



前交叉韧带手术前后的物理治疗 加强您的膝关节并助您康复

本讲义描述了患者在华大医学运动医学中心做前交叉韧带 (anterior cruciate ligament) 手术前后需要做的 12 项锻炼。提供了按步骤的说明和照片。

手术前要做的事

- 如有任何顾虑或疑问，请向医疗服务提供者、护士或物理治疗师 (PT) 提问。确保所有的问题都得到解答。
- 在手术前，尽可能地使患腿伸直（请见第2页）。以另一条腿为例，参照腿伸直后的情况。
- 当走路时，尽量不要跛行。
- 为了减轻肿胀，可在膝关节冰敷、套上压缩套。
- 使用本讲义中的锻炼来提高腿部的力量，特别是**股四头肌**（大腿前部）、**腘绳肌**（大腿后部）和**臀部**（臀部）的肌肉。



运动医学大门入口

手术后0至2周的目标

- 如还没有安排**理疗**的预约，请务必安排。
- 手术后的首要目标是：
 - 控制疼痛和肿胀
 - 锻炼股四头肌 (quad)
- 从手术后7天开始轻轻地**弯曲**（曲折）和**伸展**（伸直）膝盖，直到可以轻松舒适地做这个动作。
- 腿应该能够平直。为了帮助腿的平直：
 - 伸展小腿和腿筋肌肉
 - 做**股四头肌** 和**髌骨** 锻炼（请见第4页）

- 为了安全地弯曲膝盖，请做脚跟滑动（请见下文）的锻炼。
- 做股四头肌组的锻炼、球挤压和腿伸直抬高（SLR）的锻炼来帮助股四头肌重新学习如何收缩。
- 可以拄着拐杖和套着护膝套站立和行走。请遵循理疗师所提供的指南。慢慢地增加患腿承担重力。如这样做导致疼痛加剧，则可暂停。

锻炼

当锻炼指南要求“在坚实的表面上”坐下或躺下时，可以使用地板、治疗台、坚实的床垫或宽长的长凳。

小腿伸展

坐在一个坚实的表面上。将一条长带子或绳子绕在患腿的脚掌上。将脚趾拉向面部。应该感觉到小腿后部有拉伸感。尽量保持膝盖伸直。

保持 15 到 20 秒，然后放松。重复做4次。每4次为1组、每天至少做 4 组。



脚跟滑动

坐在一个坚实的表面上。将一条长带子或绳子放在患腿的脚掌上。拉动带子弯曲患膝，将脚跟滑向臀部。尽量让脚跟靠近臀部，但不要将臀部抬起。此时，需要将膝盖弯曲超过90度（一个直角，像一张纸的一角）。

保持3至5秒。然后，滑出脚跟来将腿伸直。重复10次。每10次为1组、每天至少做4组。



腓绳肌的伸展锻炼

仰卧在一个坚实的表面上。将一条长带子或绳子绕在患腿的脚掌部。将腿拉向面部。应该感觉到后腿有拉伸感。膝关节尽量保持伸直状态。

保持15至20秒，然后放松。重复4次。每4次为1组、每天至少做4组。



脚跟支撑

仰卧在一个坚实的表面上。将一条卷起的毛巾或瑜伽块放在患腿的脚跟下。让大腿肌肉放松。保持20至30秒。重复4次。每4次为1组、每天至少做4组。



髌骨移动术

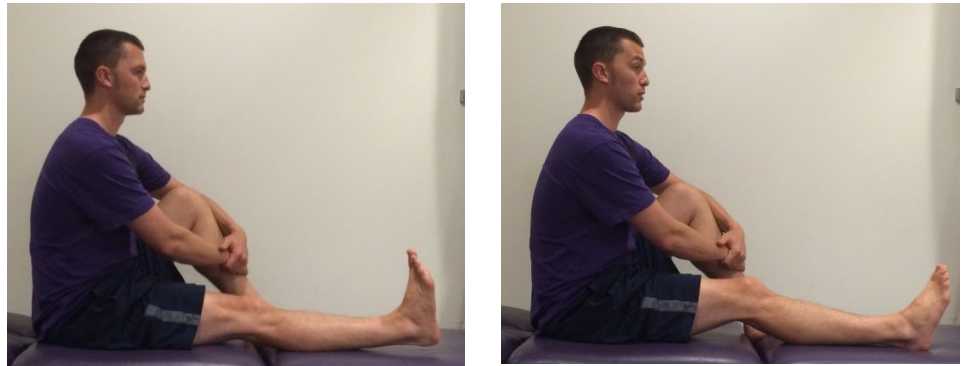
坐在一个坚实的表面上，双腿在伸直。将手指放在患膝的膝盖骨的顶部和底部。

轻轻地将膝盖骨推向面部的方向，然后再推向朝脚趾的方向。如引起疼痛就停止。如需要，可请一位朋友或家人帮助。来回移动膝盖骨大约10次。每10次为1组、每天至少做3组。



