

HAMSTRING STRAIN

Muscle strains are a common injury involving an overstretching of a muscle. The severity is determined by the level of damage done.

Grade 1: Mild disruption of fibers, structural damage is minimal.

Grade 2: Moderate disruptions of fibers, rupture of some fibers but still not all.

Grade 3: Full disruption of fibers, either a full disruption across the muscle or tendon resulting in



Signs and Symptoms

- Feeling a pull or hear a pop followed by pain
- Feeling of tightness and tenderness in the back of the leg
- Walking may be painful
- Swelling or bruising may occur with more severe injuries

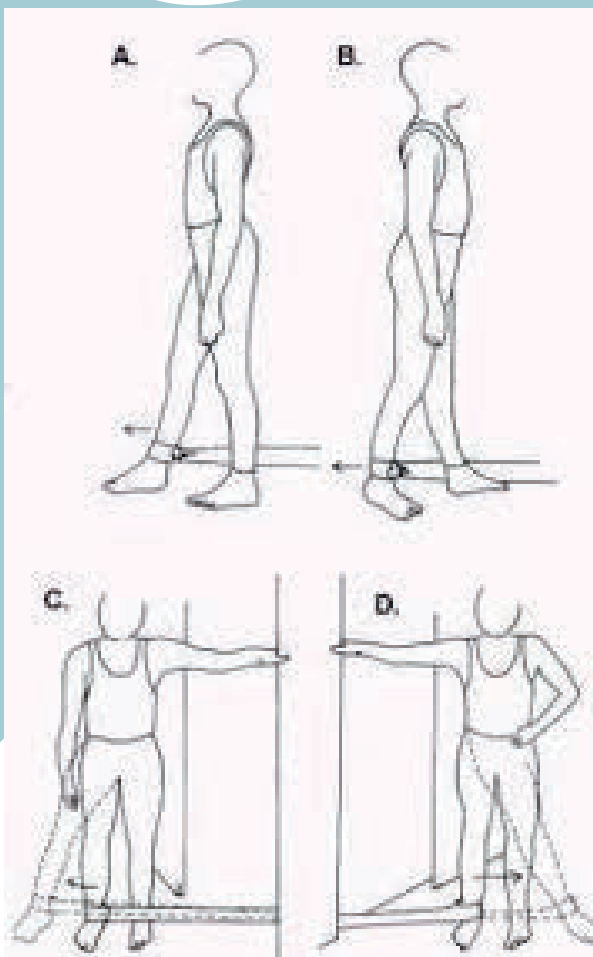
Please see a physician or athletic trainer if unable to walk or excessive bruising or swelling occurs!

Recovery

1 Acute

This phase begins when you're injured. Symptoms include, pain with walking, muscle spasm, knee extension or hip flexion deficit or swelling. The goal of this phase it is to decrease pain and muscle spasm.

- Rest and reduction of activities are important to not increase damage done.
- Compression with ace wrap or compression sleeve, tighter at the bottom and looser at the top to encourage swelling reduction



- **4 way single leg hip raises:** Place the band around your ankles. Stand upright with your core braced and your shoulders down and back. Use a chair, countertop, or other support surface for balance. Keeping both legs straight move your leg forward and backwards or side to side in a slow and controlled manner with the resistance pulling against the direction you're moving your leg.

- **Stationary Bike:** With low resistance, bike at a slow to moderate speed for 15 minutes. This should be pain free movement to maintain some range of motion and to keep movement in the leg.



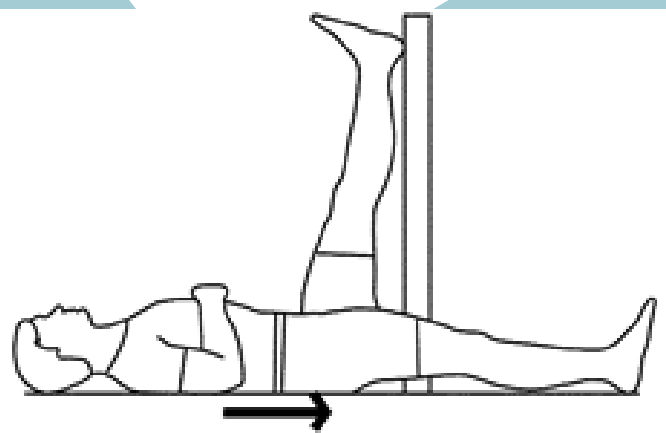
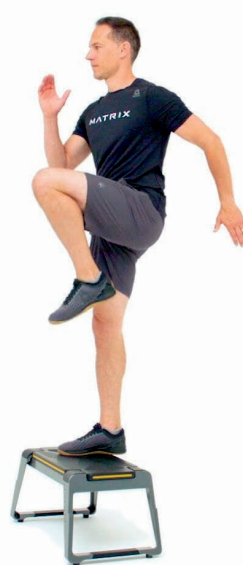
2 Functional

Transition from the acute phase to the functional phase can happen once pain is mild, there is minimal to no knee extension or hip flexion differences between each leg, and there is mild to no swelling. The goal of this phase is to continue to decrease pain, muscle spasm and increase muscular strength and range of motion.



