The #1 Exercise to Prevent Hamstring Strains

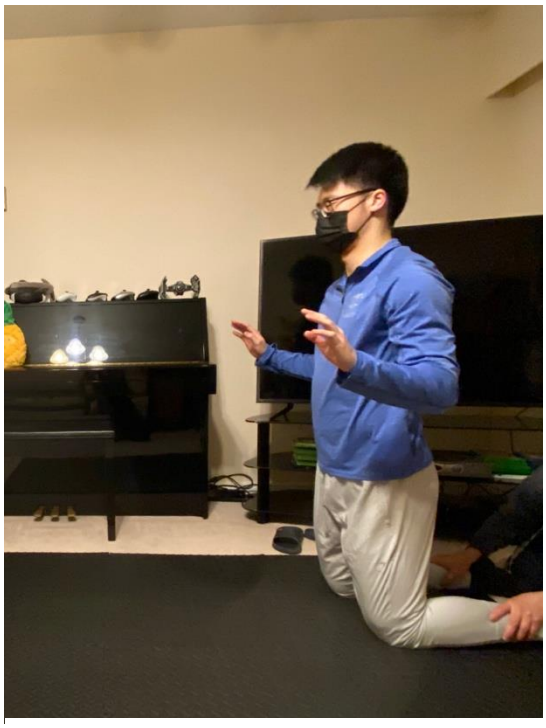
Hamstring strains are one of the most prevalent injuries in sport and have one of the highest recurrence rates among muscular injuries. There are 2 types of hamstring injuries, Type 1 and Type 2. For this article we will be focusing on Type 1 strains. These strains are due to an excessive amount of force on the hamstrings while elongating, known as a heavy eccentric contraction. Usually this occurs during lower limb exercise where an individual is trying to exert as much force as possible, such as sprinting, jumping, or kicking.

One of the most common beliefs for hamstring strains are due to tight hamstrings. Although tight hamstrings are a risk factor for several muscular and joint injuries, they rarely contribute to hamstring strains. This is due to the fact that the hamstrings rarely reach full elongation for exercises that cause hamstring strains.

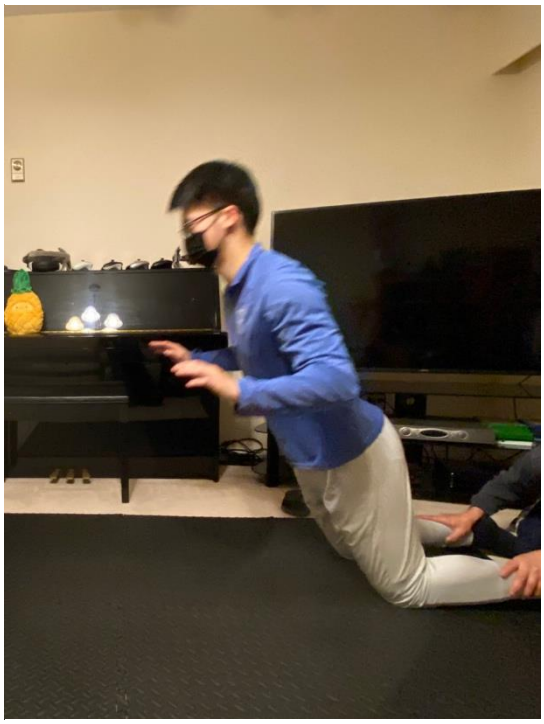
Because we know Type 1 hamstring strains are due to an eccentric contraction, resistance training under a controlled heavy eccentric load will strengthen the hamstrings to be more resilient when under heavy eccentric loads. There are a large variety of resistance exercises for the hamstrings, such as the leg curl, hip thrust, and deadlift, but the problem with these exercises is that failure of the concentric movement is usually before the eccentric portion. While these exercises are great for improving the hamstrings concentric strength, they lack carry over to eccentric strength.

In contrast, the best exercise to improve the eccentric strength of the hamstrings is a bodyweight exercise! The Nordic Hamstring Curl is a bodyweight exercise that produces a heavy eccentric load and has been found effective in preventing first time and recurrent hamstring injuries.

To perform the Nordic hamstring curl, start with your knee on the ground with your ankles either held in place by a partner or locked underneath a heavy object. Before starting the exercise, ensure your knees are in a 90^0 angle, your back is



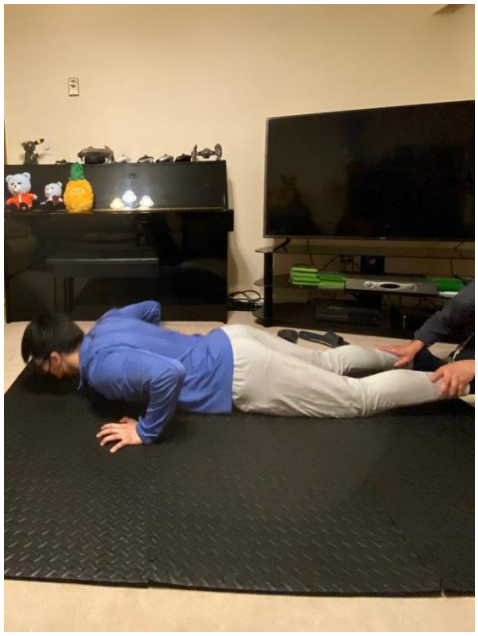
Starting Position



Controlled Slow Eccentric

straight, and your arms by your sides in the same position as a push-up. Initiate the movement by slowly lowering yourself down while maintaining a straight back. Continue slowly lowering yourself down until you start to lose control, then use your hands to catch yourself. After completing the repetition, use your hands to push yourself up back to the starting position.

It is recommended that Nordic hamstrings curls are performed 1-3x a week for 2-3 sets of 5-10 repetitions. Frequency is dependent on the individual's toleration to muscle soreness, as the exercise tends to have an elevated risk of delayed onset muscle soreness.



Ending Position