**Hamstring Stretches**

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| Many people struggle with hamstring stretches. They are a muscle group that tightens up quickly and depending on your posture can be overworked. One often doesn't realize one has tight hamstrings until movement patterns are affected, or the onset of knee or back pain. Hamstring stretching exercises are a necessary part of training in any sport and are useful in the maintenance of good posture.  Stretching tight hamstrings sometimes seems like a full time job and recurring hamstring injuries are a common source of frustration for many athletes. So why is stretching hamstrings so difficult? It all boils down to our postural habits, the anatomy of the hamstrings,  and the way we stretch them.  **Contents**  [What are hamstrings](http://www.stretching-exercises-guide.com/stretching-hamstrings.html#What_are_hamstrings) [Why is stretching hamstrings so difficult](http://www.stretching-exercises-guide.com/stretching-hamstrings.html#Why_is_stretching_hamstrings_so) [Why is stretching hamstrings so important](http://www.stretching-exercises-guide.com/stretching-hamstrings.html#Why_is_stretching_hamstrings_so_) [What is the normal range of the hamstrings](http://www.stretching-exercises-guide.com/stretching-hamstrings.html#What_is_the_normal_range_of_the) [Tight hamstrings in children](http://www.stretching-exercises-guide.com/stretching-hamstrings.html#Tight_hamstrings_in_children) [Hamstring strains](http://www.stretching-exercises-guide.com/stretching-hamstrings.html#Hamstring_Strains) [Hamstring stretches](http://www.stretching-exercises-guide.com/hamstring-stretches.html#Methods_of_Stretching_Hamstrings) [Stretching Hamstrings Using Static Stretches](http://www.stretching-exercises-guide.com/hamstring-stretches.html#Stretching_Hamstrings_Using_Static) [Stretching Hamstrings Using PNF Techniques](http://www.stretching-exercises-guide.com/hamstring-stretches.html#Stretching_Hamstrings_Using_PNF) [Stretching Hamstrings Using Dynamic Stretching Techniques](http://www.stretching-exercises-guide.com/hamstring-stretches.html#Stretching_Hamstrings_Using_Dynamic) [Using the foam roller to stretch hamstrings](http://www.stretching-exercises-guide.com/hamstring-stretches.html#Using_the_foam_roller_to_stretch) [Using The Stick to stretch hamstrings](http://www.stretching-exercises-guide.com/hamstring-stretches.html#Using_The_Stick_to_stretch_hamstrings) [Using a Strap to stretch hamstrings](http://www.stretching-exercises-guide.com/hamstring-stretches.html#strap) |  |

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| **What are hamstrings**  The hamstring muscle makes up most of the mass of the back of your thigh. Hamstrings consist of the semimembranosus, semitendinosus, and bicep femoris.  **Origin:** Bicep femoris originates from the linea aspera on the femur. The semimembranosus and semitendinosus originate from the ischial tuberosities.  **Insertion:** Semimembranosus inserts into the medial tibial condyle. Semitendinosus inserts into the tibia medially. Bicep femoris inserts into the head of the fibula. **Action:** All three muscles act to flex the knee. Semimembranosus and semitendinosus also act to extend the hip.   Hamstrings refers to the three muscles on the back of the thigh. They are called that because the hams hung in the butcher's used to be hung with the hook placed between the tendons and femur of the pig. These muscles work tirelessly to hold us upright and act as powerful hip extensors and knee flexors. The three muscles are as follows: |  |

