufficient rest and recovery time between workouts. Some ways to prevent stress fractures include:

- Having a consistent and proper warm-up prior to any activity or exercise. This helps prepare muscles and bones for upcoming activities.
- Train properly by progressing exercise intensity, duration and frequency gradually so as not to overstress bone past its threshold.
- Allow adequate time for rest and recovery to allow bones to remodel and adapt (get stronger) following a workout.
- Proper footwear is helpful as this will give distribute and dissipate forces to the bones.
- Maintain good nutrition with plenty of calories, calcium and vitamin D.
- Maintain a healthy balanced diet where calorie intake matches calorie expenditure.
- For women, make sure you menstruate regularly by eating enough calories to support your exercise level.
- Supplement endurance exercise with resistance (weightlifting) training to encourage good bone strength.



Arrow above points to a stress fracture that appears as a pale white line on this X-ray