

Special Olympics Massachusetts



Special Olympics

Warm Up and Stretching Guidebook

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Stretching – Focus on Evidence

Stretching muscles is a great way to improve athletic performance through increased flexibility¹. Good flexibility is necessary in most sports for peak performance and safety. Flexible muscles allow runners to have longer strides, gymnastics to perform acrobatic maneuvers, and golfers to rotate their bodies effectively. There has been a lot of research performed lately on the effectiveness of stretching for reducing the incidence of injury, improving muscle performance, and increasing flexibility. While there is pretty conclusive injury that static stretching (where you hold the stretch without moving) improves overall flexibility, there is mixed evidence when it comes to the effectiveness of static stretching for reducing injury or increasing muscle performance.

Some research studies state that dynamic stretching (where you “bounce” at the end of the stretch) is actually better than static stretching for improving muscle performance. Dynamic stretching is inherently more dangerous to the muscle than static stretching, and given the diverse population of Special Olympic athletes we are working with, we feel that dynamic stretching may be an especially unsafe method of stretching. Therefore, all of the stretches we have outlined are static and should be held at a range before the presence of pain. The athletes should experience “slight discomfort”, but should not push into the pain threshold with the stretch. Before any stretching is performed, the athletes should be warmed up with 5 minutes of light exercise, such as walking or jogging.

A warm up prepares the athlete by slowly increasing the heart rate, increasing blood flow to the muscles, and improves internal lubrication of the joints². When the muscles are warm, the static stretch will be safer for the athletes. Recent evidence has outlined that an effective stretch should be held for 30 seconds and be performed two times with a 10 second rest between

stretches³. Research has also shown that a sport specific warm up can be performed after static stretches to prepare the muscle for performing sport specific activities⁴. An example of a full warm up for track and field would include:

1. Walking for five minutes, which could include light arm circles or wrist circles
2. Static stretches for the arms, trunk, and legs performed for 2 sets of 30 seconds.
3. Moderate intensity high-knee jogging and butt-kick jogging to warm the muscles up for the motions of running.

1) Lateral Neck Flexion

- This is a good stretch to loosen up the neck muscles and is good for any sport.

Instructions:

1. Take a breath in.
2. Breathe out and bring your shoulders down.
3. Tilt your head to the left side, moving your left ear toward your left shoulder.
4. Hold the stretch for two or three deep breaths and then lift your head back to center.
5. Repeat to the other side.



Helpful Tips for an Effective Stretch:

- Breathe as you hold the stretch.
- Don't tilt from your waist.
- Don't let your opposite shoulder lift as you tilt your head.

2) Neck Rotation

- Turning your head is part of most sports, therefore good neck flexibility is important for visibility and improving team work.

Instructions:

1. Inhale and make sure that your shoulders are down and you're standing up straight.
2. As you exhale, slowly turn your head.
3. Hold for three deep breaths.
4. Slowly bring your head back to center.
5. Repeat to the other side.



Helpful Tips for an Effective Stretch:

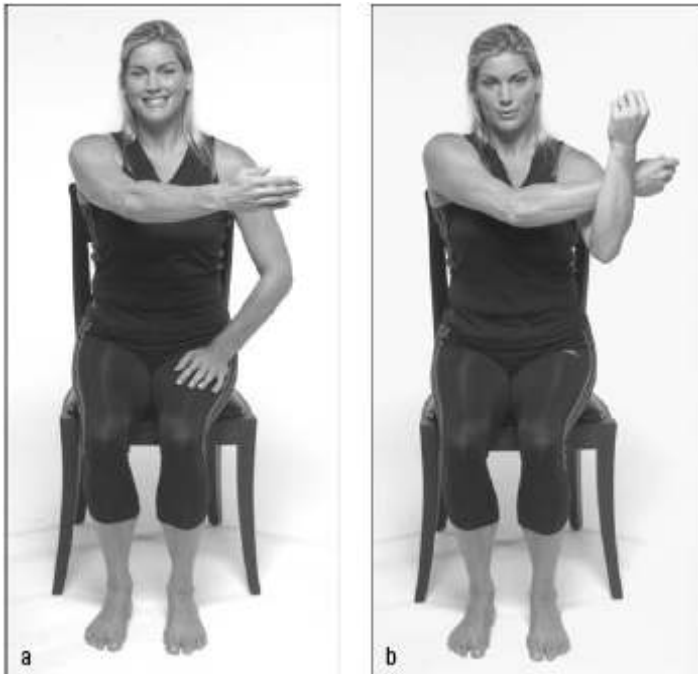
- Breathe as you hold the stretch.
- Hold your shoulders so they face forward. You don't want your shoulders to move as you turn your head.
- Don't force the stretch because you can hurt the delicate neck muscles.

