

Core Stability and Flexibility

Core stability and flexibility are a very important part of the muscular system for rowers. They might not have a direct effect on the athlete's performance; but indirectly, they have a great influence on the athlete's health by preventing injury, making them stronger, allowing them to be more efficient in how they use power and how they row.

The abdominal and back muscles support the spine during the different positions of the rowing stroke.

What exercises improve core stability?

- Prone hold
- Side hold
- Hip rotation
- Bridging
- Reverse bridge
- Swiss ball hip tucks
- Swiss ball hamstring curls

These exercises can be included in the post-workout stretching routine or during specially designated stretching sessions after a good warm-up.

Good core stability helps rowers to:

- Prevent spine injuries
- Improve, posture, mobility, stability and strength
- Improve rowing technique and power application

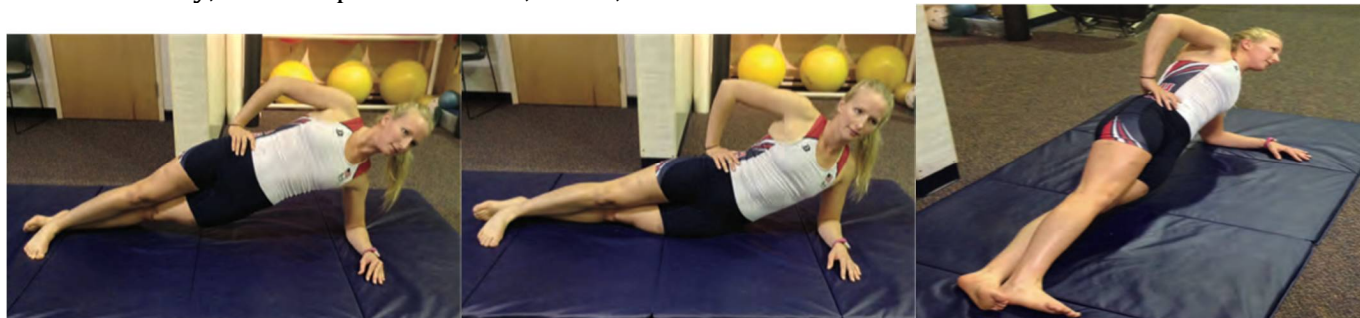
Prone Hold – 2 x 1 minute hold

- Chin tucked, elbows/knees on floor, toes curled under
- Exhale, extend hips/knees, keeping trunk neutral, hold
- Inhale, slowly control knees to the floor, exhale



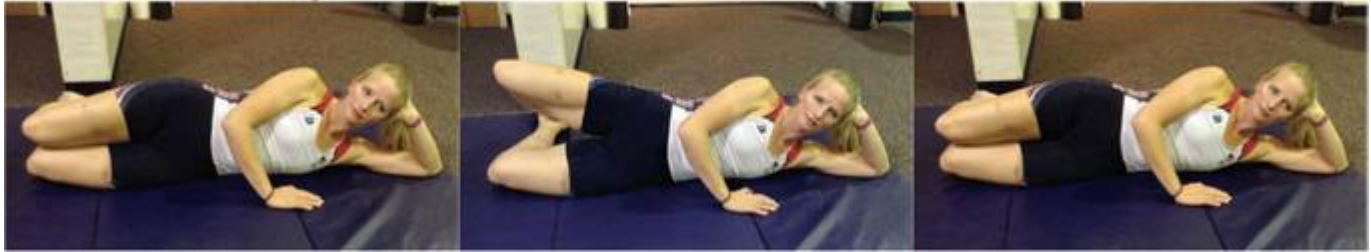
Side Plank – 1 minute hold, each side

- Side lying, knees straight, shoulders/hips/knees in line
- Elbow under shoulder, exhale, lift hips in line with trunk
- Inhale slowly, lower hips to the floor, touch, exhale



Hip Rotation – 6 x 6 second hold, each side

- Lying on the side, neutral trunk and hips
- Raise the top knee to ceiling, hold while maintaining a neutral spine
- Feel work in outer hip



Bridging – 6 x 6 second hold

- Lying on the ground with knees bent
- Squeeze glutes and draw belly to spine
- Hold body position with knees, hips and shoulders in line



