



Body Alignment Exercise for Cyclists

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I. Alignment Exercise

a. Introduction (10 min)

- i. Why should you care?**
- ii. What does proper alignment look like?**
 - i. When things go wrong**
 - ii. Getting it right again**
- ii. Dispelling posture myths**

b. Exercises

- 1. Before Tests (5 min)**
 - a. Center of Gravity Test**
 - b. Wall Test**
 - c. Hang Test**
- 2. Alignment Exercise**
 - a. Follow me through several exercises that will change your resting posture (30 min)**
- 3. After Tests (5 min)**
 - We will repeat the before tests to experience any change in resting alignment.**

II. Theory (10 min)

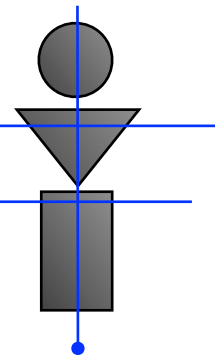
- a. Stimulate primary hip flexors to initiate movement**
- b. Encourage pelvic stability**
 - i. Stable joints = flexible joints**
 - ii. Reciprocal inhibition**

III. Short Practical Program for Cycling Classes (30 min)

- a. The participants will receive photos and descriptions of the following exercises. (We will go over these exercises so that they can teach them with confidence pre or post workout.)**
 - i. The Standing Quad Stretch**
 - ii. The Frisk**
 - iii. The Figure 4 Twist**
 - iv. Upper Spinal Twist**

The Consequences of Forward Head Posture

- Long term forward neck posture leads to **“long term muscle strain, disc herniations and pinched nerves”** (*Mayo Clinic Health Letter*, March 2000)
- FHP has been shown to flatten the normal neck curve, **resulting in disc compression, damage and early arthritis** (Roentgenographic findings of the cervical spine in asymptomatic people, *Spine*, 1986;6:591-694)
- In regard to respiratory dysfunction in chronic neck pain patients, a recent study “demonstrated a strong association between an increased forward head posture and **decreased respiratory muscle strength in neck patients**” (*Cephalgia*, February 2009)
- **“For every inch of forward head posture, it can increase the weight of the head on the spine by an additional 10 pounds”** (Kapandji, *Physiology of the Joints, Volume 3*)
- “Loss of the cervical curve stretches the spinal cord 5-7 cm and causes disease”. (Dr. Alf Breig, neurosurgeon and Nobel Prize recipient)
- “90% of the stimulation and nutrition to the brain is generated by the movement of the spine,” says Dr. Roger Sperry, Nobel Prize recipient for brain research. Dr. Sperry demonstrated that **90 percent of the energy output of the brain is used in relating the physical body to gravity. Only 10 percent has to do with thinking, metabolism, and healing, so when you have forward head posture, your brain will rob energy from your thinking, metabolism and immune function to deal with abnormal gravity/posture relationships and processing.**
- According to Rene Cailliet, MD, director of the Department of Physical Medicine and Rehabilitation at the University of Southern California, forward head posture (FHP) can add up to 30 pounds of abnormal leverage on the cervical spine. This can pull the entire spine out of alignment. FHP results in loss of vital capacity of the lungs by as much as 30%. This shortness of breath can lead to heart and blood vascular disease. The entire gastrointestinal system is affected; particularly the large intestine. Loss of good bowel peristaltic function and evacuation is a common effect of FHP. **It causes an increase in discomfort and pain because proprioceptive signals from the first four cervical vertebrae are a major source of the stimuli which create the body’s pain controlling chemicals (endorphins).** With inadequate endorphin production, many otherwise non-painful sensations are experienced as pain. **FHP dramatically reduces endorphin production.**



Start by testing where you are with these functional alignment tests.



The Center of Gravity Test:

Notice where your weight is distributed in your feet.

1. Is it in the balls of your feet, or your heels?
2. Is it in the inside edge or the outside edge?
3. Is it heavier in one leg than the other?

