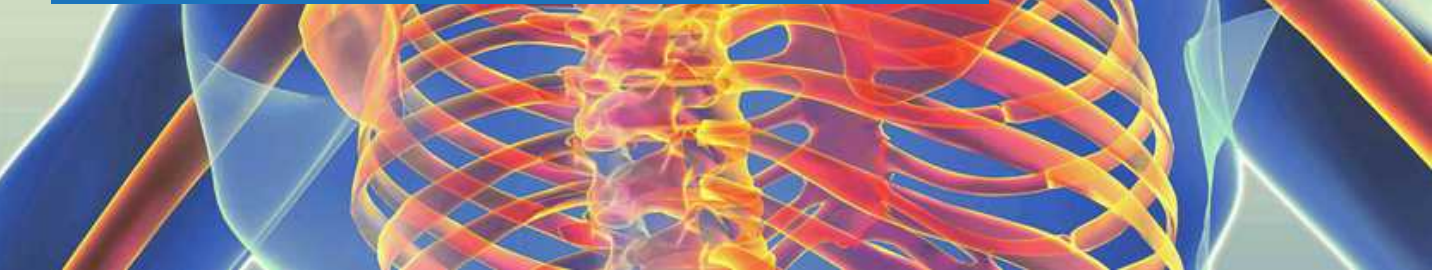


# INJURY PREVENTION FOR DRAGON BOATERS

By : Barry Mc Veigh



## CORRECTING YOUR PADDLING MOTION

### Introduction

Dragon boating requires co-ordination, flexibility, power, timing, good anaerobic capacity, aerobic endurance, a high level of technical competency and teamwork. Different teams will opt for different techniques, but all of these will share certain traits including (i) a forward stroke which involves reaching in front using a twisting motion to one side, (ii) spearing the paddle into the water in front of the dragon boater, then (iii) using an untwisting motion to pull the paddle powerfully back to the hip in order to propel the boat forward.

The paddling motion can place high loads on various joints of the body, in particular the lower back and the shoulder of the inner arm, thus making these areas vulnerable to overuse injury. The aim of this article is to provide tips that will lower the risk of those injuries which dragon boaters are most likely to suffer.

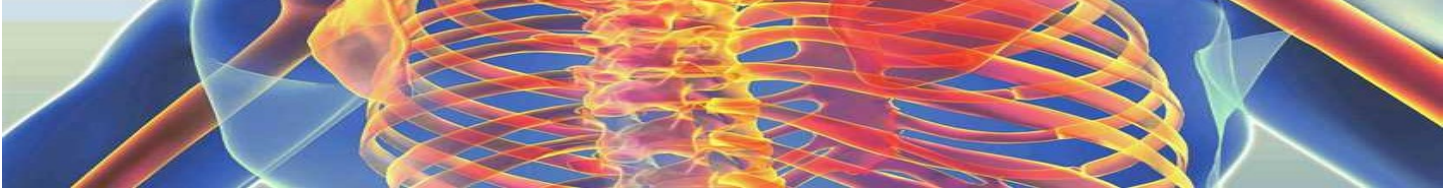
### Lower Back Flexion, or Bending Forward

Most of a dragon boater's power should come from their trunk and legs. The resulting movement places high

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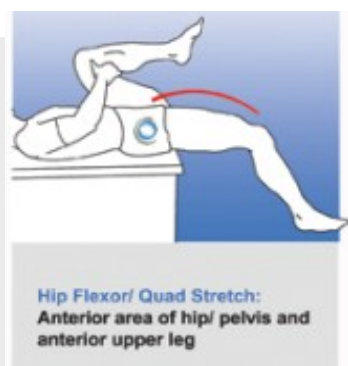
Dragon Boat Races – Photo by Wong Ching



loads on the lower back making this area of the body vulnerable to injury. To minimise the risk of lower back pain, dragon boaters should focus on bending forward from the hips as well as the trunk. Whilst some movement of the lower back during paddling is inevitable, the incorporation of movement from the hips will minimise such lower back movement and reduce the potential for strain injury in this area. Dragon boaters should therefore aim to move their pelvis forward and backwards during the paddling motion. Moving from the hips also makes it easier for the dragon boater to reach forward and increases their stroke length.

