Overuse Knee Injuries

These injuries are characterized by pain felt around the front or sides of the knee joint. Typically, the knee slowly begins to hurt, but the pain is not related to a specific injury such as twisting or falling.

There are several types of overuse knee injuries:

- Anterior knee pain (also known as patellofemoral joint pain)
- Patellar tendinitis (jumper’s knee)
- Iliotibial band syndrome (runner’s knee)
- Quadriceps tendinitis
- Bursitis

WHERE’S YOUR PAIN?

Possible Causes and Exercises

Outside of Knee
Iliotibial Band Pain

Exercises:
1. Hip Squat
2. Clam
3. Figure Four Stretch
4. Crossover Stretch
5. Hamstring Stretch
6. Calf Stretch

Around Kneecap
Anterior Knee Pain

Exercises:
1. One Leg Squat or Hip Squat
2. Mini Squat or Leg Press
3. Clam
4. Hamstring Stretch
5. Calf Stretch
6. Stork Stretch
7. Kneeling Stretch

Above Kneecap
Quad Tendinitis

Exercises:
1. Stork Stretch
2. Hamstring Stretch
3. Calf Stretch
4. Kneeling Stretch

Below Kneecap
Patellar Tendinitis

Exercises:
1. Stork Stretch
2. Hamstring Stretch
3. Calf Stretch

On Top of Kneecap or Inside of Upper Shin
Bursitis

Exercises:
1. Stork Stretch
2. Hamstring Stretch
3. Butterfly Stretch
4. Calf Stretch

WHAT TO DO

Rest - from all activities that cause pain, especially running, jumping and going up and down stairs.

Ice - two to three times per day. Place crushed ice in a plastic bag, over the knee for 20 minutes.

Aspirin or Ibuprofen - (Important: Stop taking if it causes stomach upset or bloody stools.) To reduce inflammation (for patellar tendinitis, quad tendinitis, or IT Band Syndrome): follow the directions on the bottle of aspirin or ibuprofen. Contact your physician if you are currently taking other medications or if you have any questions.

Strengthen - Muscle strength imbalances of the thigh or hip are possible causes of anterior knee pain and iliotibial band pain.

*Strengthening restores muscle balance.*
Mini Squat
- Rest your back on a wall with your feet 18-24” in front of you.
- Slowly bend your knees to ≤ 90° (pain-free range only).
- **Do not bend your knees forward past your feet.**
- Hold for 2 counts, then slowly straighten your knees.
- To work the inner thigh, do the squat while squeezing a ball or pillow between your knees.
- When this feels easy, hold weights.

Leg Press
- Adjust the platform so your knee bends ≤ 90°.
- Place your foot on the platform.
- Pushing through the ball of your foot, straighten your knee, then slowly bend it.
- Don’t completely straighten the knee. Keep your foot flat on the platform.

One Leg Squat
- Stand with your injured leg on a step.
- Slowly bend your knee until the heel of your other foot touches the ground.
- Then slowly straighten your knee.
- When this feels easy, hold weights.

Clam (outer hip)
- Lie on your side with hips bent forward 45° with your feet together and your knees bent approximately 90°.
- Slowly rotate your top kneecap up towards the ceiling until your knees are approximately one hand-width apart.
- Hold for 3 counts, then slower lower your knee.
- Do not lean your hips back or lift up your top foot.

Hip Squat (gluteal)
- Stand with your un-injured side against a wall.
- Squeeze your buttocks together and hold.
- Keep squeezing your buttocks through the entire set.
- Slowly bend your injured knee approximately 45°.
- Hold for 1 count, then slowly straighten your knee.

Stretch:
- Tight thigh, hip and calf muscles are possible causes of overuse knee injuries.

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<tr>
<th>Technique:</th>
<th>Unless otherwise indicated, hold for 20-30 seconds at a point of a gentle stretch without bouncing.</th>
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<td>Frequency:</td>
<td>Do 2-3 sets per day, 6-7 days per week.</td>
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**Stretching exercises help loosen tight muscles.**

Calf Stretch
- Stand with your feet pointed forward.
- Keep your heels down and back leg straight.
- Slowly bend the front knee until you feel an upper calf stretch in the back leg.

Kneeling (front hip)
- Kneel on the leg that you're going to stretch.
- Squeeze your buttocks together and shift your hips slightly forward until you feel a stretch along the front of your hip/thigh.
- Don't lean forward or twist your hips.
Hamstring Stretch
• Lie on your back with one leg straight and the other flexed up 90° at the hip.
• Slowly straighten your knee until you feel a stretch along the back of your thigh.
• Hold for 5 seconds then slowly lower your leg. Do 10-15 repetitions.

Hamstring Stretch (back thigh)
• Sit with one leg straight and the other bent to the side.
• Slowly lean forward with your chest until you feel a stretch along the back of your thigh.
• Do not reach forward with your hands.

Figure Four (outer hip)
• Lie on your back with your injured leg flexed up at the hip and bent 90° at the knee.
• Pull your knee and ankle together, up and over toward the opposite shoulder.
• Hold when you feel an outer hip stretch.

Cross Over (outer hip)
• Lie on your back and cross the injured knee over your other leg.
• With the opposite hand, pull your knee up and over toward the opposite shoulder.
• Keep your foot flat on the ground.
• Hold when you feel an outer hip stretch.

Stork (front thigh)
• Stand with back straight and knee bent.
• Place a foot on a table or chair, keeping your thigh pointed straight down.
• Squeeze your buttocks together and shift your hips forward slightly until you feel a stretch along the front of your thigh.
• Do not lean forward or twist your hips.

Butterfly (inner thigh)
• Sit with back straight and knees bent.
• Place the soles of your feet together.
• Drop your knees toward the floor until you feel a stretch along the inside of your thighs.
• Do not bounce or lean forward.

CALL YOUR DOCTOR IF
• Knee pain continues after two weeks of self-care.
• You feel sharp, shooting pain at rest (sitting and sleeping).
• You can't walk without limping.
• You see or feel a deformity (possible fracture).
• You feel unusual numbness or tingling in your knee, lower leg or foot (possible circulation problems).
• Your lower leg, foot or toes are blue and cold (possible circulation problems).
• Your lower leg, foot or toes are red and hot and you have a fever (possible infection).

PREVENTION
Most overuse knee injuries can be prevented by using these guidelines:

Condition before starting an activity
To prevent injury, it's important to develop strength and flexibility in the muscles that are primarily involved in your chosen sport. Begin conditioning exercises at least 4-6 weeks before starting a sport season or a strenuous exercise program.

Start any new sport season or exercise regimen at a low intensity
For sports, play no longer than one hour and slowly increase your playing time and intensity each week. For fitness activities such as running, biking, swimming and strength training, start off at a short duration and low intensity, and increase the duration and intensity by no more than 10% a week.