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Children's Orthopaedic
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Stretching for Flexibility, Mobility and Performance



Stretching Leg Stretching

Why is stretching important?

Stretching keeps muscles flexible, strong, and healthy. We need flexibility to maintain a normal functional range of motion in our joints. Without stretching our muscles will shorten and become tight limiting our motion.

Tight muscles can cause several problems. First, joint range of motion may be decreased. This effects performance (function) and may cause muscle imbalance. Second, tight muscles can cause pain in the surrounding tendons and joints because of the limited motion. Third, tight muscles are more prone to injury. As you can see it is very important to stretch!

The idea of daily stretching may seem overwhelming with so many muscles in your body. But, you do not have to stretch every muscle you have! However, there are certain areas that are critical for mobility. These major muscle groups include:

- Neck
- Shoulders
- Core/back
- Hips and thighs
- Calves

Try to focus on having equal flexibility from side to side. Unequal flexibility may be a risk factor for injury and can effect performance.

Benefits of improved flexibility

- Improved performance in physical activities
- Decreased risk of injuries
- Improvement of joint range of motion
- Muscles work more effectively and efficiently
- Decreases muscle soreness



□ Tall kneeling quad stretch (Couch Stretch)

Start off in a high lunge position, with your left foot forward. Then, slowly drop your right knee to the ground. Take a few moments to find balance, and once you're stabilized, with your left arm, reach back for your toes on your right foot, or place the foot against the wall for assistance with stretching (shown).

□ Standing calf stretch

Stand away from a wall and put your right foot behind you making sure your toes are facing forward. Lean forward at the ankle while keeping your right knee straight and your

heel on the ground. You can also do this stretch on a step. Hold with knee straight then again with slight bend.



We're NOT all Gumby!

The most important goal of stretching is to get a good stretch!

DO NOT worry if you can't get into the exact position the models do—that's NOT the goal. Simply get into the stretch position, feel it working in the right area of your body and hold it for 1-2 minutes. You will get better over time. Also, very few of us are symmetric. That means our left side and right side won't be exactly the same. Don't worry about it, just do your best! Getting in the habit of warming up and down and stretching before AND after exercise will make you the best athlete you can be, prevent injuries and improve your function! **STRETCH!!**



Upper and Loweng Basics

Upper and lower leg stretching

Stretching your leg muscles may make it easier to walk, run, climb stairs, bend, twist and perform any other important activities and sports.

❑ Piriformis stretch (one-legged chair pose)

Begin by standing and lift one leg to a table top position while keeping your opposite foot planted. Rotate the knee of your floating leg outward and place your ankle on top of the opposite thigh. (You can use your hands to slide your shin up). Begin to shift your weight back as if you are sitting in a chair and send some weight to the heel of your planted foot. Keep your chest lifted. Use the wall for support, if needed. You should feel this in the back of the unsupported hip.



❑ Low lunge stretch

Step your right foot forward between your hands, aligning the right knee over the heel. Then lower your left knee to the floor keeping the right knee fixed in place, slide the left back until you feel a comfortable stretch in the left front thigh and groin. Turn the top of your left foot to the floor.



❑ Kneeling quad/tibialis anterior stretch (Saddle stretch)

Kneel on the floor or on a mat with the tops of your feet flat on the floor and your buttocks over your heels. Lean back to increase the intensity of the stretch.



Stretching is not a replacement for a warm-up

Stretching without warming up first decreases the benefit of stretching and can decrease its effectiveness. Research has shown that stretching muscles before warming up can actually cause harm to your muscles. Prior to stretching participate in five to ten minutes of light activity, such as a quick walk, jog, stationary bike, row, etc... This increases blood-flow to the area and makes the muscles easier and more responsive to stretch.

Some Stretching Do's and Don'ts

- DON'T bounce—stretch in a smooth motion without bouncing. Bouncing as you stretch can cause injury.
- DO hold your stretch—breathe normally and hold each stretch for at least 30-60 seconds or longer.
- DON'T stretch in pain—you should feel some tightness or tension, but if your stretch hurts, you've pushed it too far. Try the stretch again, but do not go as far.
- DO make stretches specific to your activity—stretching the muscles used most in your sport or activity helps decrease the risk of injury.
- DO keep up with your stretching—regular stretching can help you achieve the most benefits.



