

## **Yoga for Endurance Athletes**

Many endurance athletes may be skeptical about adding yoga to their exercise regimen, figuring that in a week your training hours are already limited. Yet many athletes fail to recognize that running, cycling and swimming are repetitive motion sports that place an excessive amount of undue stress on specific muscle groups, bones, and joints. Yoga can be used as a cross training tool and as a means to correct the imbalances that sports create. When practiced regularly, yoga produces a balance of strength and flexibility in muscle groups, individual muscles and joints. It also brings the upper, lower, right and left sides of the body into equilibrium. This balance leads to optimum performance in any sport.

Another benefit of a regular yoga practice is the development of greater core strength and overall balance. Power and stability emanate from the core. Yoga's focus on the core helps build total body strength that in turn improves resistance to fatigue, and improves muscular endurance—two things crucial for excelling in endurance events. By increasing an athlete's strength, flexibility, balance and stamina, one can improve performance, lessen the risk of injury and experience a quicker recovery in their chosen sport.

Before poses are described it is important to go over some general guidelines.

### ***Breathing***

- Maintain awareness of the breath the entire time. Breathe in and out through the nose.
- Breathe slowly, completing each inhalation and exhalation. Do not hold the breath at any time.
- Mentally assign the breath a certain task in a posture (i.e. in a forward bend, inhale and pull the muscles up the legs, then exhale and elongate the spine with your exhalation).
- When the chest is compressed (forward bend or twist) it is natural to exhale with the movement.
- When the chest is expanded, an inhalation is appropriate. Follow your breath into the postures.

### ***Appropriate length of time to hold a posture***

- The sustained hold of any given posture may vary between 5 to 60 seconds. 60 seconds is approximately ten full breaths. One breath equals one inhalation and one exhalation.
- Try to maintain the same amount of time on each side of the body in any given posture unless one side is particularly tight in which case the hold can be longer on that side.
- Counting the number of breaths, rather than using a time piece, will allow you to "turn within" and be alert to the subtle effects of the posture on the body.
- Release the posture if you feel intense strain, especially in the knees or lower back.

### ***Appropriate number of workouts per week***

- Minimum 2 times per week / Maximum 5 times per week.
- If being used as a crosstraining tool then yoga can be alternated with another type of workout such as weight training, spinning, or your preferred sport. This may result in two or three workouts per week. Every body and each person's goals are unique - experiment with different schedules to find the perfect balance for you.

### ***Other Recommendations***

- As in other physical activity take the time to warm up. This facilitates deeper stretching. It also lessens the risk of injury.
- Focus on reaching your personal maximum point in a posture. You are reaping the benefits at whatever level you are able to do the posture. Be patient, don't expect to master the postures immediately. Enjoy the process of improvement.
- Practice on a non-slip surface.
- Wear comfortable non-restrictive clothing. Do not practice immediately after eating.
- Keep the neck, jaw and face soft and relaxed at all times.
- A general musculoskeletal explanation is given for each posture. Many of the internal and subtle benefits have been omitted from the text because they are too numerous to mention.

## Standing Forward Bend

### Instructions:

- Stand with feet parallel and shoulder distance apart Inhale and lengthen the spine upwards
- Slide your hands down the front of the legs, relax.
- Arms straight
- Shoulders away from the ears Flat back
- Chin down
- Lift the sit bones and lean forward Thighs contracted
- Relax the torso downward Legs firm and torso soft

**Benefit:** Stretches the muscles in the back of the legs, especially the hamstrings

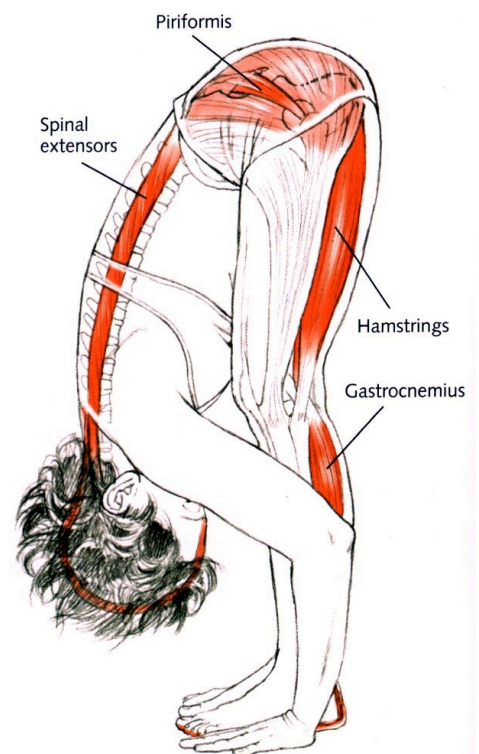
Loosens the muscles in the back, neck and shoulders

**Modification:** Bend knees if the hamstrings are tight or you experience lower back pain

**Breathing:** Deep hip flexion compresses the abdomen. This combined with gravity moves the center of the diaphragm cranially, so more freedom is needed in the back of the rib cage for the movement of the breath.