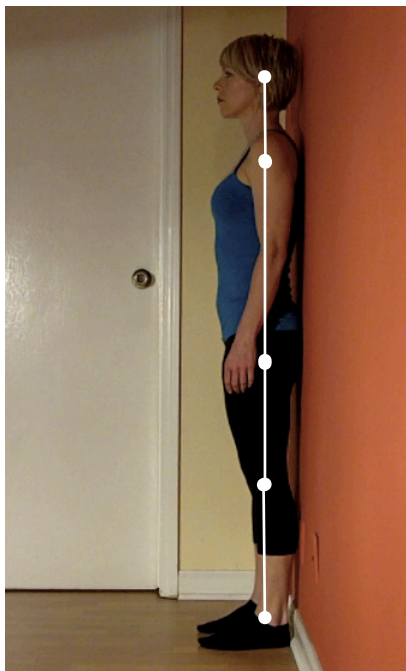
Your weight distribution indicates where your center of gravity is. It should feel balanced.

The Hip Hinge Test:

Engage your quads (the muscles on the front of your thighs) keep your knees straight and bend over, hinging at your hips.

1. How far can you go?
2. Do you feel pain?
3. Does it feel even from right to left?

The diminished ability to hinge in your hips contributes to back pain. You should be able to place your palms on the floor.

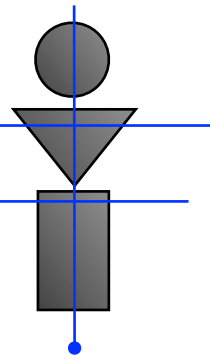


The Wall Test:

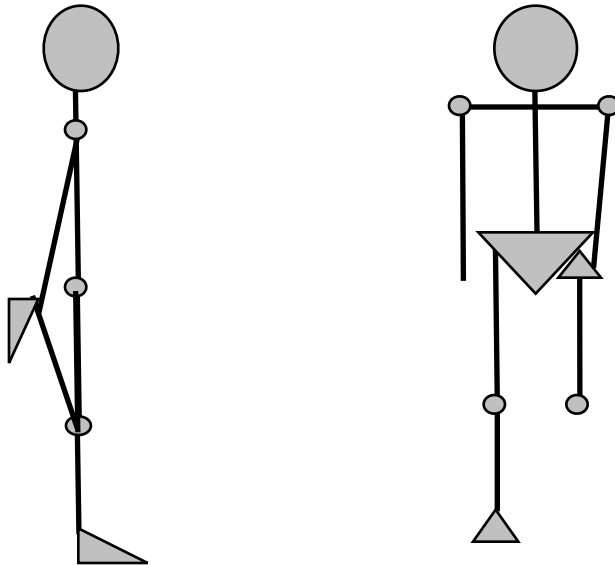
Stand close to a wall. Notice how much of your body touches the wall.

1. Does your head touch?
2. If not, how far away is it?
3. How much of your upper back is on the wall?
4. Does it feel even from right to left?

All your load bearing joints should be stacked over one another from the side view. The wall test give you a pretty good idea how well stacked these joints are. This is a great test for head forward posture. Head forward posture leads to neck, shoulder and back pain.

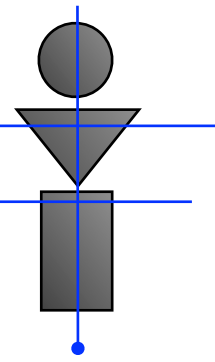


Standing Quad Stretch

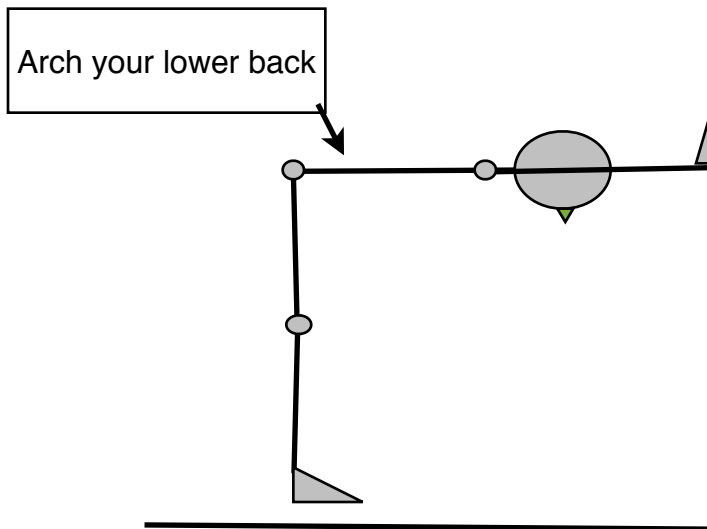


Instructions:

The purpose of this exercise:



The Thoracic Stretch or “The Frisk”