- **Glute bridge:** Lay on your back with both knees bent. Bridge your hips up to create a straight line from the shoulders to the hips to the knees. Hold for a second at the top and slowly move back to the starting position. Difficulty can be increased by after bridging to the top, keep your hips raised and walk your feet out to an almost straightened position then walk them back in before returning to the start position. Difficulty can also be increased by performing the exercise with a single leg.

- **Step up with knee drive:** Place a box or a step, in front of you and stand up straight. Step onto the box with your left foot and drive your right knee up. Hold for second at the top and maintain balance. Slowly step down with your right foot and alternate legs until the set is complete.



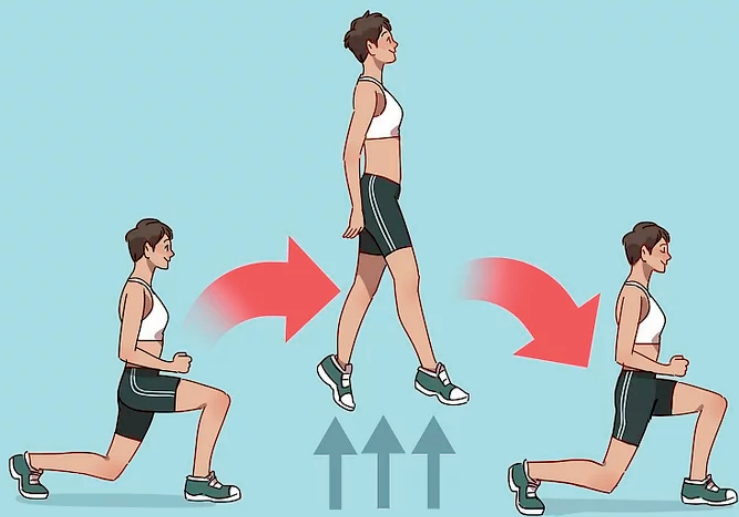
- **Wall stretch:** Lay down on the floor and use a door way to place one leg up along the door jamb. Place the other leg through the door way on the floor. Make sure to keep your knee straight and toes pulled back. You should feel a stretch in the back of the leg. This stretch should be medium and never painful. Hold this position for 2 minutes.

3 Return to Sport

Transition from the functional phase to sport can happen once the patient has no pain, no muscular spasm, no knee extension or hip flexion deficits and no swelling. Intermittent soreness may still be present. The goal of this phase is to return the patient to full activity participation.

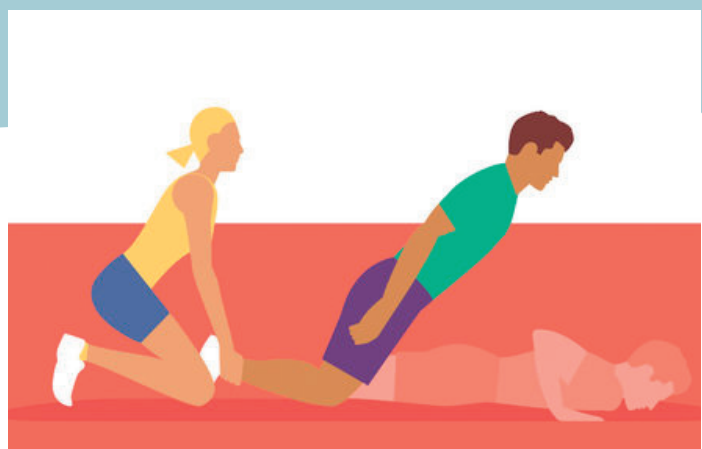
- **Lunge falls with rebound:** Lunge forward with your left leg. Sink your hips back and down as your left foot strikes the ground. Be sure to keep your left knee aligned with your left foot, not allowing your left knee to pass over the toes. Hold the down-position briefly, and push through your left hip to return to the starting position.





- **Scissor jumps:** Starting in a lunge position, propel yourself into the air and switch your legs to end in a lunge on the opposite side. Begin by jumping low and staying in relatively the same place. Advance this move by increasing height, speed or distance.

- **Nordic Hamstrings:** Hook your heels under a sturdy object or have a partner hold them. Kneel on something padded and start with your body upright. Lean forward while keeping your hips and back straight. Use your hamstrings to slowly let your body descend to the floor. Be prepared to catch yourself when your hamstrings fail. Push off the ground and squeeze your hamstrings to get back to the starting position. Repeat for the desired number of reps.



