

# Side Stitches

Most of us experience them at one time or another. That sharp twinge of pain just below the rib cage usually on the right. It is particularly common in runners and has been known to slow some down to a walk until the pain subsides.

Up until recently there was no clear explanation for the cause of this annoying cramp, also called exercise related transient abdominal pain (ETAP). Now researchers believe that the side stitch is caused by stretching the ligaments that extend from the diaphragm to the internal organs, particularly the liver. The jarring motion of running while breathing in and out stretches these ligaments. Runners tend to exhale every two or four steps. Most people exhale as the left foot hits the ground, but some people exhale when the right foot hits the ground. It is the later group who seem more prone to get side stitches.

Exhaling when the right foot hits the ground causes greater forces on the liver (which is on the right side just below the rib cage). So just as the liver is dropping down the diaphragm raises for the exhalation. It is believed this repeated stretching leads to spasms in the diaphragm.

## Stopping a Side Stitch

**To stop a side stitch when running, stop running and place your hand into the right side of your belly and push up, lifting the liver slightly. Inhale and exhale evenly as you push up.**

## **Preventing a Side Stitch**

To prevent a side stitch, take even, deep breaths while running. Shallow breathing tends to increase the risk of cramping because the diaphragm is always slightly raised and never lowers far enough to allow the ligaments to relax. When this happens the diaphragm becomes stressed and a spasm or "stitch" is more likely.

Some other ways to alleviate the pain of a side stitch include:

- Time your eating. Having food in your stomach during a workout may increase cramping by creating more force on the ligaments (avoid eating one to two hours before a workout)
- Stretching may prevent or relieve a cramp. Raise your right arm straight up and lean toward the left. Hold for 30 seconds, release, then stretch the other side.
- Slow down your pace until pain lessens.
- Breathe deep to stretch the diaphragm.
- Drink before exercise; dehydration can increase muscle cramps.
- Massage or press on the area with pain. Bend forward to stretch the diaphragm and ease the pain.
- \* If you continue to experience pain, see your doctor.

Source: Morton DP, Callister R. [Factors influencing exercise-related transient abdominal pain.](#)<sup>1</sup> Medicine and Science in Sports and Exercise. 2002 May.

# Side Stitch: Reasons and Solutions

By Dr. Hamid Sadri

Many athletes, especially runners, are all too familiar with the pain that sometimes appears around the lower rib cage or side of the abdomen during an otherwise perfectly fine bout of exercise. Yes, the dreaded "side-stitch" otherwise known as "Exercise-Related Transient Abdominal Pain" (ETAP). Even though ETAP can occur during any type of exercise, reported statistics have shown it to be more common with runners and other exercise activities that involve an up-and-down (running, horseback riding) and to a lesser extent, rotational motions (swimming). Sports that do not involve these particular movement patterns such as cycling or rowing have been much less likely to cause these symptoms.

To date, there is no exact scientific evidence proving how or why this phenomenon occurs. However, there are a multitude of theories and suggestions that seem to hold some validity and offer a reasonable explanation for this

condition. Accordingly, some recommendations are offered, which may help ease the symptoms related to ETAP. Currently there are five theories that considered to be the possible cause of ETAP:

A. Lower Back Hyperextension (excessive arching) During Downhill Running – This causes excessive pressure on the spine and can lead to pain.

B. Peritoneal Ligament(s) Stress - these are ligaments that help attach the internal organs and hold them in their respective positions. The theory is that some of these ligaments get stretched during exercise and cause pain.

C. Parietal Peritoneum Irritation – this is the soft tissue lining of the abdominal wall and the pelvic cavity. It also surrounds most of the internal organs located in the abdomen. It is proposed that exercise may cause friction between these layers of tissue and result in pain. An example is exercising on a full stomach (increased weight/volume = increased tissue friction).

D. Postural/Spinal Deviations – There are a group of spinal nerves that supply the torso. It is proposed that spinal deviations (increased curvatures, scoliosis, etc) can result in irritation to these nerves, or possibly the joints of those affected vertebrae, which will lead to pain.

E. Diaphragmatic Ischemia – The theory (no longer widely accepted) is that as the blood is diverted to the skeletal muscles while exercising, it reduces the flow of blood to the diaphragm, which results in pain and cramping.

Regardless of the cause, ETPA can dramatically affect an athlete's performance, decreasing their ability to train or compete at their best. There are several suggestions that may help the athlete cope with this condition or possibly resolve it altogether:

1. Promote Diaphragmatic (belly) Breathing: Lie on your back and place a phone book, a small bag of rice, or any other like object that would safely provide for some resistance once placed on the abdomen. Try to inhale by pushing the belly out and exhale by relaxing the abdominal muscles, allowing the weight of the object to help push the air out of your lungs. This should help train you to breath properly by using your diaphragm instead of your chest muscles. Practice this regularly as it takes time to develop new habits.

2. Change Your Stride-Breathing Patterns: Most athletes seem to follow a two-to-one stride-breathing pattern. This means that they take one full breath for every two full strides. In doing so, they tend to subconsciously time their exhalation with either the right or the left leg hitting the ground. Changing the exhalation timing from one side to another may help resolve the pain caused by ETPA.

3. Strengthen Your Core: Improved core strength has shown to help reduce the occurrence of ETPA.

4. Correct Spinal Dysfunction: A visit to your favorite chiropractor or physical therapist may help to detect and correct many spinal dysfunctions.

5. Improve/Change Eating and Drinking Habits: Avoid heavy meals before exercise, especially foods that are high in protein. Hydrate by “sipping” rather than “chugging” your fluids. When hydrating during physical activity, avoid drinks that have a very high concentration of acids, sugars (carbs) or salts as they result in a reduction of gastric emptying.

6. Continue Training: Persistence does pay off! It has been shown that ETPA tends to decrease as one continues to train.

7. See Your Family Physician: If all else fails, visit your doctor and have them check to rule out other possible health conditions that may require medical attention.

[Dr. Sadri](#) and his team at First Choice Healthcare have been fanatically caring for our athletes at their Decatur location for several years, and most recently, at The Sport Factory's new Roswell location. He can be reached through his practice at [First Choice Healthcare](#).