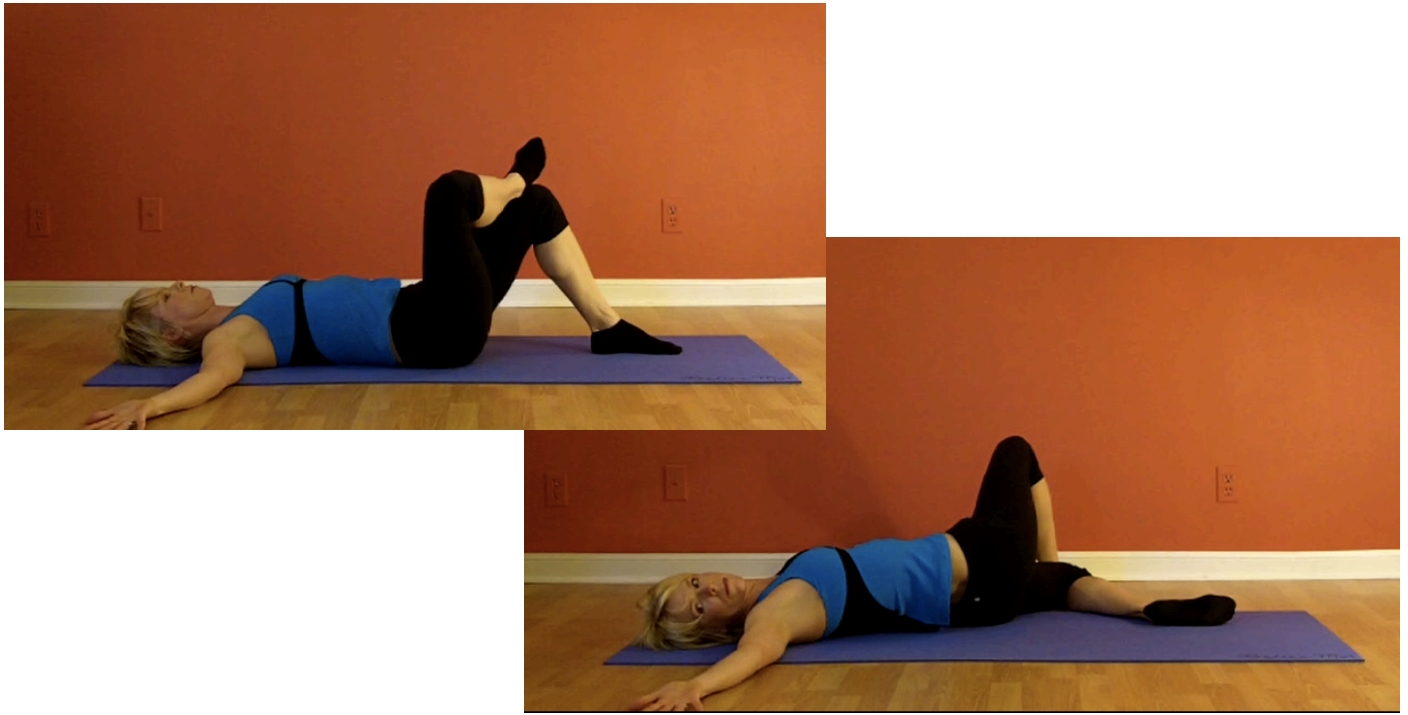
Instructions:

Stand facing a wall about 1 arm distance away. Place your hands on the wall at your shoulder height. Step back away from the wall as you bend forward at your hips, keeping your arms straight. You should end up with your heels directly under your hips. Place some of your weight into the balls of your feet and engage your quadriceps. Try to tip your pelvis down in front, creating an arch at the lowest point of your spine, like a sway back. Allow your chest and head to sink through your arms. Hold for 1 minute.

The purpose of this exercise:

To encourage lumbar and pelvic extension while the hips are in flexion (a function that is often very difficult among the population of people who spend the majority of their day sitting with a rounded forward spine). To encourage the primary hip flexors to initiate this position (the psoas major) and to encourage thoracic spine extension.

Figure Four Twist



Instructions:

Lie on your back with your knees bent, your feet and knees shoulder width apart. Place your arms straight out at shoulder height. Cross your right leg over your left so that your legs resemble a #4. Keep your hips level (your belt line should be straight across). Press your right knee away from your body and twist your lower body over to the left as you turn your head and look right. Maintain the pressure, pressing your right knee away from your body but keep your right foot firmly on the floor. You should feel this in the outside of your right hip and/or in your lower back. Hold this position for one minute on each side.