Static vs Dynamic Stretching

Static stretching is where the muscles are put on tension and held for a period of time without moving. These are best performed after exercise or warmup. The stretches in this handout are all static stretches.

Dynamic stretching is meant to get the body moving. They are a movement-based type of stretching that uses the muscles themselves to bring about a stretch. It's different from traditional "static" stretching because the stretch position is not held. Examples include walking lunges, torso twists... Dynamic stretching is best done before an activity.

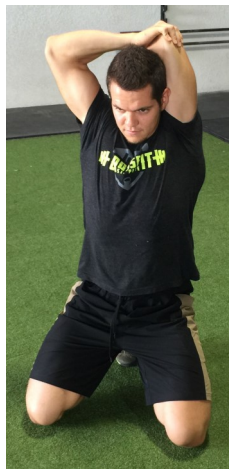
Arm and Shoulg for Mobility

Arm and shoulder stretching

Stretching the muscles of the arm and shoulder are important for upper extremity activities such as throwing a ball, swinging a bat or racquet, swimming, etc.

☐ Overhead triceps stretch

Stand up straight or sit with a tight core, extend your left arm straight into the air. Keep the elbow up as you bend your arm behind your head. Take the right hand and gently pull the left elbow towards the right. Hold this stretch then switch to the other side.



☐ Shoulder cross-body stretch

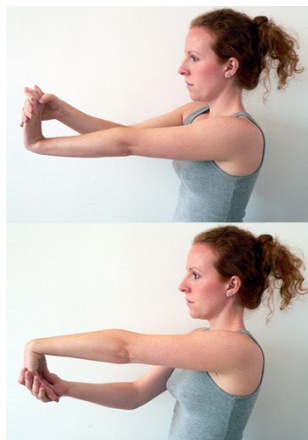
This stretches the back part of the shoulder. Stand or sit with a tight core. Bring one arm straight across your body at chest level. Use your other forearm to hold it in place above the elbow. Push your arm towards your body until you feel the stretch in your shoulder.



☐ Forearm stretch

Begin with the arm straight in front of you and your palm facing downward. Grasp the hand and fingers and pull them to-

wards the body. Then, repeat this same movement, except push the hand and fingers towards the floor.



☐ External Tibial Torsion

External tibial torsion is an outward twist to the leg bone. Unlike internal tibial torsion it is usually seen in late childhood or early adolescence and usually affects only one leg (right is more common). It can produce pain around the knee, called patellofemoral pain, which is not uncommon in adolescents (for a variety of reasons).

☐ Pigeon pose

Begin on all fours, with your knees directly below your hips, and your hands slightly ahead of your shoulders.

From there, slide your right knee forward to the outside of your right hand. At the same time, bring your right foot to the front of your left knee, resting the outside of your right knee on the floor.

Slowly slide your left leg backward, straightening your knee and lowering the front of your left thigh as close as possible to the floor. Lower the outside of your right buttock to the floor. Position your right heel just in front of your left hip and square your pelvis as much as possible. You should feel this on the outer part of you hip and buttock, NOT your knee!



☐ Seated hamstring stretch

Sit with one leg extended and your back straight. Bend your other leg so that the sole of your foot rests against your mid-thigh. Reach toward your ankle, keeping your knee, neck, and back straight.



Hip Stretchinder Stretching

Hip stretching

Having tight hip muscles can impede full range of motion. Improving hip mobility will not only increase athletic performance, but can also help prevent lower back pain/injury.

□ Seated groin stretch (butterfly stretch)

Sit up straight and tall with your knees bent. Drop your legs to the sides and bring the soles of your feet together. Grasp your feet and ankles and slowly lean forward, keeping your spine straight. Place your elbows on the tops of your thighs and gently press down until you feel a stretch. If you want more of a stretch, push down on the thighs with your elbows, pushing your knees toward the floor.



□ Deep squat stretch (garland pose)

Stand with your feet slightly wider than your hips and your feet turned slightly out. Bend your knees and sit your hips back and down as far as possible, coming into a low, deep squat. Bring your elbows inside your knees and your hands into a prayer position. Press your elbows out against your legs and lift your chest up toward your thumbs.



