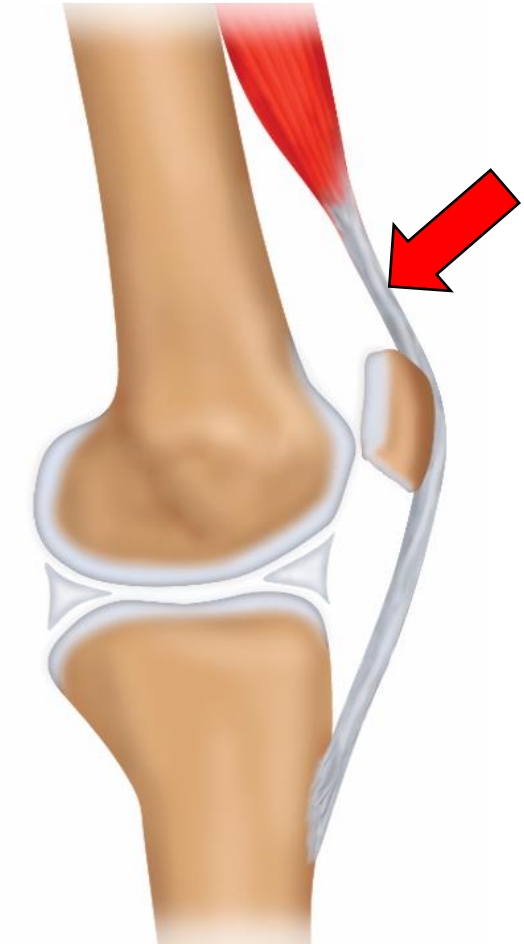
STEVEN CHUDIK MD
SHOULDER, KNEE & SPORTS MEDICINE

Quadriceps Tendinosis

Quadriceps tendinosis is characterized by pain and degeneration of the quadriceps tendon at its insertion into the patella (kneecap). This structure is the tendon attachment of the quadriceps (thigh) muscles to the patella (knee cap). This structure is important in straightening the knee or slowing the knee during bending or squatting. Tendinosis represents degeneration and ultrastructural breaking down of the tendon which results in pain and functional limitations.



Lateral (side) view of the knee with intact quadriceps tendon.

Frequent Signs and Symptoms

- Pain, tenderness, swelling, and sometimes warmth over the patellar tendon, most often at the superior pole of the patella (kneecap).
- Pain and loss of strength (occasionally) with straightening the knee (especially when jumping or when rising from a seated or squatting position) or bending the knee completely (squatting or kneeling)
- Crepitation (a crackling sound) when the tendon is moved or touched

Etiology (Causes)

- Strain from a sudden increase in amount or intensity of activity or overuse of the quadriceps muscles and patellar tendon
- Direct blow or injury to the knee or quadriceps

Risk Factors

- Sports that require sudden, explosive quadriceps contraction (jumping, quick starts, or kicking)
- Running sports, especially running down hills
- Poor physical conditioning (strength and flexibility, such as with weak quadriceps or tight inflexible muscles)

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Prevention

- Appropriately warm up and stretch before practice or competition.
- Allow time for adequate rest and recovery between practices and competition.
- Maintain appropriate conditioning:
  - Cardiovascular fitness
  - Thigh and knee strength
  - Flexibility and endurance
- To help prevent recurrence, perform quadriceps stretching and eccentric strengthening exercises.

Outcomes

This condition is usually much improved and manageable within six to twelve weeks if treated appropriately with conservative treatment and resting of the affected area.

Potential Complications

- Prolonged healing time if not appropriately treated or if not given adequate time to heal.
- Recurrence of symptoms if activity is resumed too soon, with overuse, with a direct blow, or when using poor technique
- Untreated, tendon rupture requiring surgery

Treatment Considerations

Initial treatment consists of medication and ice to relieve the pain, stretching and strengthening exercises of the quadriceps muscles, and modification of the activity that initially caused the problem. These all can be carried out at home, although referral to a physical therapist or athletic trainer for further evaluation and treatment may be helpful. Uncommonly, crutches may be needed for the first few days to weeks until there is good control of the quadriceps muscles and no limp exists. Surgery to remove the degenerated tendon tissue is rarely necessary and is only considered after at least six months of adequate rehabilitation and rest.

Possible Medications

- Nonsteroidal anti-inflammatory medications, such as aspirin and ibuprofen (do not take within seven days before surgery), or other minor pain relievers, such as acetaminophen, are often recommended. Take these as directed by your physician. Contact your physician immediately if any bleeding, stomach upset, or signs of an allergic reaction occur.
- Pain relievers may be prescribed by your physician. Use only as directed and only as much as you need.
- Cortisone injections are not given. Cortisone injections may weaken tendons, so it is better to give the condition more time to heal than to use them.

Modalities (Heat and Cold)

- Cold is used to relieve pain and reduce inflammation. Cold should be applied for 10 to 15 minutes every two to three hours for inflammation and pain and immediately after any activity that aggravates your symptoms. Use ice packs or an ice massage with a cloth between the ice and your skin to prevent burning /freezing your skin.
- Heat may be used before performing stretching and strengthening activities prescribed by your physician, physical therapist, or athletic trainer. Use a heat pack or a warm soak.

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