Swiss Ball Hip Tucks – 6 x 6 second hold

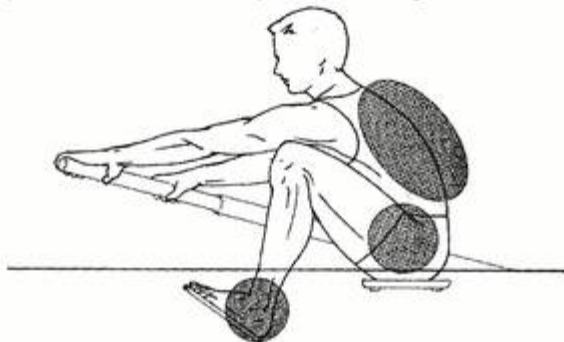
- Place legs/feet on the ball, hands on the floor and trunk neutral
- Tuck knees up towards the chest. Keep trunk neutral and stay as still as possible.
- Return to start



Flexibility

Adequate flexibility also may be a significant factor in injury prevention.

The key areas of flexibility for rowing include the ankles, hips and lumbar spine.



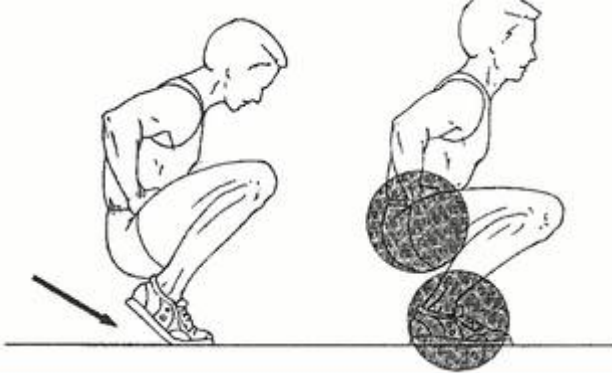
Critical areas of flexibility for rowing include the ankles, hips and lumbar spine.

Ankle flexibility

How to test?

Do a “deep squat” with the feet flat on the ground. If the heels rise up off the floor, that means the athlete has poor ankle flexibility.

Ankle flexibility is inadequate in athlete on left and adequate in athlete on right.



Why it is important to improve ankle flexibility?

Because it will:

- Give the athlete a more comfortable position in the boat
- Improve slide control and the ability to reach the top of the slide comfortably
- Provide better stability at the moment of the catch
- Provide better foot support against the footboards
- Allow more efficient power application

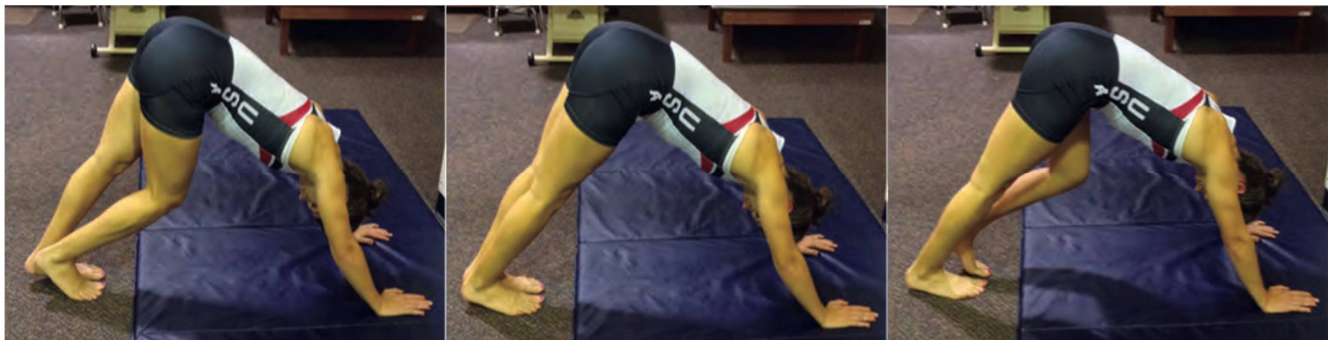
How to improve ankle flexibility?

The best way to work on ankle flexibility is to include some specific exercises into the post-workout routine.