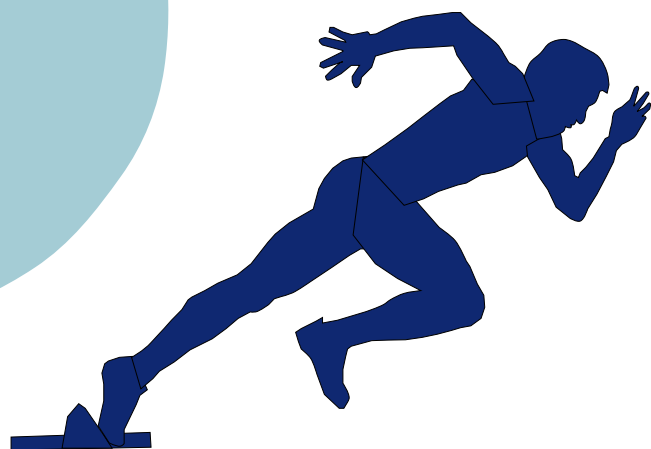
Sprinting and Cone Drills

Start at 25-40% max speed and increase as tolerable. Most top speed work should be done around 90-95%. Top speed reps at 100% should be held to a minimum.

Sprinting

10 yd Bursts 4 to 12 repetitions.

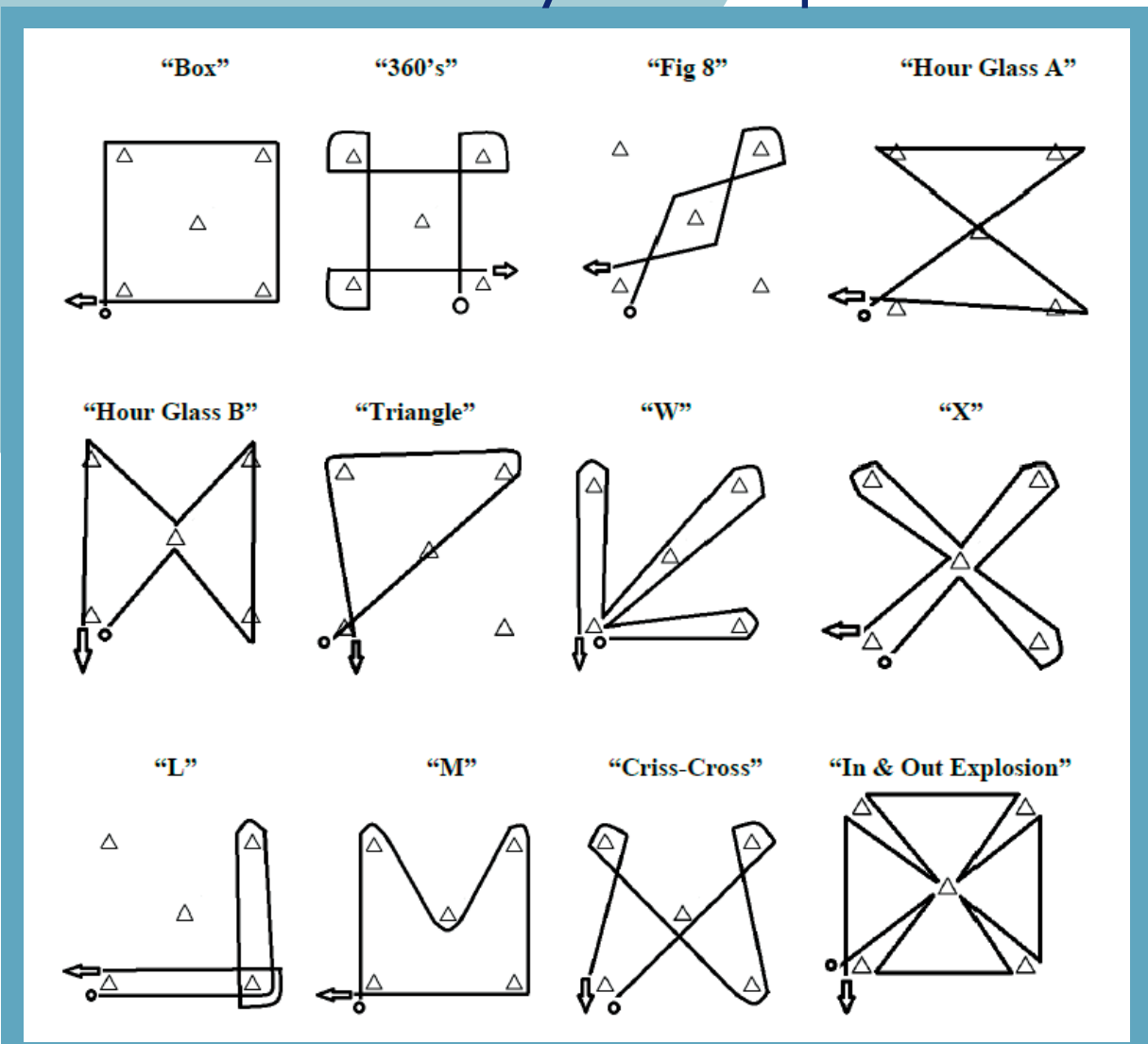
Accelerate from the start position utilizing sprint mechanics through a 10 yard marker.



5 Cone Drill

2 to 4 repetitions, 2 to 4 Patterns

Cones should be placed 5 yds apart in a "Box" shape with a center cone. Sprints and cuts based of desired pattern. May incorporate agility movements for variability. Increase speed as tolerable.



This is not an exhaustive list of exercises and more should be supplemented in at the discretion of a health care professional. Please seek medical attention if you are experiencing concerning symptoms or delayed healing.