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| Origin                               Insertion                                    Innervation   |  |  |  |  | | --- | --- | --- | --- | | Semimembranosus | ischial tuberosity | medial tibial condyle | tibial nerve | | Semitendinosus | ischial tuberosity | pes anserine insertion | tibial nerve | | biceps femoris (long head) | ischial tuberosity | head of fibula | tibial nerve | | biceps femoris (short head) | linea aspera near head of femur | head of fibula | common fibular nerve |   **Why is stretching hamstrings so difficult**  The hamstrings fall into the classification of  a "postural muscle". Postural muscles are used to hold your upright posture. They contain predominantly slow twitch muscle fibres and are designed to contract for long period without fatiguing.  They can therefore be prone to hypertonicity. These types of muscles tend to shorten over time unless stretched or taken through their full range of motion on a regular basis.  The hamstrings contain strong connective tissue fibres so that these muscles can work as strong hip extensors and knee flexors. This also contributes to the difficulty we experience when stretching them.  Our postural habits also contribute to their tightness. In our sedentary culture we do a lot of sitting and standing. Sitting maintains our gluteal muscles in a lengthened state causing them to become weak. We then must rely more on our hamstrings when standing. When standing for long periods we shift our hips forward also disengaging our glutes and our hamstrings must work harder.  **Why are hamstring stretches so important**  Hamstring stretches are just part of a program of exercises you can do to prevent injuries. Hamstrings are often overlooked during strengthening because they are on the back of our body. Out of sight, out of mind. Muscle imbalances like this often predispose us to injuries.  Stretching hamstrings is also important to prevent back injuries. Tight hamstrings prevent the forward tilt of the pelvis when bending causing more bending of the lower back. The lower back was not designed to withstand the forces exerted on it in a forward bending position when lifting.  **What is the normal range of the hamstrings**  Stretching Hamstrings is always a challenge. The hamstrings are a group of muscles in the back of your thigh that you use constantly to hold yourself upright. Hence, they are prone to becoming tight. They consist of the biceps femoris, semimembranosus, and the semitendinosus. Because they cross over both the hip and knee joints they can act on the hip or the knee.  The hamstrings flex the knee and also support the pelvis on the femur in the standing position, therefore resisting forward flexion of the trunk. Clinically I normally see 70 to 80 degrees of hip flexion in an adult when the knee is kept straight (straight leg raise). Children have closer to 90 degrees.  [For methods of determining if you have tight hamstrings click here.](http://www.stretching-exercises-guide.com/tight-hamstrings.html)  **Tight hamstrings in children**  Spasm or contracture is seen in the hamstrings in cases of severe spondylolithesis, tumours, and herniated lumbar discs. If your child has tight hamstrings you should consult your family physician prior to beginning a hamstring stretches program to rule out more serious pathology. In most people they simply become tight through disuse.  **Hamstring Strains**  Hamstring strains are one of the most common strains to affect athletes and the most common type of strain to affect the lower extremity. Hamstring strains can also be one of the most disabling injuries to the lower extremity.  These strains are most common amongst athletes that participate in sports that involve a lot of acceleration, deceleration, kicking, jumping, cutting, and pivoting. - sports such as soccer, rugby, football, and raquet sports. [Click here for more information on hamstring injuries.](http://www.stretching-exercises-guide.com/hamstring-injuries.html) |  |

**Methods of Stretching Hamstrings**

Much research has been dedicated to studying the best technique of stretching, optimum frequency, and duration to achieve the best gains in flexibility. The different stretching methods, ballistic stretching, static stretching, pnf stretches, have all been demonstrated as effective in increasing hamstring flexibility.   
  
Many studies on flexibility tend to focus on hamstrings because they are often tight, it is relatively easy to stretch them, and easy to measure range of motion. Studies generally show that even a single stretch is beneficial for improving flexibility although results only last a few minutes. Exercises must be done over the long term to achieve long term results. You can liken stretching the hamstrings to stretching a rubber band. The rubber band will eventually bounce back to its original length unless stretched again. In that way there is a carry over from one hamstring stretch to the next.