The exercises to improve ankle flexibility include calf raises on stairs, alternating active calf stretch, wall soleus stretch, lunges, jumpies and a deep squat.

Alternating Calf Stretch – 6 x 6 second hold each side

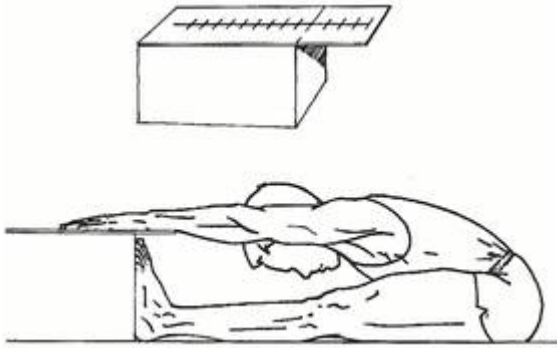
- On all fours with hips up
- Bend one knee and let the heel come off the floor, pressing the other heel down
- Reverse leg positions and repeat



Hip and Lower Lumbar Flexibility

How to test hip and lower lumbar flexibility?

The "sit and reach" test measures the flexibility of the lower lumbar and the hips (see figure below). The rower sits down with his or her legs straight and the feet in vertical position against the box, trying to reach out past their toes. Measure the distance between the tips of the fingers and the toes.



Reach and flexibility test

Interpretation of the sit and reach test results

	Poor	Average	Good
For men	< -3"	-2" to + 2"	> + 3"
For women	< -1"	+2" to + 4"	+ 5"

How and when to work on improving flexibility?

These activities can combine core strength exercises, static stretching, and yoga poses to restore or increase range of motion to the joints and muscles used in rowing.

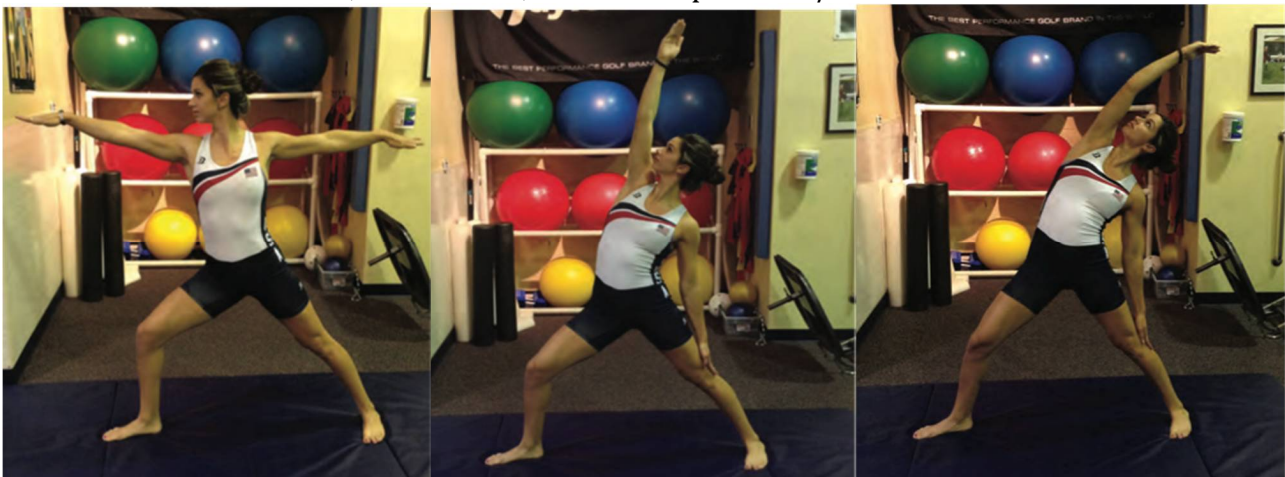
This type of cool down should be done within an hour following the training session, while the athlete's body temperature remains elevated.

The exercises provided below have been selected to address particular muscles groups and joints that are stressed during rowing.

