

# Newsletter

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## Dragon Boating and Hip Pain

[www.paddlesup.ca](http://www.paddlesup.ca)

When I first started paddling in a dragonboat, I was probably the typical "new" dragonboater. I'd paddled a canoe for my whole life but not in a competitive setting. Like most people, at first I saw paddling primarily as an upper body activity - so how does paddling contribute to hip pain?

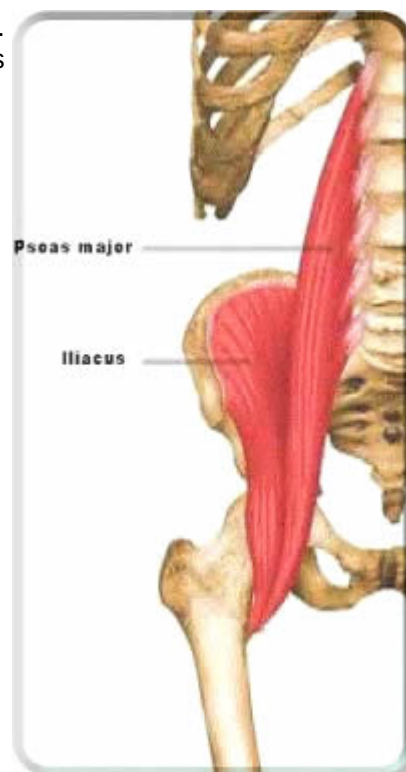
I've no doubt that hip pain is common to paddlers; a quick informal survey of almost any team will uncover paddlers who experience this. What creates this problem? Let's dive in and I'll try to make it clear to you. We'll start with an overview of the anatomy in question, look at the effect on these structures while paddling and try to offer some advice on dealing with or better yet preventing the problem.

Anatomically speaking, we must concern ourselves with a number of structures. Among the muscles involved, the primary culprit is the hip flexor (also known as the *psaos* muscle - pronounced *so-az*). This powerful muscle attaches to the lower back (a second portion arises from the brim of the pelvis) and then inserts into the upper leg. You can feel this powerful muscle on your own body (come on, it'll be fun!) by first finding the sharp bony prominence at the front of the pelvis called the ASIS. From there go toward your middle at a 45 degree angle downward; push gently in and you will be over top of the hip flexor. If you flex your hip you can feel the muscle contract and move. It's primary function, obviously, is to flex the hip, hence it's name. The muscle can also be used to pull the trunk forward when the lower body is stabilized. Right about now most of you should be recognizing the involvement of this muscle to your paddling stroke. Most teams accentuate the reach of their stroke by flexing the trunk forward. Many people think that it is the abdominal muscles that perform this motion, but if the lower body is stabilized, the hip flexor will be performing most of the work.

There are a few concerns here. First, a quick, powerful forward motion of the trunk puts the lower back under stress. Remember, the hip flexor is primarily designed (or more accurately has evolved) to flex the hip, not the trunk. Your leg weighs a fraction of what the upper body does, so the muscle is working overtime and at a high intensity while paddling. What suffers are the attachments of the muscle at the spine and at the upper leg. If we add the factor of the trunk rotation to add reach to the recovery portion of your stroke, the stress on the muscle becomes even greater because primarily only the outside hip is affected.

The second problem is that the forward trunk motion performed by the hip flexor ends with the catch. The catch at the end of the forward flexion can be compared to the braking the muscles at the front of the legs perform when running downhill. The muscle lengthens at the same time that it is contracting. This is called an eccentric contraction; all of you runners out there know that running downhill causes more muscle soreness.

As the hip flexor pulls on its attachments to the bones, it pulls the lower back into exaggerated extension. This creates lower back joint restrictions and stiffness (I'm sure this rings a bell with many of you). To compensate for the reduced range of motion in the spine our bodies call on the sacroiliac (SI) joint to compensate. As a result the SI joint is taken to the end of its range of motion and it gets irritated and can lock at the end of this range. Lining the inside of the SI joint



is the hip flexor muscle. It is common to see hip flexor reactions to SI joint problems - can you see the vicious circle developing, as the overworked hip flexor puts stress on the low back which irritates the SI joint which causes a reactive contracture in the hip flexor? We're back where we started and the whole cycle starts again.

The next component to the whole scenario is an area of the spine called the thoraco-lumbar (T/L) junction. This part of the spine is located between the bottom of the rib cage and the upper limit of the low back. Remember the trunk rotation that we all try to achieve to give the extra reach and crucial positive angle to our stroke? Again it is accomplished while keeping the lower body stabilized. The T/L junction is susceptible to rotary stress because of its particular anatomy. Above it, the trunk is resistant to rotation because of the rib cage; below it, rotation is limited by the orientation of the small joints at the back of the spine (called facet joints). This leaves the T/L junction to take the brunt of the rotary stress. If this is done over and over while applying a ballistic motion and ending with a sudden load (like we do when we paddle), the joint may become dysfunctional and/or irritated. Because joint dysfunction (often called subluxation by chiropractors) can lead to nerve irritation, it's important to consider where the nerves from this area go. One of the muscles supplied by these nerves is the hip flexor. Fancy that - I'll bet you were wondering where this was going. The other thing that T/L dysfunction causes is low back stiffness and pain, again because of where the nerves travel (in this instance the cluneal nerve). What is important to understand is that none of these potential problems exists in a vacuum; they all contribute and are affected by each other.

If we put all the factors together, you can see that once again the paddling stroke in dragon boat presents us with some challenges. We've seen the level of competition taken to new extremes this season. As teams take their training to a higher level we are more likely to see these problems arise, especially in the lapsed athlete who is revisiting his or her glory days in dragon boat.

**What can you do to prevent your hip from becoming a limiting factor in your performance? Follow these tips to reduce the likelihood of this happening:**

- 1.** Ensure that your dryland flexibility exercises (done at least everyday, not only before paddling) include stretches for your hip flexor and mobilizing routines for your T/L junction. These are the last stretches that I do right before hopping in the boat. There are many appropriate stretches for the hip flexor, my advice is to hold the stretch at a gentle tension slowly increasing the stretch over a period of at least 30 seconds. A simple T/L mobilization is to bring your knees to your chest while lying on your back; hold your knees with one arm and slowly pull your knees to that side. Your other arm is held flat on the floor or ground while you look in that direction. Then reverse the whole description to mobilize the other side. Photographs of both of these exercises are posted on this site under "stretches for legs and lower back".
- 2.** While paddling always remember to come to an upright position at the end of your stroke. This is most difficult as you start to tire. Many paddlers end up stuck in a forward-flexed posture that really causes the psoas to bind up. Your stroke will be more efficient as well so it'll keep your coach happy.
- 3.** Seek appropriate help if the hip becomes painful. These problems can be unbelievably stubborn because of all the factors involved. A combination of spinal adjustment to deal with the joint dysfunction and soft tissue therapy (Active Release Therapy is particularly effective) to deal with the stubborn muscles and tendons will provide relief. Personally, I can't imagine paddling without regular chiropractic care. Our team (Team Chiropractic) is lucky to have built-in team chiropractors but most festivals have chiropractic tents with free services. Most race weekends we provide adjustments and treatment to many paddlers both on our team and for our competitors as well. Just make sure you don't get adjusted by one of our non-chiro team members - they can be such jokers!