

Physical Therapy Department

Patellofemoral Exercises



P.T. WHO TAUGHT MY CLASS

P.T.'S PHONE NUMBER

This brochure contains all of the exercises you were taught in the Patellofemoral Class. In addition, there are some extra exercises to help you progress as your knees become stronger. We want you to feel better as quickly as possible. Doing the exercises correctly and regularly will speed your healing process. Continuing to do these exercises as part of your daily routine will prevent further problems from developing and keep your legs and knees strong.

Before you begin, there are a few principles you should keep in mind:

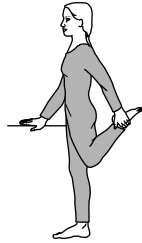
1. Although one knee may be giving you more trouble, it is important that you **do all of the exercises on both legs**.
2. Exercise your knee **through its available range-of-motion**.
3. Stretch when you **first** notice any **signs of discomfort** as well as **before or after any sport or activity**.
4. Usually, the more **stretching** you do, the faster **you will feel better**.
5. **Strengthening** the muscles around your knee **will add stability and lessen your chances of future injury**.
6. **All exercises** should be **done twice per day during the recovery phase**.
7. Once your knee feels better, **continue** to do these exercises **once per day** as part of your daily routine.
8. **Aim to reach the highest level** with each of the exercises to achieve maximum benefit.
9. If you have **increased pain that lasts 1 to 2 hours** after you have finished all of the exercises, **decrease** the number of times you do each **exercise and call your physical therapist**.

STRETCHING EXERCISES

Start with the stretches. Follow the directions for each exercise. With some exercises, you can choose one option or the other, depending upon your preference. Some exercises are arranged in a series of **steps**. You need to do all of the steps in order to complete the exercise. Other exercises are arranged in a progression of **levels**. Start with **Level 1** and advance to the **next level** when you no longer feel a stretch in the lower level. Do each exercise smoothly and slowly. Hold each position for 30 to 60 seconds and repeat every stretch 3 times. Remember to do all stretching exercises twice a day until your knee feels better, then continue to do the exercises once per day.

Quad Stretch

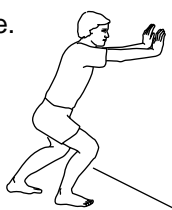
Stand on one leg. Bend your other leg and pull your foot toward your buttock. Note that your bent knee is pointing to the floor and your legs are parallel. You will feel the stretch in the front of your thigh. For safety, hold onto a stable surface so that you can maintain your balance.



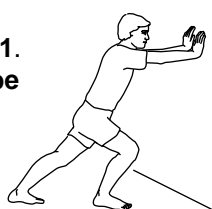
Calf Stretch

There are 2 steps to this stretch:

Step 1: Stand facing a wall or chair holding on for balance. Take a step backward with one leg. Keep your back straight, both feet pointed forward and both heels on the floor. Now push forward over the front leg, bending both knees as far as possible. Don't let either heel come off the floor. You will feel a stretch in the calf of your leg that is further away from the wall.



Step 2: Start in the same position as you did for **Step 1**. The difference is that **your back leg should be kept straight** as the front knee bends. Again, both heels should remain on the floor. You will feel this stretch more behind your knee.



Ham Stretch

There are 2 ways you can do this stretch:

LEVEL 1: Sit toward the edge of a chair. Bend one knee back in under the chair. Straighten your other knee out in front of you. Gently lean forward from your hips while keeping your back straight. Keep your head up. You will feel a stretch in the back of the thigh of your outstretched leg. You can increase the amount of stretch by keeping the heel of your straight leg on the floor and bending your toes toward you.



LEVEL 2: Lie on your back. Keep one knee straight and bend your other knee. Place your hands around the thigh of your bent knee and pull that knee to hip level. Now slowly straighten your knee, raising your foot to the ceiling, until you feel the stretch behind your thigh. You can increase the stretch by pulling your toes down.



Knee Cap Stretch

Sit toward the edge of a chair with your back straight. Bend one knee back in under the chair. Stretch your other leg out in front of you with your knee almost straight. Place the heel of your hand on the outer border of your knee cap and glide it toward the inner side of your leg. Hold for 30 to 60 seconds.



STRENGTHENING EXERCISES

Now move on to the strengthening exercises. Each exercise should be done smoothly and slowly. Some exercises are to be done in **sets of repetitions**. Start with one set of 10 to 15 repetitions each session. When you find *one set* of each exercise easy, progress to 2 sets of 10 to 15 repetitions each session. Likewise, once *2 sets* are easy, advance to *3 sets* of 10 to 15 repetitions each session. When 3 sets are easy, move onto the next level of difficulty. Other exercises are to be done until you **fatigue** or lose the form of the original exercise position or feel increased pain.

Towel Squeeze

Sit on the edge of a chair with your feet flat on the floor. Place a rolled towel between your knees. Your arms and hands can rest on the surface behind you to support your back in an upright position. Squeeze the towel between your knees and hold for 5 seconds. Relax and repeat.



VMO Strengthening

LEVEL 1: Sit on the edge of a chair. Bend one knee back in under the chair. Stretch one leg in front of you with your **knee straight**. Now place your fingertips on the thigh muscle just above the inside of your knee and the other hand on the thigh muscle just below the outside of your hip. Contract your thigh muscle so that the inside tightens first and the outside is as relaxed as possible. Hold 5 seconds. Relax and repeat. When this becomes easy, move on to level 2.



LEVEL 2: Repeat level 1 but with your **knee bent**. Now place your fingertips on the thigh muscle just above the inside of your knee and the other hand on the thigh muscle just below the outside of your hip. Contract your thigh muscle so that the inside tightens first and the outside is as relaxed as possible. Hold 5 seconds. Relax and repeat.