Warrior Pose, Upper Trunk Extension – 2 x 15 second hold each side

Purpose:

- Improves flexibility in hip adductors, hip flexors, gluteals, calves, abdominals, and shoulder muscles. Execution
 - Lean back, extending forward arm overhead and bringing the backward hand to the knee.
 - Feel stretch in the lats, abdominals, and back hip flexors / adductors.



Plank with Low Back and Hip Rotation – 2 x 15 second hold each side

Purpose:

- Improves strength in core, shoulders, hips and back
- Improves flexibility in the abdominal and low back muscles

Execution

- Plank position on hands and feet
- Rotate and lower the trunk and hips to the floor, keeping the elbows straight and feet together
- Hold for one full breath
- Return to the plank position and repeat to the opposite side
- Perform 6 repetitions to each side



Plank with Downward Dog and Upward Dog Poses “Inchworm” – 2 x 15 seconds hold

Purpose:

- Improves strength of abdominals, hips and knees
- Improves flexibility in pectoral, abdominal, hip flexors, hamstrings and calf muscles

Execution:

- Keep knees straight, hold this position for 15 seconds
- Extend the neck and upper back towards the ceiling, hold for 15 seconds, then return to the plank position
- Repeat the exercise two times



Bridge with Alternating Hip Flexion – 2 x 15 second hold each side

Purpose:

- Improves core strength in trunk extensors, gluteals, and hamstring muscles
- Improves flexibility in ankles, hip flexors, gluteals, shoulders, neck, and wrist/finger flexors

Execution:

- Hold for 15 seconds, then go back to bridge position • Perform two times each side



Plank with Forward Lunge – 2 x 15 seconds hold, each side

Purpose:

- Improves flexibility in hip flexors, gluteals, hip adductors, and calf muscles

Execution:

- Hold the pose for 15 seconds, return to plank position
- Perform this exercise two times with each leg



The post workout activities also can include some static stretching exercises, which address typical rowing problems including tight hips, calves, and lower back muscles.

Static Stretches for the Hips

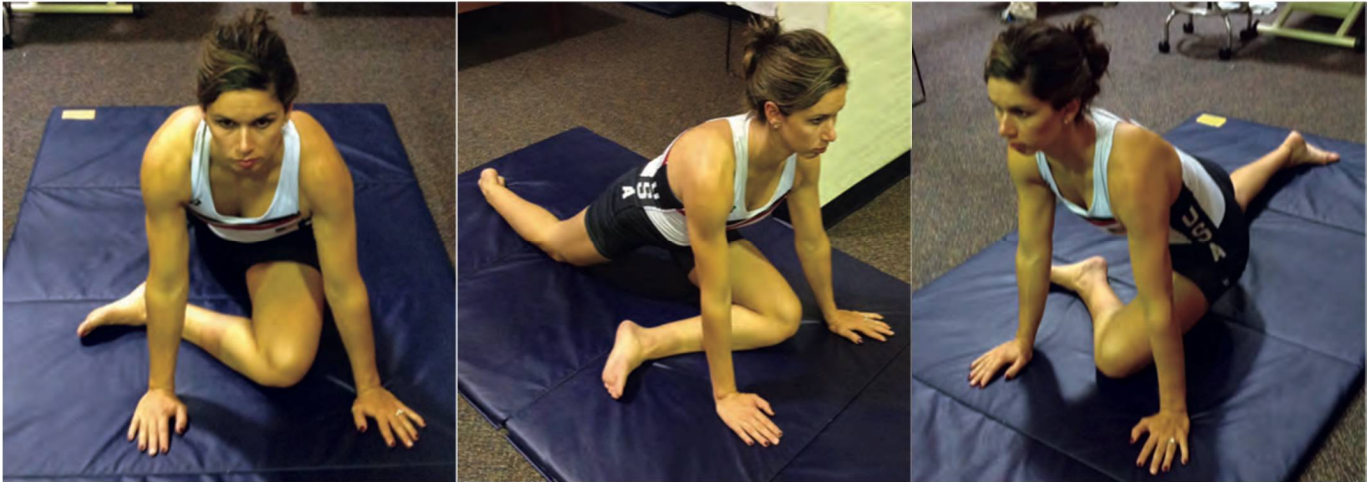
Hip Flexor Stretch – 3 x 30 seconds each side

- 1/2 kneeling, involved hip back, outer hand on the wall
- Put inside hand on the hip and push it forward and away from the wall
- Feel the stretch in the outer trunk, hip and thigh



Piriformis Stretch – 3 x 30 seconds hold each side

- Kneel, cross involved heel in front of the other knee bringing the heel towards the opposite hand
- Straighten and slide the opposite leg back, keeping the trunk and head up



Hamstring Active Stretch – 2' hold each side

- Cup hands behind the thigh, knee bent and opposite leg flat on the floor
- Extend the knee, press the heel up and keep the back /hip on the floor. Point the toes to nose and hold the tension.