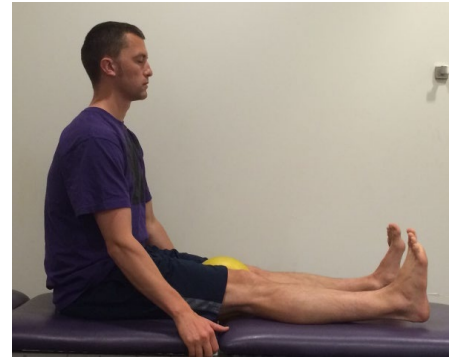
锻炼股四头肌组

坐在坚实的表面上，将患腿伸直在面前。尽可能地收紧股四头肌（大腿肌肉），将膝盖后部向地面的方向下推。保持5秒钟，然后放松。重复10次。每10次为1组。每天至少做4组，



以球挤压锻炼股四头肌组

坐在一个坚实的表面上，双腿伸直。在膝盖之间放置一个足球大小的球或枕头。尽可能地收紧股四头肌。将膝盖并拢来挤压球。并将脚趾伸指向面部。持续5秒钟，然后放松。重复10次。每10次为1组，每天至少做4组。



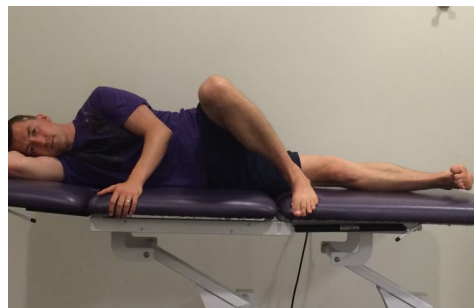
腿伸直抬高

仰卧在一个坚实的表面上。弯曲一边的膝盖，将患腿伸直。慢慢地将患腿直直地抬起，直到它与另一条大腿平行。然后把它放回地面，不要将背部拱起。重复5次。每5次为1组、每天做3组。仅在能保持膝关节伸直，抬腿时没有任何疼痛的情况下做。



髋关节内收

在坚实的表面上侧躺在患侧，确保臀部叠在一起。上肢保持侧卧，患肢伸直。将弯曲的腿的脚底平放在地板上。缓慢地将患腿向天花板抬起，然后缓慢地将它放回地面。腿要持续伸直。不要让臀部向后或向前滚动。重复10次。每10次为1组、每天至少做3组。



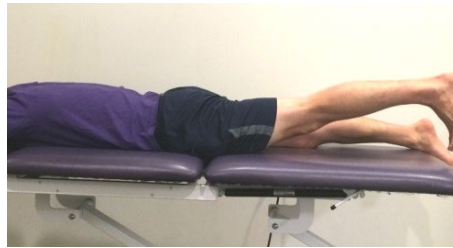
髋关节外展

在一个坚实的表面、躺在未受影响的一侧。确保臀部相互叠在一起。慢慢地将患肢抬起，离地6英寸或更高。保持1秒钟，然后慢慢放回地面。重复10次。每10次为1组、每天至少做2组。



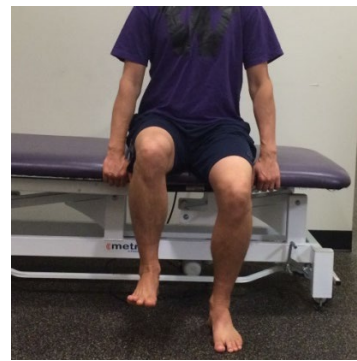
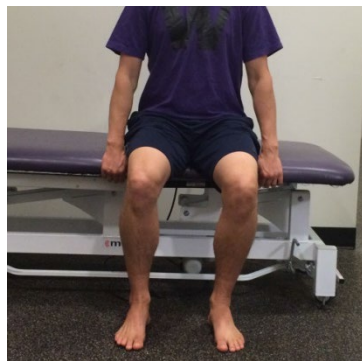
臀部伸展

俯卧在一个坚实的表面上，双腿在身后伸直。挤压臀部肌肉，慢慢地抬起患肢，直到它离开地面约3至4英寸。保持1秒钟，然后慢慢将腿放回地面。重复10次。每组10次、每天至少做2组。