Obstacles: Tightness in hamstrings, spinal muscles, gluteals.

People with back injury, osteoporosis, or both should

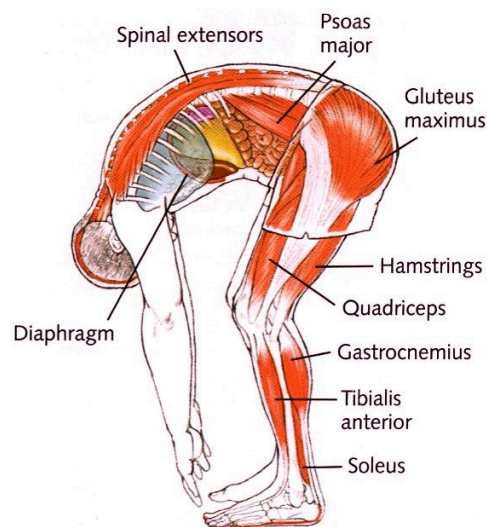


approach deep forward bending very cautiously and gradually.

People with high blood pressure (hypertension) should go into this pose gradually and remain in it only if their breathing is not strained. People with low blood pressure (hypotension) should come out of this pose very slowly, because they may become dizzy.

### IMPORTANT:

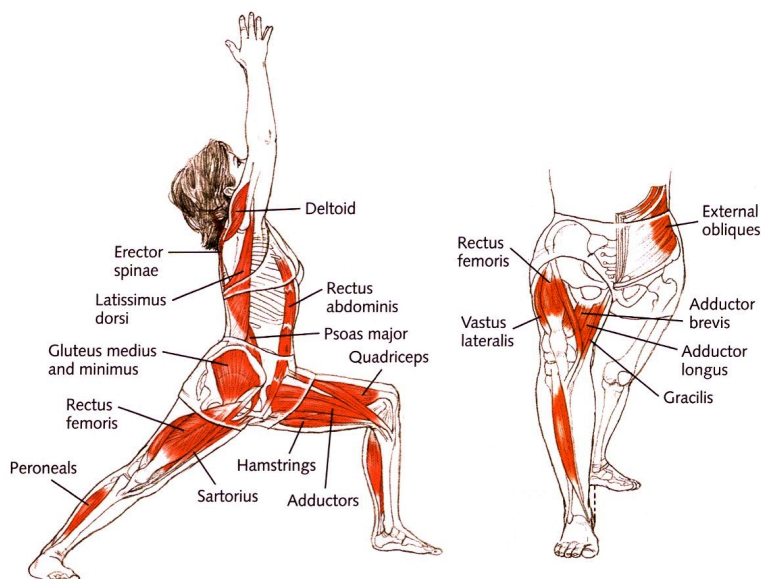
In this pose, gravity should do the work. People experiencing tightness in the back of the legs sometimes pull themselves down, which creates tightness and congestion in the rectus femoris and psoas. It's better to soften the knees to find some space in the hip joint, allowing the spine to release. Only then does lengthening the legs produce an even stretch along the entire back line of the body.



## Warrior I

### Instructions:

- Right foot in front
- Right knee bent until thigh is parallel to the floor Right knee directly over the right heel
- Left leg straight back
- Feet shoulder width apart laterally
- Back foot placed at a 45 degree angle facing forward with the weight on the outside of the left foot to emphasize the arch
- Left buttock contracted firmly
- Left hip aiming to the right knee
- Weight distributed evenly between both feet
- Reach upwards from the waist to the fingertips Arms overhead next to the ears
- Gaze up towards hands
- Repeat on other side



**Benefits:** Strengthens the feet and ankles, gluteus muscles, quads and musculature surrounding the knees

Stretches the hip flexors

**NOTES:** The shorter (from front to back) and wider (from side to side) stance of this basic warrior pose employs an easier action in the pelvis and a higher center of gravity,

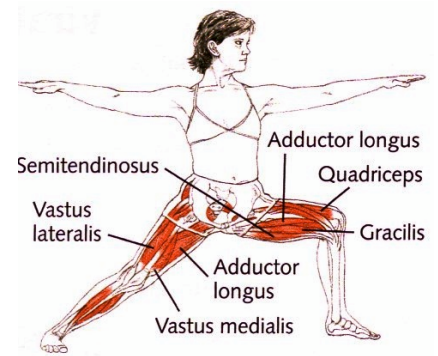
but it is generally an easier pose to balance in because of the wider base of support and the increased freedom of the hip joints.