For the Lower Back:

Cat and Camel – 6 x 6 second hold for each position

- On all fours, hip/knees at 90 degrees and the elbows straight
- Lower the head, exhale, tighten the abs, roll the hips down, and arch the back up
- Return to start position, inhale, raise the head, lower the back



Lion Stretch – side to side, 6 x 6 seconds on each side

- Hands together and stretched out in front
- Walk hands to one side, feel stretch in shoulders, trunk and hips
- Return to start, walk hands to the other side



Prone Press Up – 6 x 6 second hold

Left: Lay flat on the floor, palms down by the shoulders

Middle: Press up with the hands and elbows, arch the back and neck

Right: Relax trunk and feel the stretch in the lower back



Lumbar Rotation in Supine – 3 x 30 second hold each side

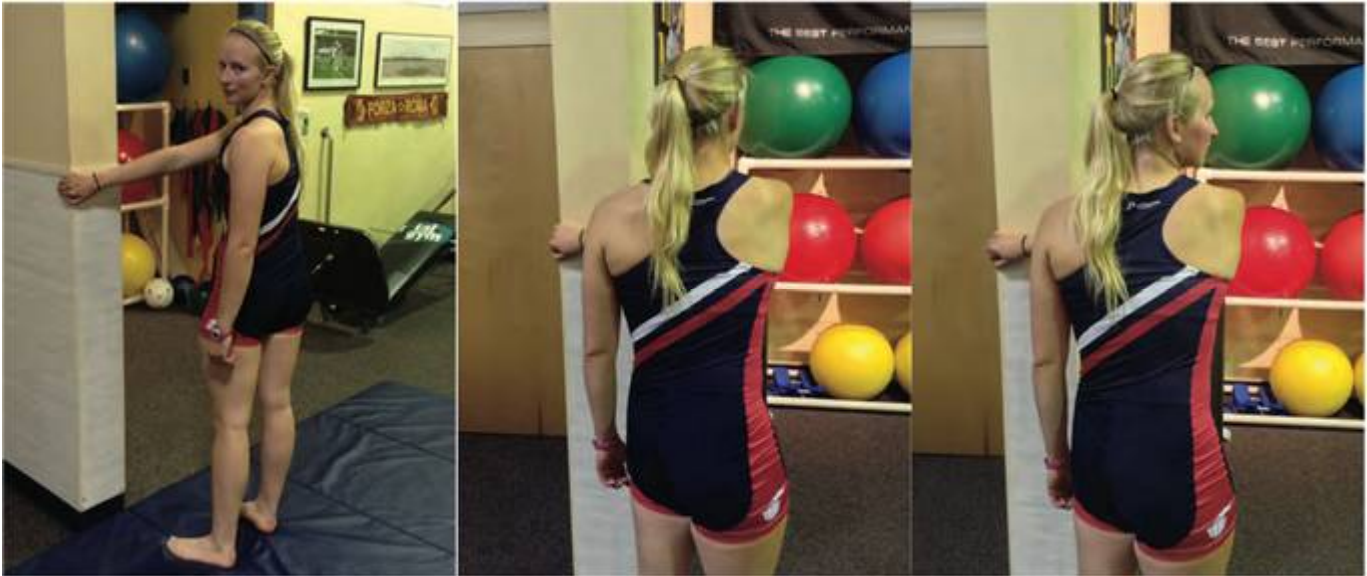
- Lie on your back, bend one knee
- Lower the knee over the other leg and look in the opposite direction
- Return to start, bend the opposite knee and repeat to the other side