3) Horizontal Adduction/Deltoid Stretch

- Because the shoulders are very active and used in almost every movement that involves your arms, it's good to have these muscles warmed up to optimize their function. This is a great stretch for throwing activities and contact sports where you may have to catch your fall. I might say Warming up your shoulders will maximize the strength in your arms for throwing activities or even catching yourself in a fall.

Instructions:

1. Stand up straight.
2. Lift your right arm across your chest and hook the left arm over your right arm.
3. Inhale and as you exhale use your left arm to gently pull your right arm across your body.
5. Hold the stretch for 30 seconds or four to five slow, deep breaths.
6. Repeat to the other side.



Helpful Tips for an Effective Stretch:

- Breathe as you hold the stretch.
- Don't pull too forcefully.

4) Wide Arm Overhead Shoulder Stretch

- This stretch targets the smaller but very important stabilizing muscles of the shoulders. This is a good stretch for throwers to warm up with.

Instructions:

1. Stand up tall with your feet about hip-width apart.
2. Grab each end of your towel with your palms with your hands shoulder width apart.
3. Straighten your arms and inhale as you raise your arms overhead.
4. Exhale, and if you can, move your arms back a little bit more.
5. Hold the stretch for 30 seconds.



Helpful Tips for an Effective Stretch:

- Keep your arms equal as you hold the stretch.
- Don't twist to either side.
- Don't bounce or force the stretch.
- Don't arch your back

5) Lat Stretch on Hands and Knees

- This position is a great stretch for the large back muscles. As you reach in this stretch, you feel your muscles stretch on each side of your back. This stretch is ideal for sports that involve any pulling motions, like gymnastics, skiing, and weight lifting.

Instructions:

1. Begin with your knees and your hands on the floor.
2. Exhale and reach your arms straight forward and lower your chest toward the floor.
3. Move your shoulders and arms toward the right as far as you can reach and still keep your hips anchored to the ground.
4. Hold for 30 seconds and then move back to the middle.
5. Repeat the same stretch but reach to the left instead.



6) Overhead Triceps Stretch

- This is a great stretch for the muscles in the back of the arm. This is useful for sports that involve pushing motions, such as weight lifting, floor hockey, and swimming.

Instructions:

1. Raise one arm overhead and bend your arm at the elbow so it is pointing upward.
2. Place your other hand on your raised elbow and as you exhale gently press your elbow back.
3. Hold the stretch for 30 seconds.
4. Repeat on the other side.



Helpful Tips for an Effective Stretch:

- Don't arch your back.

7) Biceps Stretch

- This stretch is for the front of the arm, targeting a muscle often used to control the end of the throwing motion. Therefore, it is great for throwing sports like softball and track and field.

Instructions:

1. Stand with your feet shoulder-width apart and your arms out to the side, palms facing forward.
2. Inhale and as you exhale rotate your thumbs downward and back.
3. Hold the stretch for 30 seconds and release.



Helpful Tips for an Effective Stretch:

- Breathe through the entire stretch.
- Don't drop your head forward.

8) Wrist stretch

- This is a great stretch for sports involving gripping, such as baseball, tennis, or weightlifting.

Instructions:

1. Kneel on all fours with most of your weight on your knees.
2. Turn the wrist of your left hand so your fingers point toward your knees and your palm is toward the floor.
3. Gently shift your hips toward your heels. You should feel the stretch in the palm of your hand and forearm.
4. Hold the stretch for 30 seconds.
5. Release the stretch and lift your hands off the floor and turn your wrist so the back of your hand is now on the floor with your fingers toward your knees
6. Gently move your wrist toward the floor and your hips toward your heels.