坐姿髋关节屈伸

坐在椅子上或桌子边上。椅子或桌子的高度应该是可以让未受影响的膝盖弯曲成90度（直角），同时保持该脚平放在地上。收紧患肢的大腿肌肉，慢慢地将该脚抬离地面约6英寸。保持1秒钟，然后慢慢将脚放回地面。重复10次。每10次为1组、每天至少做3组。



您有疑问吗？

我们很重视您的提问。当您有任何疑问或顾虑时。请与您的医生或医护人员联系。

华大运动医学中心：请致电 206.598.DAWG (3294) 再按 8。



Physical Therapy Before and After Your ACL Surgery

To strengthen your knee and help your recovery

This handout describes 12 exercises you need to do before and after your ACL (anterior cruciate ligament) surgery at UW Medicine Sports Medicine Center. It includes step-by-step instructions and photos.



The entrance to the Sports Medicine Center.

What to Do Before Surgery

- Share any concerns you have with your provider, nurse, or physical therapist (PT). Make sure all your questions are answered.
- Get your affected leg as straight as you can before surgery (see page 2). Use your other leg as an example of how it looks when the leg is straight.
- When you walk, try not to limp.
- To lessen swelling, ice your knee and wear a compression sleeve.
- Use the exercises in this handout to improve your leg strength, especially your *quadriceps* (front of the thigh), *hamstrings* (back of the thigh), and *gluteal* (buttock) muscles.

Goals 0 to 2 Weeks After Surgery

- If you do not already have PT visits scheduled, make sure to do so.
- Your first goals after surgery are to:
 - Control pain and swelling
 - Exercise your quadriceps muscles (quads)
- Starting 7 days after your surgery, start to gently *flex* (bend) and *extend* (straighten) your knee until this movement feels comfortable.
- Your leg should be able to lie flat by 2 weeks after surgery. **To help get your leg straight:**
 - Stretch your calf and hamstring muscles
 - Do quad sets and *patellar mobilizations* (see page 4)

- To bend your knee safely, do heel slides (see below).
- Do quad sets, ball squeezes, and straight leg raises (SLRs) to help your quad re-learn how to contract.
- It is OK to stand and walk with crutches and your brace. Follow the guidelines your PT gave you. Slowly increase the amount of weight you place on your affected leg. Ease off if pain gets worse as you do this.

Exercises

When an exercise says to sit or lie “on a solid surface,” you may use the floor, a therapy table, a firm mattress, or a wide bench.

Calf Stretch

Sit on a solid surface. Place a long strap or rope around the ball of your foot on your affected leg. Pull your toes toward your face. You should feel a stretch in the back of your lower leg. Keep your knee as straight as you can.

Hold for 15 to 20 seconds, then relax. Repeat 4 times. Do 1 set of 4 at least 4 times a day.



Heel Slides

Sit on a solid surface. Place a long strap or rope around the ball of your foot on your affected leg. Pull on the strap to bend your affected knee, sliding your heel toward your bottom. Try to get your heel as close as you can to your bottom but do not lift your hips. At this time, you do not need to bend your knee more than 90 degrees (a right angle, like the corner of a sheet of paper).

Hold for 3 to 5 seconds. Then, straighten your leg by sliding your heel out. Repeat 10 times. Do 1 set of 10 at least 4 times a day.



Hamstring Stretch

Lie on your back on a solid surface. Place a long strap or rope around the ball of your foot on your affected leg. Pull your leg back toward your face. You should feel a stretch in the back of your leg. Keep your knee as straight as you can.

Hold for 15 to 20 seconds, then relax. Repeat 4 times. Do 1 set of 4 at least 4 times a day.



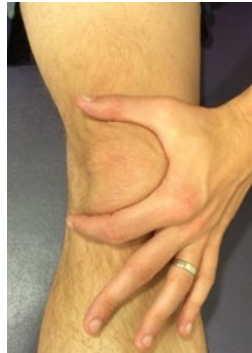
Heel Prop

Lie on your back on a solid surface. Place a rolled-up towel or yoga block under your heel on your affected leg. Allow your thigh muscles to relax. Hold for 20 to 30 seconds. Repeat 4 times. Do 1 set of 4 at least 4 times a day.