Exercises for the Neck and Upper Shoulders:

Posterior Shoulder Stretch – 3 x 30 second hold each side

Left: Grasp the doorway with the involved hand at shoulder height Middle: Rotate the trunk into the involved shoulder and hold the stretch Right: Feel the stretch in the back of the shoulder



Median Nerve Glide – 10 x 10 second hold each side

- Palm flat on the wall, elbow flexed and head facing forward
- Extend the elbow, turn the head and trunk away from palm
- Feel tension in the arm, hold, and return to start



Quadricep Kneeling, Upper Trunk Rotation – 6 x 6 second hold each side

- Left: On all fours, chin tucked, back neutral and elbows straight
- Middle: Raise hand to ceiling, pivot trunk on down shoulder
- Right: Feel work in the upper back, stretch in the shoulder/chest, return to start, repeat to opposite side



Land Warm-ups Before Going on the Water

It is essential to provide appropriate warm-up exercises to prepare the athletes to race or practice everyday.

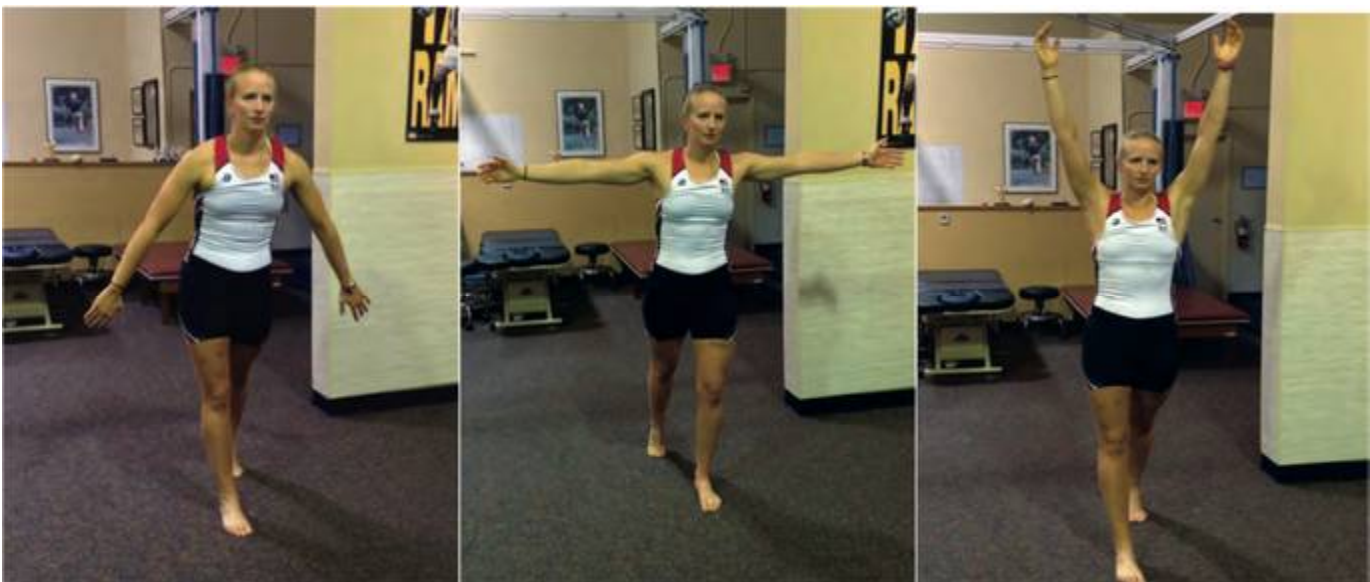
Dynamic stretching can be performed individually or as a team. About 20-30 feet of free area is needed. The exercises are:

The warm up should contain:

- 10-15 minutes of aerobic activities (run, bike or erg) to elevate the heart rate, increase blood circulation and increase body temperature.
- Follow with Dynamic Stretching. These exercises and movements increase muscle temperature and progressively move the muscles and joints through their full range of motion.