Helpful Tips for an Effective Stretch:

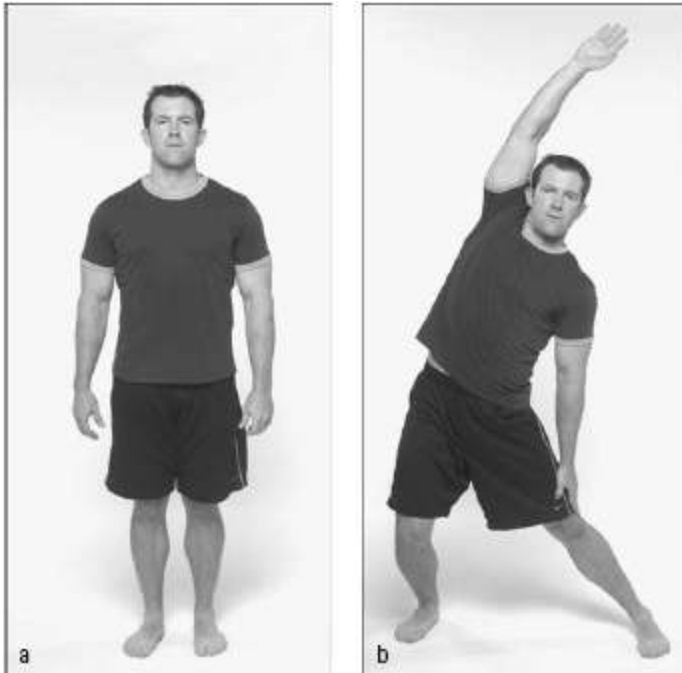
- Don't put all your weight on the wrist that you're stretching.
- Don't bounce in the stretch.

9) Overhead Side Reach

- This stretches your abdominals and your back. These muscles are active in sports that involve bending sideways and twisting, such as golf, tennis, and figure skating.

Instructions:

1. Stand up tall with your feet about a foot apart, with your hands on your hips.
2. Inhale and as you exhale, reach your right arm overhead.
3. Hold the stretch for 30 seconds.
4. Bring your body back to the starting position, and repeat to the left side.



Helpful Tips for an Effective Stretch:

- Don't twist or rotate your hips.
- Don't bend forward as you lunge to the side.

10) Abdominal stretch

- This stretch targets your middle abdominals, and is useful for sports that involve bending forward and backward, such as gymnastics, badminton, and volleyball.

Instructions:

1. Lie on your stomach and prop yourself up with your elbows.
2. Inhale and as you exhale, press your chest up and forward from the floor.
3. Hold the stretch for 30 seconds.



Helpful Tips for an Effective Stretch:

- Your elbows should be directly under your shoulders.
- Keep your back up high.

11) Lying Back Rotation

- This stretch targets several muscles at once and is great for sports that involve twisting, such as softball, soccer, and golf.

Instructions:

1. Lie on your back with both legs and arms straight.
2. Inhale and raise your left knee to your chest; slowly cross your knee over your body to the right.
3. Turn your head to the left or opposite direction as you relax into the stretch. Make sure to keep both arms and shoulder blades on the floor during this stretch.
4. Hold the stretch for 30 seconds; release the stretch, and repeat on the other side.



