What is it?
The quadriceps muscle group is made up of four muscles on the front of the thigh. The quadriceps tendon attaches the quadriceps muscles to the knee cap (“patella”). The patellar tendon attaches the knee cap to the shin bone. These muscles, tendons and bones work together to straighten the knee.

Although patellar and quadriceps tendon ruptures or tears are rare, they are serious injuries. A rupture may occur in the middle of the tendon or close to the bone. Ruptures usually occur when the quadriceps muscle contracts forcefully while the knee is bent. The patellar tendon is more likely to rupture in athletes under age 40, while patients over age 40 are more likely to rupture the quadriceps tendon. Steroid use and certain diseases such as rheumatoid arthritis, lupus, diabetes and kidney failure increase the risk for patellar and quadriceps tendon ruptures. Tendinitis, previous knee surgeries and degenerative changes also increase the risk for rupture.

Symptoms
When the tendon ruptures, a pop may be heard or felt, and the athlete may not be able to actively extend the knee. The knee may feel unstable, and is often swollen and painful.

Sports Medicine Evaluation and Treatment
A sports medicine physician will examine the knee, looking for swelling, discoloration at the front of the knee and pain over the tendon structures. The physician will evaluate the athlete for weakness or inability to extend the knee. A sports medicine physician may order x-rays, which may show the patella to be too high (if the patellar tendon is ruptured) or too low (if the quadriceps tendon is ruptured). Ultrasound or magnetic resonance imaging (MRI) may also be used to look at the tendons to see if they are ruptured.

Ruptures may be partial or complete. A small, partial rupture may heal with immobilization for about six weeks, followed by physical therapy. Surgery is almost always required to repair a completely torn tendon and should be done within one to two weeks of the injury. Wires, sutures or cables may be used to repair the tendon. Physical therapy is needed to regain motion and strength after surgery.

Injury Prevention
Patellar and quadriceps tendon ruptures are difficult to prevent, but regular exercise, stretching, and proper warm-ups and cool downs may help.

Return to Play
Full recovery and return to sport after surgery may take six to 12 months. For partial tears that do not require surgery, return to full activity generally takes less time.

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References