Patellofemoral Exercise Class PROGRESS FLOW SHEET

Personal Goals 1. _____
 2. _____
 3. _____

Strengthening Exercises	Date	Level	Level	Level	Level	Date	Level	Level	Level	Level
		# Reps	# Reps	# Reps	# Reps		# Reps	# Reps	# Reps	# Reps
		Time	Time	Time	Time		Time	Time	Time	Time
Quad Stretch										
Calf Stretch										
Ham Stretch										
Knee Cap Stretch										
Towel Squeeze										
VMO Strengthening										
One Quarter Squat										
Single Leg One Quarter Squat										

	Level # Reps Time																					
Outer Hip Strengthening																						
Inside Calf Strengthening																						
Outside Calf Strengthening																						
Towel Crunch																						
Step Up																						
Step Down																						

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The most advanced level of this exercise is level 3.

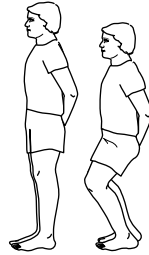
LEVEL 3: Repeat level 1 in a **standing position**.

NOTE: In order to rest your back, return to a full upright standing position after each repetition.



One Quarter Squats

Stand with your feet shoulder-width apart. Hold your hands behind your back and keep your back straight. Pretend you are sitting down in a chair as you slowly bend your knees out over your toes while keeping your heels in contact with the floor. Note that your knees should not bend inward. You will actively tighten the VMO in the front of your thighs. **Slowly** return to your starting position and repeat until you fatigue, with your goal being 3 to 4 minutes.



Single Leg One Quarter Squats

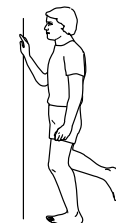
In this exercise you will feel the muscles in the front of your thigh tightening.

LEVEL 1: While standing, shift your weight onto one leg while keeping your opposite foot on the floor for balance. Keep your back straight. Pretend you are going to sit down in a chair as you slowly bend your knee out over your toes while keeping your heel in contact with the floor. You will actively tighten the VMO in the front of your thighs. Slowly return to starting position and repeat movement to muscle fatigue.

LEVEL 2: Repeat level 1 using only your toes on the floor for balance.

LEVEL 3: Progress to full weight on your leg while using only your fingertip on a wall for balance and repeat level 1.

LEVEL 4: Now with full weight on your leg and without any other assistance for balance, repeat level 1.



Outer Hip Strengthening

Stand up against a wall. Stand on the outside leg with your knee relaxed and bend your inside leg so that your knee is next to your other knee. Now push the bent leg into the wall. You should feel the muscles on both hips tighten. Hold 5 seconds. Release slowly, relax and repeat.



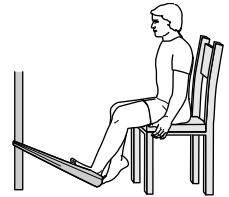
Inside Calf Strengthening

Sit on a chair. Hold the theraband in your hands and wrap it around the ball of your foot. Cross your legs. Point your **foot down and in**, in one smooth motion. You will feel resistance from the theraband. Do this exercise slowly, holding 5 seconds, and release the tension in the theraband very slowly as you return to the starting position. You will feel the muscle on the inside of your calf tighten.



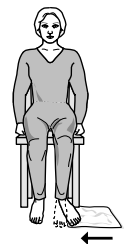
Outside Calf Strengthening

Place one knotted end of theraband under a closed door or around a table leg. Now sit on the edge of a chair and place the looped end of the theraband around the ball of one foot. Keeping your heel on the floor, **pull your foot up and out**. You will feel resistance from the theraband. Do this exercise slowly, holding 5 seconds, and release the tension in the theraband very slowly as you return to the starting position. You will feel the muscle on the outside of your calf tighten.



Towel Crunch

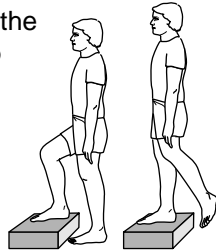
Sit toward the edge of a chair with your back straight. You should not have shoes on when doing this exercise. Place a towel on the floor underneath one foot. Now, while keeping your heel in contact with the floor, move the towel toward your other foot with an inward motion of your foot and ankle.



ADVANCED ACTIVITIES

Step up

Stand below a stair step or a step stool. Place one foot on the step in front of you. Tighten the VMO of the leg on the step and keep it tight and active as you rise up onto the step by shifting all of your weight onto the front leg.



Step Down

Stand on a step. Tighten the VMO of the leg which will remain on the step and keep it tight as you slowly step down to the side with the other leg, barely touching your flat foot to the floor. Keep the VMO active throughout this movement.



CONCLUSION

Remember:

1. **All exercises** should be done **twice per day during the recovery phase**.
2. **Continue** to do these exercises **once per day as part of your daily routine** once your knee feels better.
3. **Aim to reach the highest level** with each of the exercises for maximum benefit.
4. **If you have increased pain that lasts 1 to 2 hours** after you have finished all of the exercises, **decrease the number of times you do each exercise and call your physical therapist**.
5. **Stop any single exercise if it immediately increases your pain. Discuss this with your therapist.**

If you are able to do all of these exercises without pain at the highest level, you should be able to resume all of your normal activities, including those sports you enjoyed before your knee injury, such as walking, hiking, biking, swimming and jogging. **Get out there and have fun!** Your partners in health at Kaiser Permanente wish you a speedy recovery.

My personal plan for exercise:

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The information presented here is not intended to diagnose health problems or to take the place of professional medical care. If you have persistent health problems or if you have further questions, please consult your health care provider.