Helpful Tips for an Effective Stretch:

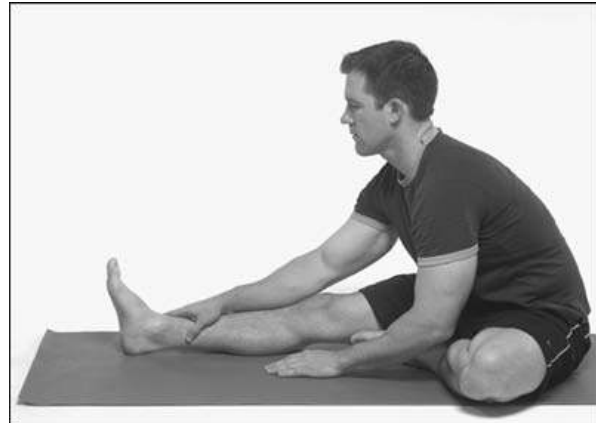
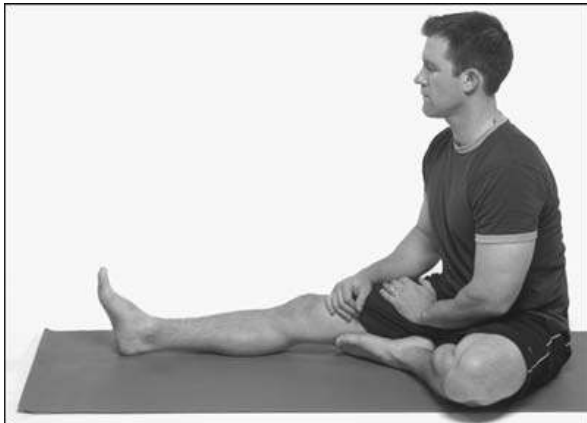
- Breathe regularly as you hold the stretch.
- Don't force your knee to the floor; it's better to keep your shoulder blades on the floor than to get your knee to touch the floor.

12) Hamstrings

- This is a good stretch to use in any sport to help prevent injury. The hamstrings are used in all activities involving running, and any activity that requires the lower body, thus making it the hamstrings prone to injury.

Instructions:

1. Sit on floor with right leg straight, and your left leg bent.
2. Lean forward at your hips keeping your upper body straight.
3. Hold the stretch for 30 seconds.
4. Repeat stretch with left leg straight and right leg bent.



Helpful Tips for an Effective Stretch:

- Keep your knee straight, trying to keep the back of your knee on the floor.
- Do not bounce or force the stretch.
- Look straight ahead, do not look down at your knee.

13) Calf Stretch

- This is a great stretch for any activities that involve running or jumping.

Instructions:

1. Face a wall or any sturdy surface and stand about one foot away with both feet together.
2. Lean forward and place your hands on the wall.
3. Move your left foot back as far as you can keeping your heel flat on the floor and your foot straight.
4. Slightly bend your right knee, but keep your left knee straight.
5. Hold for 30 seconds.
6. Repeat with the other side.



Helpful Tips for an Effective Stretch:

- Keep your heel on the floor.
- Keep your toes and heels in line.

14) Quadriceps Stretch

- It is important to stretch your quadriceps in activities that involve running, and jumping in order to prevent injury, and/or pain.

Instructions:

1. Start by lying on your right side.
2. Rest your right arm under your head.
3. Grab the top of your left foot and pull your ankle back toward your buttocks.
5. You should feel the stretch in the front of your thigh.
6. Hold stretch for 30 seconds.
7. Roll over to other side, and repeat with other leg.



Helpful Tips for an Effective Stretch:

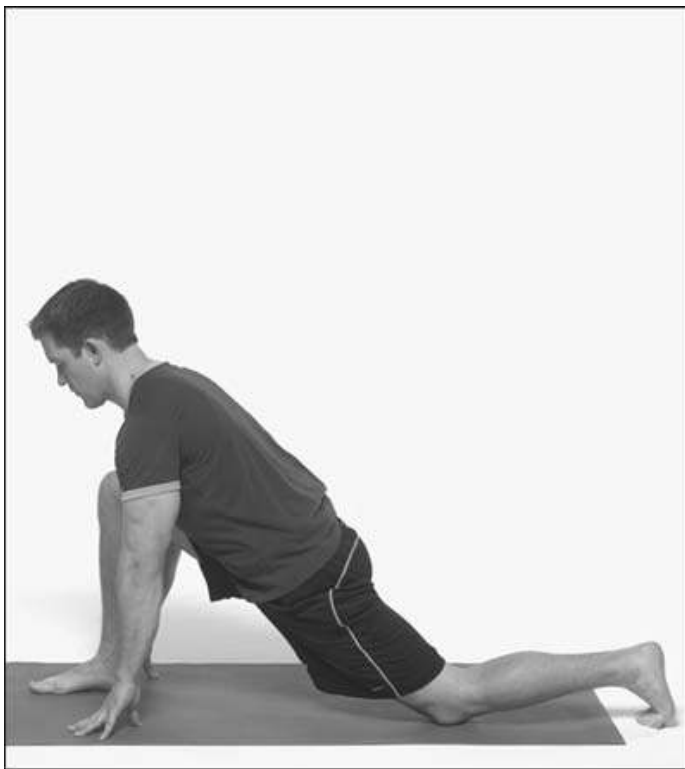
- Keep bottom knee bent for balance
- Do not lift your knee, try to keep thighs touching each other.