The purpose of this exercise: to encourage rotation of the pelvis and lumbar spine.

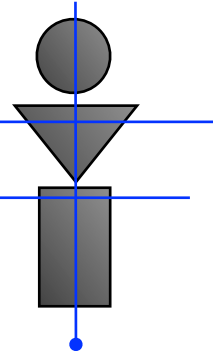
Upper Spinal Twist



Instructions:

Lie on your side as if you were just sitting in a chair that tipped over. You should have 90 degree angles at your knees, hips and shoulders. Your spine should be long and straight. Your knees and hips should be stacked on top of one another. You should begin this exercise feeling some weight on the outside edge of your shoulder, do not slide the shoulder on the floor shoulder forward. Reach the top arm back, twisting your torso away from your hips. Make sure you maintain a stacked position with your knees and hips. Hold this position for one minute on each side.

The purpose of this exercise: to encourage thoracic spine (mid back) extension and rotation, to encourage pelvic stability through the work of the torso rotators and to encourage the proper position of the shoulder blades on the upper back.



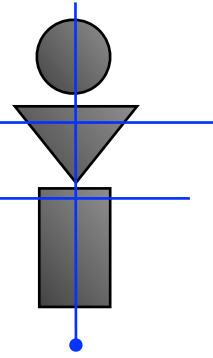
Cats & Dogs



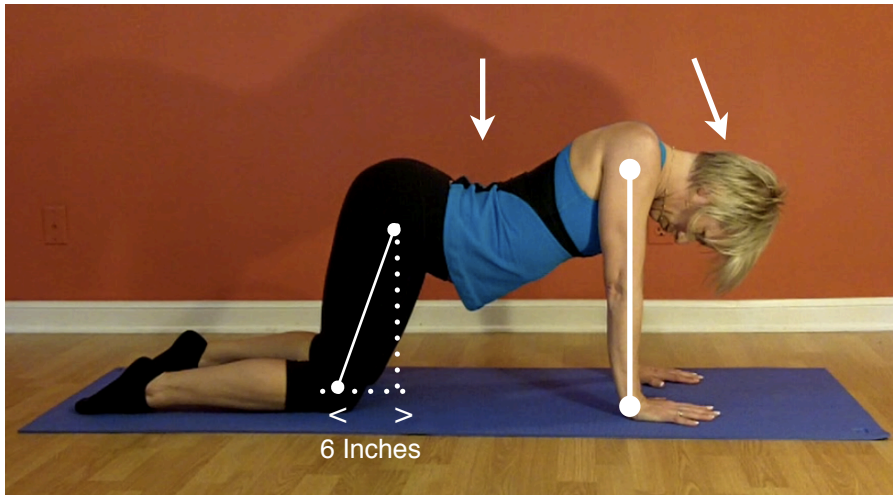
Instructions:

Place your hands directly under your shoulders and your knees directly under your hips. Tuck your tail bone, press the middle of your back up toward the ceiling, press your shoulder blades apart and tuck your chin as you exhale completely. Then, lift your tail bone, arch your back, squeeze your shoulder blades all the way in to your spine and look up as you inhale completely. Repeat 10 times.

The purpose of this exercise: to encourage coordination of the flexors and extensors of the shoulders, hips and spine. To encourage diaphragmatic breathing.



The Dragon



Instructions:

Place your hands directly under your shoulders and your knees directly under your hips. Move your hands forward from this position about 3 inches. Shift your weight forward until your shoulders are directly over your wrists and your hips are about 6 inches in front of your knees. Allow your chest to sink toward the floor and your shoulder blades to collapse in toward your spine. Lift your tail bone arching your lower back and allow your head to hang down. Hold this position for 2 min.

The purpose of this exercise: This exercise promotes lumbar (lower back) and thoracic (mid back) extension with bilateral (both sides at the same time) hip flexor demand. It also encourages proper position of shoulder blades on the upper back and releases the often short and tight upper traps and levator scapulae.



Recommended Reading:

1. "Pain-Free" by Pete Egoscue
2. "The Pain Free Program" by Anthony Carey
3. "8 Steps to a Pain-Free Back" by Esther Gokhale
4. "Posture Alignment, The Missing Link in Health and Fitness" by Paul D'Arezzo M.D.
5. "The Egoscue Method of Health Through Motion" by Pete Egoscue