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| **Stretching Hamstrings Using Static Stretches**  Hamstring tightness can be a limiting factor for the optimal performance of particular sports and an intrinsic risk factor for sports injuries. Static stretching has been consistently reported in the literature as an effective tool in preventing injuries related to lack of flexibility. The relative safety of this type of stretching makes it a good one for a healthy general population.   **Standing Hamstring Stretch** The standing stretch is valid as an effective method of increasing hamstring flexibility, but depends on pelvic positioning. If you are able to maintain a straight lower back while performing this stretch it is significantly more effective.  To perform this stretch stand and face a chair or table. Keep your chest up and back straight. Bend forward at the hips until you feel a stretch in the back of your thigh.   **Doorway Stretch** The stretch through the doorway has been validated, and is easier in terms of maintaining a stable pelvis. This stretch is performed by lying on the floor with one leg on the wall and the other flat on the floor through the doorway. Pull yourself closer to the wall as you feel a stretch. This hamstring stretching method has been shown to be just as effective as the standing hamstring stretch.   **Table Stretch** I prefer to show people this stretch as it minimizes the risk of lower back injury and makes it easier to maintain a stable pelvis throughout the stretch. Stand with one leg up on a bed or table. Try and keep the other hip neutral (keep the knee of the other leg pointing down toward the floor). Keep your chest up and maintain a curvature in your lower back as you lean forward. Do not allow the knee on the leg being stretched to bend up.   **Floor Hamstring Stretch** The Seated hamstring stretch can be done on the floor. Sit with one knee bent and the bottom of your foot against the inside of the opposite thigh. Stretch out the other leg in front of you while scooting your butt back and lifting your chest up. Maintaining good pelvic alignment and keeping your chest up is important to prevent lower back injuries during this stretch and will maximize the stretch on the hamstrings.  Rotating your trunk toward the side of the stretched out leg will target the bicep femoris more. Rotating your trunk away from the side of the stretched out leg will target the semitendinosus and semimembranosus more so. |  |
| **Stretching Hamstrings Using PNF Techniques**  The PNF techniques use the development of tension in a muscle by contraction to facilitate the relaxation  and therefore stretch a muscle. By facilitating the relaxation of muscles we can improve circulation and improve extensibility of myofascial tissues.  PNF (proprioceptive neuromuscular facilitation) uses inhibition techniques to assist relaxation of the muscle being stretched. Contract-relax, hold relax, and contract-relax antagonist-contract are commonly used. Optimal length of contraction used in these techniques has been found to be 3 to 6 seconds.  1. To perform a self PNF stretch (hold-relax) for the hamstring in standing, stand behind a chair and place one heel on the chair. Straighten your elevated leg and relax into the "standing hamstring stretch" Push your heel actively down into the chair to contract the hamstrings and hold this for 3 to 6 seconds. Then relax and gently force yourself further forward. Repeat this 3 or 4 times.  2.  To perform a self PNF hamstring stretch (contract-relax antagonist-contract) using a strap to stretch the hamstrings in lying is another very effective method of stretching hamstrings. Lie on your back and loop the strap around the ball of your foot holding the ends of the strap with both hands. Be sure to keep your chin down and shoulders back. Exhale while pushing your heel up toward the ceiling. Hold this stretch for 20 to 30 seconds. Now push down with your heel into the strap toward the floor for 3 to 6 seconds. Then try and straighten your knee and actively push your foot up toward the ceiling contracting your quadriceps. Hold this for 3 to 6 seconds. Relax and hold your stretch for 20 to 30 seconds. You can add dimension to this hamstring stretch by bringing your heel to one side and then the other to target different parts of the hamstrings and posterior leg fascia. |  |
| **Stretching Hamstrings Using Dynamic Stretching Techniques**  Dynamic stretching should be done after the muscle is warmed up and can be done before a workout to improve hamstring flexibility without hindering performance in those sports that require strength and power.  1.  The straight leg toe touch is performed in standing. Start with good posture, chest up and shoulders back. Flex your shoulders such that your arms are straight in front of you at 90 degrees.  Try to maintain a tall posture throughout this stretch, tighten your abdominals and keep your back straight.  Swing your leg forward while straight to try and touch your toes to your fingers. Lower your leg and alternate with the other side.  2.  The one-leg bird stretch also requires balance and stability. Start with an upright posture, chest up, shoulders down and relaxed. Lift your straight left leg behind you as you slowly bend forward at the hips and try to touch your toes. You will look like the letter "T" with the leg being stretched being the one planted on the ground. Hold this position for 2 or 3 seconds. Remember to always maintain a neutral spine. |  |
| **Using the foam roller to stretch hamstrings**  To use the foam roller to assist in releasing hamstrings sit on the roller with the roller on the floor as illustrated with the foam roll under the bottom part of your hamstrings. Slowly roll back and forth and side to side working your way up toward the glutes. By bearing weight through one leg at a time you will increase pressure on the one side. Bearing weight through both thighs lightens the pressure. |  |
| **Using The Stick to stretch hamstrings**  Sit on the edge of the bed with one leg up as in the hamstring stretch illustrated [above](http://www.stretching-exercises-guide.com/hamstring-stretches.html#ham_stretch_on_table) . Place The Stick under the back of your thigh and apply pressure to your hamstrings as tolerated running the stick up and down 3 to 4 inches of your thigh for about 10 seconds. Move the sick to another 3 or 4 inches and repeat movement of the stick quickly for about 10 seconds. Do this until you've covered the entire hamstring area. |  |
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