Jogging with the Arms – arm circles 2 x 30 feet

- Swing arms forward in large circles, jogging in one direction 20-30 feet
- Swing arms backward in large circles when returning in the opposite direction



Knee Hug Lunge – 2 x 30 feet

- Lift the knee and pull the knee with the arms towards the chest
- Release the leg and take a large step forward directly into a lunge /hip flexor stretch position
- Maintain good upper body posture and hold this position for 2-3 seconds
- Stand up and repeat the movement with the other leg
- Perform this exercise 2 x 30 feet



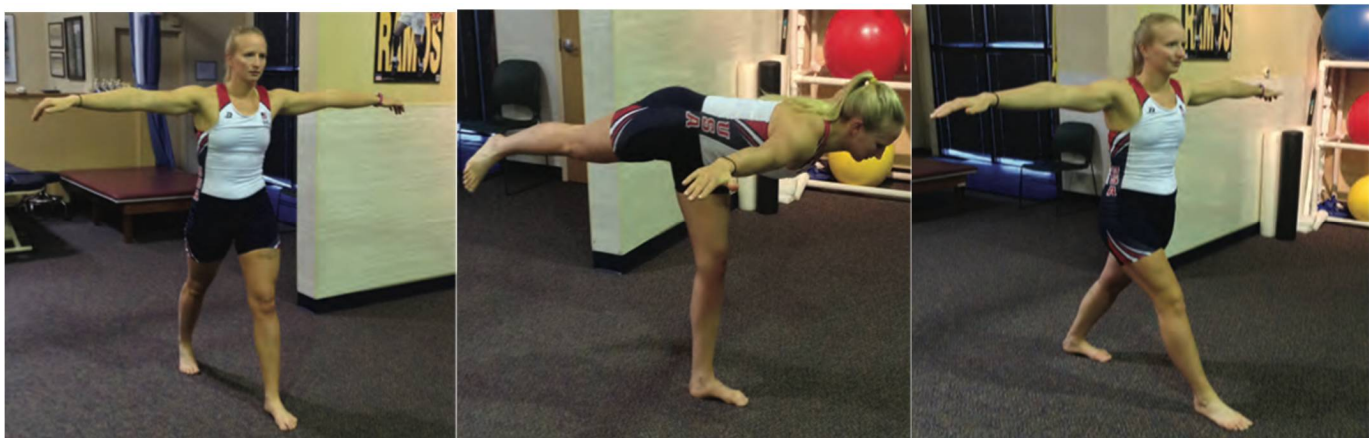
Inverted Hamstrings – 2 x 30 feet

Purpose:

- Improves strength in the legs and core
- Improves flexibility in the hamstrings
- Improves dynamic balance

Execution:

- Stand on one leg and bend forward at waist until a slight stretch is felt in the hamstrings of the leg on the ground
- Hold for 3 seconds, step forward with the back leg
- Repeat the exercise standing on the opposite leg
- Perform this exercise 2 x 30 feet



Backwards Lunge with a Twist – 2 x 30 feet

Purpose:

- Improve flexibility in the hip flexor muscles
- Improve dynamic balance

Execution:

- Take a large step backwards with the left leg into a lunge position
- Gently twist the torso to the right and reach for the left heel with the right hand
- Stand up, step backwards with the right leg and repeat to the opposite side
- Perform this exercise 2 x 30 feet



Alternating Leg Cradle – 2 x 30 feet

Purpose:

- Improves flexibility in the muscles of the groin and hips
- Improves dynamic balance

Execution:

- While standing on one leg, lift the opposite leg with the assistance of both hands, turn the knee outwards while lifting the ankle.
- While maintaining the cradled leg, lift the body up by raising onto the down toes.
- Release the leg, step forward, and repeat with the opposite leg.
- Perform this exercise 2 x 30 feet.



Straight Leg March – 2 x 30 feet

Purpose:

- Improves flexibility in the hamstrings, gluteal and lower back muscles.

Execution:

- Swing one leg forward until stretch is felt in the hamstrings.
- Try to touch the raised foot with the opposite hand, keeping the trunk neutral, holding the position for 2-3 seconds.
- Return the leg to the ground, contacting the front part of the foot.
- Repeat with the opposite leg.



Recommended Link

View Marc Nowak's, PT, warm-up and cool down dynamic exercises at www.sportsphysicaltherapy.com , services, rower's corner.