15) Hip Flexor Stretch

- This stretch is important for all athletes because it stretches the iliopsoas which is important to both your legs and your back.

Instructions:

1. Start by standing with your right foot in front of you and your left foot behind you.
2. Bend both knees until you can place both hands on the floor right behind your right heel.
3. Slide your left leg back far enough so you can lower your knee to the floor without putting much weight on it.
4. Gently press the front of the hip of your left leg toward the floor.
5. Hold the stretch for 30 seconds.
6. Repeat with other leg.



Helpful Tips for an Effective Stretch:

- Don't put the weight on your kneecap, put it just above your kneecap
- Keep your front knee at a right angle

16) Groin Stretch

- This position helps stretch the muscles of your inner thighs that attach your pelvis to your legs. These muscles are used while performing various running activities, especially those that require quick changes in direction.

Instructions:

1. Start by sitting on the floor both legs bent and the soles of your feet together.
2. Bring your feet as close to your body as is comfortable.
3. Gently push your knees toward the floor.
4. Hold for 30 seconds.



Helpful Tips for an Effective Stretch:

- Don't hunch your shoulders up toward your ears or round your back.
- To reduce stress on your knees, move your feet away from your body. To increase the stretch, move your feet toward your body.

17) Buttocks/Hip Stretch with Legs Crossed

- This stretch keep mobility in your hips, and helps keep muscles in good balance which can prevent poor posture, and back pain.

Instructions:

1. Lie on your back with both knees bent and feet on the floor.
2. Place the outside of your right ankle on the top of your left thigh, just above your knee..
3. Raise your left foot off the floor, and gently pull your left knee closer to your chest with your hands.
4. Using your right elbow, gently press your right knee away from you.
5. Hold stretch for 30 seconds, and repeat with other leg.



Helpful Tips for an Effective Stretch:

- Keep your shoulder blades down.
- Do not lift your hips off the floor
- Do not bounce or force stretch

18) Alternating knee hugs

- This stretch helps stretch the muscles in your lower back. Ensuring that the lower back is stretched and warmed up prior to activities that involve twisting can help prevent injury to the back.

Instructions:

1. Lie on your back with your knees bent and feet flat on the floor.
2. Bring your right knee up toward your chest and place your hands behind your knee to help assist.
3. Hold the stretch for 30 seconds and release.
4. Repeat with other leg.



Helpful Tips for an Effective Stretch:

- Do not bring your knee so far toward your chest that your hips lift off of the floor

Evaluation/Feedback

1. Were the stretching methods well outlined and appropriate for the Special Olympics athletes?
2. Describe how this stretching guidebook benefits Special Olympics Coaches?
3. Do you have any suggestions for improving this stretching guidebook?

References

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3. Ryan ED, et al. Determining the minimum number of passive stretches necessary to alter musculotendinous stiffness. *Journal of Sports Sciences*; 27(9): 957-961. 2009.
4. [Chaouachi A](#), et al. Effect of Warm-Ups Involving Static or Dynamic Stretching on Agility, Sprinting, and Jumping Performance in Trained Individuals. *J Strength Cond Res*; 24(1):149-155: 2009.

All images from:

5. Chabut L, Lewis M. *Stretching For Dummies*. Hoboken, NJ, Wiley Publishing. 2007.