

Preventing Back Pain

Core Exercises for Skydivers by Mike Semanoff

photos of **Holly Semanoff** by **Mike Semanoff**

Check with your doctor before starting any new exercise program. If you have any questions about the exercises contained in this article, consult with a local certified professional.

It's realistic for jumpers to think of their equipment as the most important part of the skydive. However, until someone gets injured, he often takes for granted that his body is what allows him to experience skydiving in the first place. The most important muscles for skydiving are the core group. Core muscles protect the spine and are at the center of all movement in freefall. When the core gets destabilized due to tight or weak muscle groups, we become susceptible to back pain, injury and limited freefall agility. The good news is that there are simple exercises and stretches that will help to ensure the stability of this important muscle group. Maintaining the body is just as important as maintaining gear when it comes to enjoying a long, pain-free skydiving career.

Many of us find ourselves in a seated position for long periods of time, supported by nice, comfortable chairs. Frequently sitting in a chair for long periods reduces the body's need to support its own spine, and the spine no longer stabilizes itself. This seated position also puts the hip flexor muscles (the muscles that move the thigh toward the abdomen) in a shortened position, leading to a tight muscle group that pulls and tilts the hips forward. This leaves the back in an unnatural and unstable position. Most importantly, having tight hip flexors reduces our ability to hit our standard freefall-arched position and can place strain on our lower lumbar region.

Shortened and Weak Muscles Cause Back Pain

Shortened muscles can throw the spine out of alignment and cause back pain. Tight back, gluteal (buttocks), hamstring (back-of-thigh) or quadriceps (front-of-thigh) muscles can affect the alignment of the spine. Stretching these muscles increases the mobility of the hips and allow the spine to reside in its natural position. The following exercises are designed with the typical skydiver in mind; they are quick, easy to do at the DZ and performing them requires no equipment.

When exercising, it is a good idea to start with strength exercises; doing so warms up the muscles for a more effective stretch later in the workout. All of these exercises can be safely done every day, but doing them two to three days a week will be effective. The muscle groups that these exercises target are posture muscles and naturally have a lot of endurance, so hold each position for at least 20 to 30 seconds or longer. Unless otherwise specified, do each exercise once. These exercises won't give you a "six pack" but they are effective at stabilizing, providing protection and adding mobility to the spine.

STRENGTHENING EXERCISES

Hand and Knee Balance

Opposite arm and leg extensions are balance and stabilization exercises that strengthen the muscles running down the sides of the spine, back of shoulders and buttocks.



Begin on all fours, with your hands directly under your shoulders and your knees directly under your hips. Keep your back flat and buttocks and abdomen tight. Lift one arm up and forward until it is parallel with your back. With that arm extended, lift the opposite leg in the same manner. Keep your face down, and your head aligned with your spine. Hold this position for 20 to 30 seconds. Repeat with the opposite arm and leg.

Plank and Side Plank

This exercise for the back and abdomen strengthens your obliques (side abdominal muscles) as well as the arms and legs.



For the plank, lie on your stomach and place your elbows and forearms on the floor. Raise yourself on your toes and elbows while keeping your back and legs straight (like a plank). Tighten your abs with your feet, knees, hips, shoulders and head aligned.



To perform a side plank, place your right forearm and right foot on the floor. Hold this position for 20 to 30 seconds, then switch sides. If this exercise is too difficult, balance on your knees instead of your toes.

Reverse Crunch

This is an exercise which tightens your lower abdomen.



Lie flat on your back, with your feet off the ground and your knees bent at about 90 degrees. Place your hands under your buttocks for support, and make sure your lower back remains flat on the floor. Lift your buttocks a few inches straight toward the ceiling. Try to hold this for a moment before lowering yourself back down. Do 10 to 15 repetitions of this exercise.

Freefall

This is an exercise for the back.



Lie flat on your stomach in a neutral freefall position. Raise your chest and knees off the ground in an arched freefall position for five to 10 seconds before relaxing; repeat this eight to 10 times.

The Spine Roll Up

This is designed to strengthen several core muscle groups.



Lie flat on your back, bend your knees at a 90-degree angle and keep your feet flat on the floor. Tighten your abs. Raise your buttocks off of the floor by lifting one vertebra at a time until your shoulder and knees are in a straight line. Hold for a count of five. Slowly lower your buttocks one vertebra at a time to the floor. Repeat 10 times.

STRETCHING EXERCISES

Hip Flexor and Quadriceps Stretches



Place your left knee on the ground; roll your hips forward until you feel your hip flexors stretch. Hold for 20 seconds. Then, grab the ankle of the leg bent behind you and gently pull your heel toward your buttocks until you feel a gentle pull on the front of your thigh; hold for 15 to 20 seconds. Switch sides.

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Piriformis (Muscle Beneath the Gluteals) Stretch



Sit on the floor and place your right foot on the ground with the knee at a 90 degree angle, then place your left ankle just above the knee on your right leg and lean forward. Hold for 30 seconds and then repeat on the other side.

Gluteals (Buttocks) Stretch



Sit on your rear, pull your right foot under your left gluteal muscle, place your left foot next to your right knee, and hug your left knee. Hold for 15 to 20 seconds and then repeat on the other side.

One thing to keep in mind when training your abs and core muscles is to work all of your muscles equally. Think of your spine as being like the mast of a sailboat held in place by ropes. If you tighten up one set of ropes more than another, the mast will be forced in one direction, lose structural integrity and throw off the balance of the whole ship. The exercises presented in this article are a simple and effective way to create stability and mobility for your spine. The protection which results from these exercises can add many pain-free years to your skydiving career and give you more control of your body in freefall. Take the time to give your body the preventative maintenance it deserves, and it will keep you in the sky soaring with the eagles. ♦

About the Author

Mike Semanoff, D-25385, is a Natural Bodybuilding Champion who is certified as a trainer by the National Academy of Sports Medicine, the International Sports Sciences Association and the National College of Exercise Professionals. He is a tandem instructor who has more than 400 tandem skydives. His website is www.mikesemanoff.com.



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Tips for Tandem Instructors



Tandem instructors need to pay particular attention to the stability of their core. Every time the tandem instructor tightens up the lateral straps on a student, he places unnatural strain on the lower lumbar region of his spine. When a tandem instructor tightens the lateral straps, he should pull his lower abs in toward his spine and tighten the core muscles, which will help to stabilize and protect his spine. Instructors who are conscious of this during their pre-jump procedures will greatly reduce the risk of developing back pain later in life.