## Warrior II

### Instructions:

- Right heel in line with the arch of the left foot Left foot turned in
- Weight on the outside of the left foot Right thigh parallel to the floor
- 90 degree angle at the right knee Pelvic tilt
- Spine straight up extending out through the top of the head
- Arms out at shoulder level Triceps contracted
- Arms reaching out from the midline of the body
- Left buttock tight
- Pull the lower abs into the navel
- Gaze out over the right shoulder
- Press the lumbar curve out of the spine
- Thighs roll out behind you
- Repeat on the other side

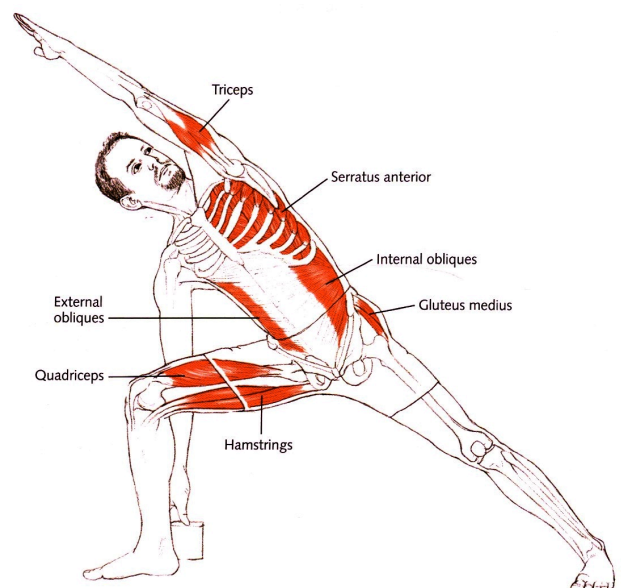
**Benefits:** This posture strengthens the legs, ankles, feet and arms . The groin and hips are stretched and strengthened.



## Extended Side Angle

### Instructions:

- Right heel in line with the arch of the left foot
- Turn your left foot in as far as possible with your weight on the outside edge of the foot emphasizing the arch
- Bend your right knee until the thigh is parallel
- Knee directly over the heel
- Arms out at shoulder level
- Palms down
- Reach with the right arm and place the elbow to the outside of the right knee or bend elbow and place on thigh.
- Left arm straight up arms angled overhead
- Lengthen along the right side of the torso
- Chin toward left shoulder as you gaze



toward ceiling

- One straight line along the left side of the body from the foot to the shoulder to the fingertips
- Repeat on the other side

**Benefits:** The feet, ankles, thighs, hips, lower back and buttocks are strengthened It nourishes the hip joint with the increase of blood flow to that area upon release of the posture

Increases flexibility of the groin and hip

## Triangle

### Instructions:

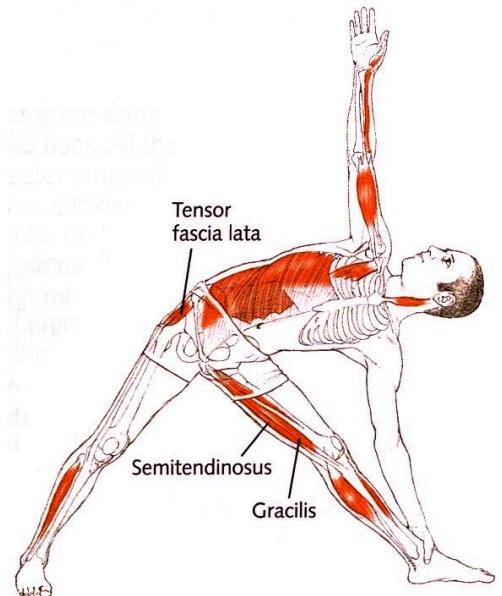
- Right heel in line with the arch of the left foot Left foot turned in
- Weight on the outside of the left foot Right leg straight
- Pelvic tilt
- Spine straight up extending out through the top of the head
- Arms out at shoulder level
- Reach right arm out from the midline of the body
- Right arm reaches down over right leg to right shin or ankle
- Left arm up Reach from fingertip to fingertip
- Left buttock tight
- Pull the lower abs into the navel
- Gaze up toward left hand
- Press the lumbar curve out of the spine
- Thighs roll out behind you
- Repeat on the other side

**Benefits:** This posture strengthens the legs, ankles, feet and arms . The groin and hips are stretched and strengthened.