### Hip Flexors

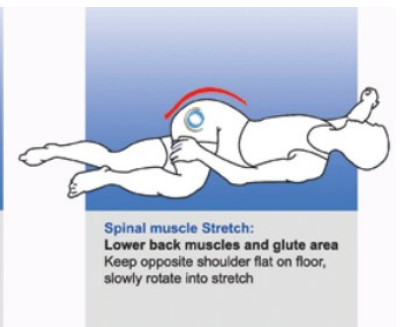
As is the case for participants in most “seated” sports, dragon boaters may be more susceptible to developing tight hip flexors (i.e. the muscles at the front of the hips). This is because the hip flexor muscles are working in a shortened position for a prolonged length of time and never elongate completely during the paddling action. This is often compounded by the fact that many normal day-to-day activities involve prolonged sitting, such as working at a computer, driving, reading and watching television. Tight hip flexors can pull the front of the pelvis forward, resulting in an increased arch in the lower back, which places greater strain on this area. Stretching the hip flexors after dragon boating is important in order to avoid tightness and maintain good postural mechanics in the pelvis and lower back. For guidance, see stretches below;



### Trunk Rotation

Good trunk rotation is a vital element of efficient dragon boating technique. In addition, poor trunk rotation can lead to excessive strain being placed on the lower back, neck and shoulder joints, thus increasing the risk of injury. A lack of movement in the trunk may be the result of tightness or poor activation and control of the oblique (or side) abdominal muscles.

To increase or maintain good trunk flexibility, perform stretches below:



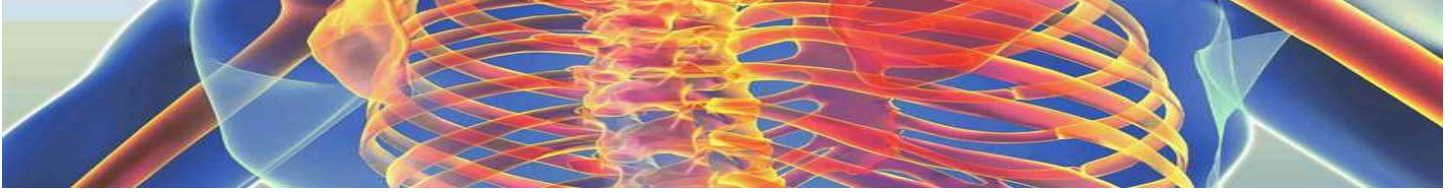
To test oblique activation during rotation, dragon boaters should perform the following exercise. Sit on a stable hard surface such as a table where your feet cannot touch the floor. You should sit tall, with your spine in a neutral position and your knees shoulder-width apart. Keep a small space between the back of your knees and the edge of your sitting surface. With your arms crossed on your chest, twist your trunk first to one side and then to the other.

You should be able to turn your shoulders 45 degrees in each direction with no knee movement (either side to side or forwards or backwards) and without a cramping sensation in the mid-back on the side that you are twisting towards.

Knee movement means that you are not stabilising your pelvis. Cramping is a sign that your oblique muscles are not activating adequately. To improve oblique activation during rotation, perform the described test within the range of movement in which you can control knee movement and avoid cramping. In time, you should be able to turn the whole 45 degrees without such movement and cramping.

Individual joints in the spine and rib-cage may also become restricted through dragon boating. Lack of movement in one area will often result in another area compensating by becoming more mobile.

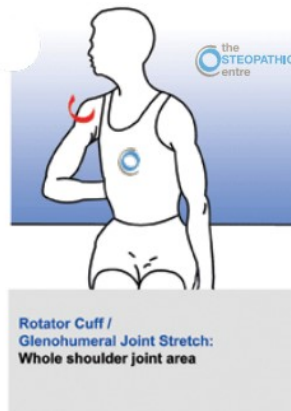




This imbalance of hypo-mobile (limited movement) and hyper-mobile (excessive movement) joints can place strain on focal areas of the spine as well as affecting the overall paddling movement. An osteopath will be able to assess individual joints within the spine and use appropriate techniques to remove specific joint restrictions.