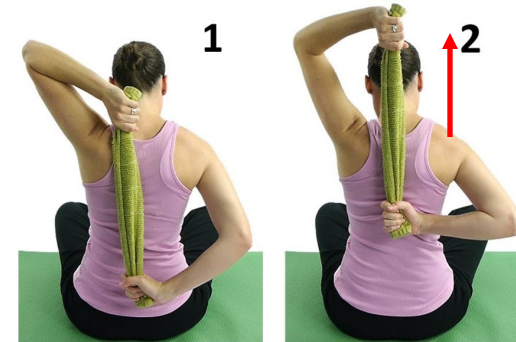
□ Frog pose

Get down on all fours, with hands on the floor. Slowly widen your knees until you feel a comfortable stretch in your inner thighs, keeping the inside of each calf and foot in contact with the floor. Make sure to keep your ankles in line with your knees. Slowly push your buttocks back. You should feel a stretch in your groin and inner hips.



□ Shoulder internal rotation (towel stretch)

Grasp a rolled-up towel firmly with both hands, as shown. Gently pull the towel toward the ceiling with your top hand. You should feel a stretch in the shoulder of your opposite arm as your lower hand is gently pulled farther up your back.



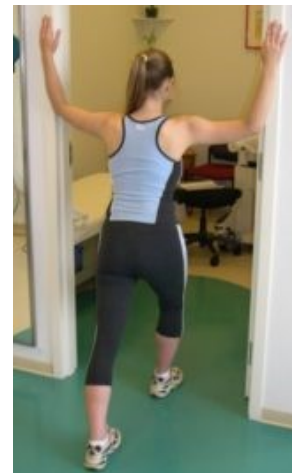
□ Shoulder internal rotation (sleeper stretch)

Lie on your affected side with your shoulder stacked underneath you. You can use a pillow under your head. Bend your arm at the elbow so your fingers are pointed toward the ceiling. Keep your arm bent in this L position. Use your other hand to push your forearm down toward the floor. Press as far down as you comfortably can. You should feel a stretch in the back of your shoulder, arm, or upper back.



□ Chest doorway stretch

Place your elbows on a doorframe, a little bit higher than your shoulders, and step through the doorway with your feet in a slightly split stance. You should feel this stretch in your chest and the front part of your shoulder.



Core and Back Stretching

Core and back stretching

Core and back stretching is important for all sports and activities. The core muscles support the spine and the extremities as they move through their ranges of motion.

☐ Cat/Cow stretch

Start on your hands and knees with your wrists directly under your shoulders, and your knees directly under your hips. Begin by moving into Cow Pose: Inhale as you drop your belly towards the mat. Lift your chin and chest, and look up toward the ceiling. Next, move into Cat Pose: As you exhale, draw your belly to your spine and round your back toward the ceiling. The pose should look like a cat stretching its back.



☐ Thread the needle stretch

Begin on your hands and knees. Place your hands directly under your shoulders and your knees directly under your hips. Slide your right arm underneath your left arm with your palm facing up. Let your right shoulder come all the way down to the mat. Rest your right ear and cheek on the mat looking toward your left. Repeat on the other side.

☐ Cobra pose

Lying on your stomach, place your hands palms down on the ground beneath your shoulders and point your feet behind you. Push the tops of your feet and thighs into the ground. Lift your chest up off the ground by straightening your arms, engaging your back and gluteal muscles.



Core and Back Stretching

☐ Seated spinal twist

Starting with your legs straight cross your right leg over the left in front of you, bend your right knee so that your foot is flat on the floor close to your body. Sitting tall, place your right hand behind you to support you. As you exhale, twist to bring your left elbow across your body so it hooks on the outside of your right knee.



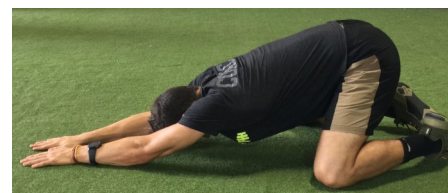
☐ Lower Trunk Twist

Lying on your back, extend your arms out to your side as an anchor. Bring your knees up to a 90-degree angle. Starting the movement from your core, rotate your knees to the left, stopping just before or touching the floor.



☐ Lunge with overhead reach (iliopsoas stretch)

Begin in an upright standing position. Take one big step back with one leg into the lunge position. Lower your back knee to the ground, and then extend your arms overhead, taking deep breaths.



☐ Child's pose

Start by getting on your hands and knees. Put the tops of your feet on the floor big toes touching and bring your knees wider than your hips. Slowly lower your hips towards your heels. Walk your hands forward and rest your head on the floor or a prop.