**IMPORTANT NOTE:** Pain or sensation in the medial knee of the front leg can be from the gracilis and semitendinosus (hamstrings), which are especially lengthened in this position and can transfer strain to the joint capsule.

It is important to keep the back of the front leg active (hamstrings) to avoid knee hyperextension, which is easy to do with the weight of the body over the leg. Sensations from within the knee (or any joint) are important signals to stop what you're doing and adjust your action or position.

Pain in the lateral knee of the back leg can be from tightness in the muscles at the top of the iliotibial band (tensor fascia lata, gluteus medius, gluteus maximus); they need to both lengthen and engage. If the gluteus medius and maximus are tight and the leg can't adduct relative to the pelvis, the spine will flex laterally. Tightness at the top of the iliotibial band can also contribute to tightness in the back of the ankle.





## Wide Stance Forward Bend

### Instructions:

- Stand in a straddle position with the feet parallel Contract the muscles of the legs
- Bend forward from the hips
- Flat back
- Slide the hands down the outsides of the legs Clasp the ankles
- Adjust the width of your stance so the forehead is just above the floor As you become more flexible, the feet are closer together, so the torso has space to lengthen
- Weight on the outside edges of the feet Pull the chest through the legs Lengthen the torso
- Shoulders away from the ears
- You can slip the fingers under the outsides of the feet for a better grip

**Benefits:** Stretches the hamstrings and for some people, the inner thighs Stretches and strengthens the outsides of the ankles

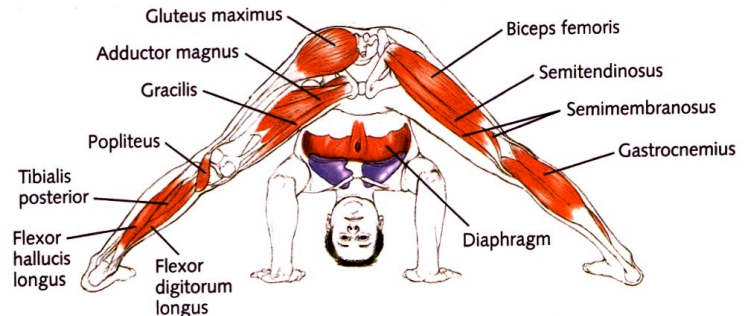
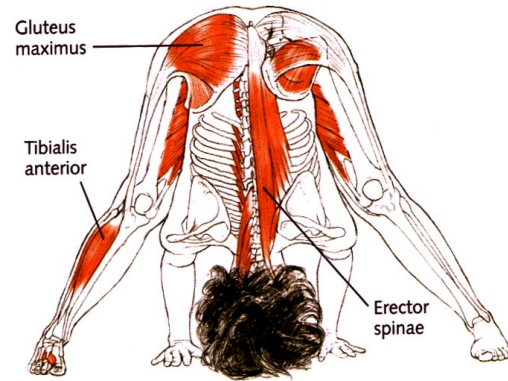
The inverted position of the torso increases blood flow to the head

### Modification

Slide the hands down to support on the thighs just above the knees

**Notes:** Wide-stance forward bend is probably the safest, most accessible inversion in all of yoga practice. The more firmly the legs can create support, while at the same time allowing the pelvis to freely rotate forward at the hip joints, the more relaxed the torso and breathing will be. This inversion provides mild traction and release to the spine, while reversing the usual action of the breath.

Hanging upside down, the diaphragm is pulled cranially by gravity, thus favoring the exhalation and the venous return from the lower body. While inhaling, the diaphragm pushes the weight of the abdominal organs caudally, against gravity, while at the same time mobilizing the costovertebral joints in the thoracic spine, which is being tractioned open. All these altered muscular actions can help normalize circulation in both muscles and organs that are constantly subjected to the usual stresses of upright weight bearing.