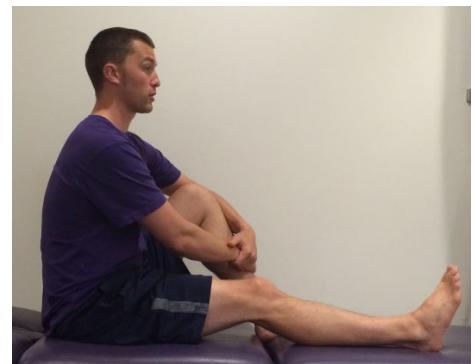
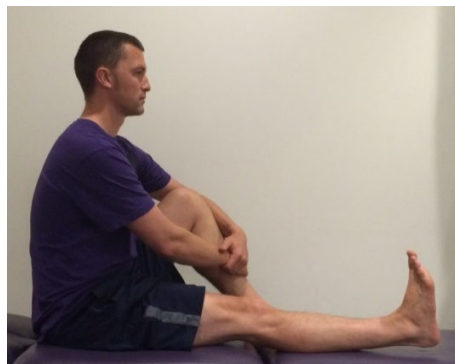
Patellar Mobilizations

Sit on a solid surface with your legs straight out in front of you. Place your fingers on the top and bottom of your kneecap on your affected knee. Gently push your kneecap toward your face and then back toward your toes. Stop if it causes pain. If needed, ask a friend or family member to help you. Move your kneecap back and forth about 10 times. Repeat at least 3 times a day.



Quadriceps Set

Sit on a solid surface with your affected leg straight out in front of you. Tighten your quads (thigh muscles) as much as you can, pushing the back of your knee down to the floor. Hold for 5 seconds and then relax. Repeat 10 times. Do 1 set of 10 at least 4 times a day.



Quadriceps Set with Ball Squeeze

Sit on a solid surface with your legs straight out in front of you. Place a soccer-sized ball or pillow between your knees. Tighten your quads as much as you can. Squeeze the ball by bringing your knees together. Point your toes toward your head. Hold for 5 seconds and then relax. Repeat 10 times each set. Do 1 set of 10 at least 4 times a day.



Straight Leg Raises

Lie on your back on a solid surface. Bend one knee and keep your affected leg straight. Slowly lift your straight leg until it is parallel with the other thigh. Then lower it back to the floor without arching your back. Repeat 5 times. Do this 3 times a day **only** if you can keep your knee straight and do not have any pain when you raise your leg.



Hip Adduction

Lie on your affected side on a solid surface, making sure your hips are stacked on top of each other. Keep your top leg bent and your affected leg straight. Place the foot of your bent leg flat on the floor. Slowly lift your affected leg toward the ceiling, then slowly lower it to the floor. Make sure to keep your leg straight. Do not let your hips roll backward or forward. Repeat 10 times. Do 1 set of 10 at least 3 times a day.



Hip Abduction

Lie on your unaffected side on a solid surface. Make sure your hips are stacked on top of each other. Slowly lift your affected leg up 6 inches or more off the floor. Hold for 1 second, then slowly lower it back to the floor. Repeat 10 times. Do 1 set of 10 at least 2 times a day.



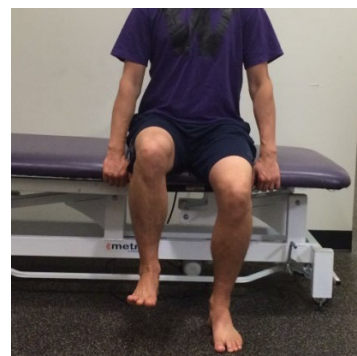
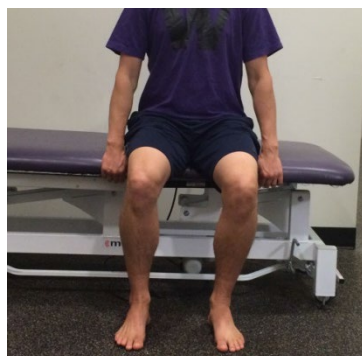
Hip Extension

Lie on your stomach on a solid surface with your legs straight behind you. Squeezing your *glutes* (butt muscles), slowly lift your affected leg until it is about 3 to 4 inches off the floor. Hold for 1 second and slowly lower your leg back to the floor. Repeat 10 times. Do 1 set of 10 at least 2 times a day.



Seated Hip Flexion

Sit on a chair or on the edge of a table. The height of the chair or table should allow you to bend your unaffected knee at a 90-degree (right) angle, while keeping that foot flat on the floor. Tighten the thigh muscles of your affected leg and slowly lift that foot off the ground about 6 inches. Hold for 1 second, then slowly lower your foot back to the floor. Repeat 10 times. Do 1 set of 10 at least 3 times a day.



Questions?

Your questions are important. Call your doctor or healthcare provider if you have questions or concerns.

UW Medicine Sports Medicine Center: Call 206.598.DAWG (3294) and press 8.