## Bridge Pose

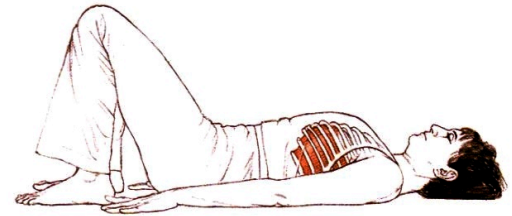
### Instructions:

- Lie on your back
- Bend the knees and bring the heels in close to the buttocks
- Feet parallel on the floor, shoulder width apart
- Pelvic tilt
- Raise the hips up
- Keep the buttocks contracted firmly
- Roll the upper body gently from side to side in order to bring the
- shoulder blades closely together
- Limit pressure in the neck and lower back
- Palms up
- Heels down, hips up
- Feel the stretch in the quads and hip flexors
- Upon descent, raise the arms up over the head, lift the heels, maintain pelvic tilt and lower down slowly
- Feel each vertebrae lower in succession to the floor
- When the buttocks finally lower to the floor, straighten the legs and relax

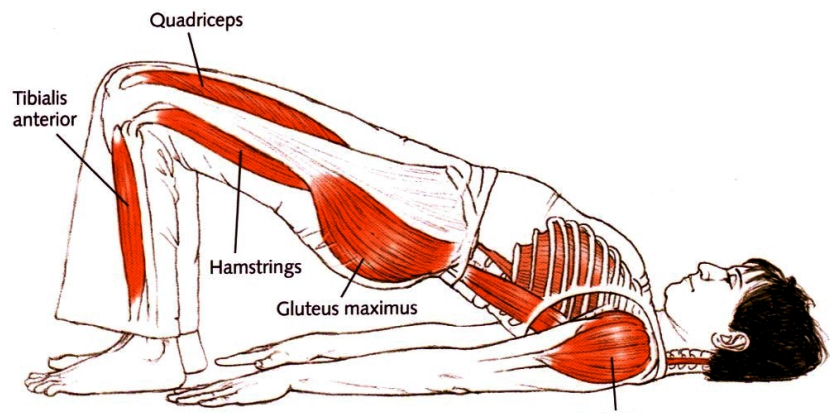
**Benefits:** Stretches and strengthens the quadriceps and hip flexors

Tones the buttocks

Stimulates the function of the thyroid



Exhale.



Inhale.

By doing the postures regularly you will open up your groin and increase the flexibility in your legs and hips. This will reduce the risk of getting problems with overuse injuries.

I hope these Yoga poses will help bring more success and enjoyment to your sport!

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## **Zen and the Art of Breathing**

If you have ever studied a Martial Art or Yoga you know that proper breathing is essential. It is interesting to note that breathing for sport is rarely mentioned other than in conjunction with sport psychology. I believe it is something worth thinking about.

In order to breathe properly for exercise you need to contract your diaphragm. Your diaphragm pushes downward, making your belly expand. This allows air to flow into the lower lobes of your lungs where more of the oxygen-starved blood is waiting. You may have noticed pictures of some cycling greats such as Indurain, LeMond or Lance where they actually look like they have beer-bellies. This is because the picture was taken while they were properly inhaling.

During inhalation, your shoulders and upper chest should be relatively calm. The diaphragm is a muscle, and can be trained. Singers have exceptional control of their diaphragms. The vocal acrobatics you hear from opera singers all stem from diaphragm control. Not that you need to sing Vivaldi while training, but we can all benefit from proper and controlled breathing.

Your nose is designed for breathing, and your mouth for eating. We all, myself included, breathe through our mouths way too often. The nose is lined with cilia (tiny hairs) and mucous membranes specifically designed for filtering and conditioning air on its way to the lungs. While you may need to breathe through your mouth during times of maximal exertion, you should strive to breathe comfortably through your nose the rest of the time. Nasal breathing has been shown to have a calming effect on the nervous system and promotes proper (diaphragmatic) breathing. Even athletes prone to nasal congestion can benefit from an emphasis on nasal breathing.

As an athlete you also need to train yourself to exhale entirely. By exhaling all of the oxygen-depleted air from your lungs you will naturally draw in more fresh air. If all of the air is not evacuated before each inhalation, the fresh incoming air is diluted with the depleted air still in your lungs. Try this: breathe in deeply, then exhale normally. At the end of the exhalation, contract your abdominal muscles slightly to force the remaining air out of your lungs. It is a lot! Now, notice how much more fresh air you can take in with your next breath.

Runners generally exhale on the same stride, right or left foot strike, consistently. Switch breathing is a well-known device to promote relaxation and relieve occasional side stitches. The idea is this: force yourself to exhale on the opposite foot strike than you usually do. It's simple, but oftentimes very effective. Cyclists can try a similar trick. While most of the time cyclist's breathing is detached from their cadence, occasionally, while climbing for example, you may find your breathing locked to your pedal stroke. If you become tense or develop a side stitch, the switch-breathing trick can be used to alleviate it.

Here are some exercises for you to try while you are exercising, or even while you are relaxing:



1. Nose Breathing: Try to breathe only through your nose. While training, it is easy to do in heart rate zones one and two, but more difficult as the intensity rises. Don't deprive yourself of the air you need, but don't give up too easily either. Try this for a few weeks while you are doing endurance workouts. The longer you stick with it, the more you realize the benefits.

2. Deep Breathing: Breathe in deeply through your nose, contracting your diaphragm and completely expanding your lungs. Keep your shoulders still and relaxed, and let your belly expand. No hyperventilating! Keep the breaths slow and through your nose.

3. Exhale: After each inhalation, practice exhaling completely by contracting your abdominal muscles at the end. At first this may feel like a two-part exhalation, the normal one followed by the last bit pushed out by your abdominal muscles. As you become more comfortable, it becomes one smooth breath. Combining this with the deep inhalation of the previous exercise gives you a full, deep, relaxing breath.

4. Before you give up on nasal breathing when the exercise intensity increases, try taking that deep breath in through your nose and exhale through your mouth.

The theory behind all this script about breathing, which is one of the most basic of automatic processes, goes back to the idea of efficiency. As athletes we are always searching for a way to improve our body's use of energy. Proper breathing is just one more piece of the puzzle.

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Additional breathing exercises:

**Ujjayi Pranayama** The victory or ocean sounding breath is focusing, grounding, and aids in concentration.

Ujjayi Pranayama is called the ocean sounding breath because you make an ocean sound by contracting the glottis with the inhalation and exhalation. This Pranayama is done through the nose, but it is helpful to begin practicing breathing through the mouth. To make the ocean sound, whisper the syllable "h," feeling the contraction in your throat. Keep this contraction engaged on the inhalation and exhalation. After a couple of breaths try to close the mouth, breathing through the nose while still making the ocean sound in your throat.





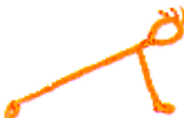

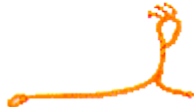





**Nadi Sodhana Pranayama**

Alternate nostril breathing is balancing, calming, anti-anxiety, and very relaxing.

Place the right hand in Vishnu Mudra (forefinger and middle finger bent towards the palm; thumb, ring, and pinkie in the air). To do one round: close off right nostril with the thumb and inhale into the left nostril; close left nostril with ring and pinkie fingers, open the right nostril and exhale through the right, then inhale into the right nostril; close the right nostril, open the left, and exhale through the left nostril. Continue, doing 5-20 rounds.

## SUN SALUTATIONS

The Sun Salutation is a series of 12 postures performed in a single, graceful flow. Each movement is coordinated with the breath. Often used as a warm up, the Sun Salutation builds strength and increases flexibility. A single round consists of two complete sequences, one for the right side of the body and the other for the left. On days when you think you have no time for yoga, try and do at least one or two rounds of the Sun Salutation. You'll feel the difference.

<b>1. Mountain Pose</b>  Begin by standing with feet about hip width apart, hands in prayer position. Take several deep breaths.	<b>2. Hands up</b>  On your next inhale, in one sweeping movement, raise your arms up overhead and gently arch back.	<b>3. Head to knees</b>  As you exhale, bend forward, bending the knees if necessary, and bring your hands to rest beside your feet.	<b>4. Lunge</b>  Inhale and step the right leg back
<b>5. Plank</b>  Exhale and step the left leg back into plank position. Hold the position and inhale.	<b>6. Stick</b>  Exhale and lower yourself as if coming down from a pushup.	<b>7. Upward Dog</b>  Inhale and use your arms to lift your torso, only as far as feels comfortable.	<b>8. Downward dog</b>  Exhale, lift from the hips and push back and up.
<b>9. Lunge</b>  Inhale and step the right foot forward.	<b>10. Head to knees</b>  Exhale, bring the left foot forward and step into head-to-knee position.	<b>11. Hands up</b>  Inhale and rise slowly while keeping arms extended.	<b>12. Mountain</b>  Exhale, and in a slow, sweeping motion, lower your arms bringing your hands up into prayer position. Repeat sequence, stepping with the left leg.