## Shoulders

Sports involving overhead arm movements, such as dragon boating, increase the risk of shoulder injuries. For the dragon boater, this will apply to the inside arm. Good shoulder movement requires co-ordination between the humerus (upper arm bone) and the scapula (shoulder blade). A dysfunctional movement pattern of these bones can lead to shoulder impingement injuries. The rotator cuff muscles (which attach the humerus to the scapula) and the bicep tendon (at the front of the shoulder) can become pinched between the humerus and scapula during overhead movements, leading to irritation of these tissues. Stretching the chest and rotator cuff muscles is advisable to minimise the risk of impingement injuries. Take a look at stretches below:



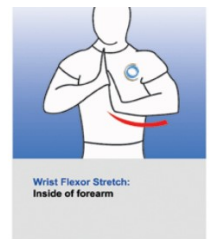
## Head and Neck

**Position** In order to keep in time, the dragon boater must keep watching the “pacers” (or “stokers”) at the front of the boat throughout the paddling movement. This requires both extension and rotation of the neck. Restrictions in the lower neck are common, particularly for people who spend a lot of time working at a computer. Such restrictions may result in an over extension of the upper neck during the paddling motion, in order to compensate for the limited movement in the lower neck. This can lead to pain and injury. To prevent such neck pain, dragon boaters should try to use the whole of the neck, rather than just the upper part, to enable them to maintain focus on the “pacers”.

A good exercise to help maintain movement throughout the whole neck is the “chin tuck”. Stand with your heels one foot from a wall and your back and head resting against the wall. Look as far down towards your feet as you can without your head coming away from the wall. Gently hold this position for 30 seconds whilst breathing normally.

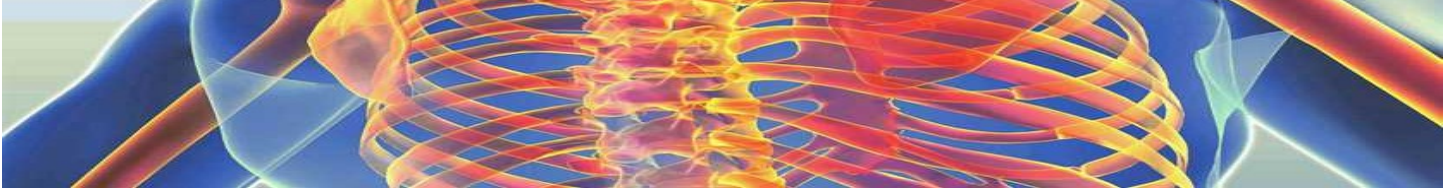
## Forearms

During most exercise, continual movement helps to circulate blood throughout the muscles. The paddling movement, however, requires the forearm muscles to work statically in order to maintain a good grip on the paddle. This can lead to a build-up of lactic acid and “forearm pump” (i.e. a swollen feeling in the forearms). In the short term, this can be very painful and may not ease between training sets or races. In the long term, it can lead to shortening of the forearm muscles and an increased risk of injury such as tennis elbow, golfers elbow and wrist pain. It is therefore important to stretch these muscles before and after dragon boating as well as between sets. See stretches below:



## Knee Position

Most dragon boaters will sit with one leg straightened out in front of them, and the other bent beneath the bench. Others will sit with two straight legs. The debate as to which is the best leg position for dragon boaters is beyond the remit of this article. In order to prevent injury to the knees during dragon boating, however, it is important to keep the foot in line with the upper thigh and ensure that both feet always point in the same direction as the knees. For example, dragon boaters should avoid rotating their front foot (or feet) outwards in order to press the outside edge of the foot against the kick board.



## Train Both Sides

The paddling movement requires the dragon boater to twist to one side repeatedly. This can lead to an imbalance in flexibility and strength. Training on both sides of the boat will help to maintain better balance and reduce the risk of injury. Also, when dragon boaters paddle continuously on the same side, the lower back joints on the outer side will “approximate” (i.e. the joint surfaces will come together) whilst the lower back joints on the inner side will “gap” (i.e. the joint surfaces will move away from each other). This may cause the lower back joints to “lock” on the approximating side which may in turn result in lower back pain. Paddling the occasional set on the other side of the boat may help dragon boaters to prevent the joints in the lower back from “locking” by engaging in the alternative motion. If a dragon boater suspects they have a “locked” joint in the lower back, they are advised to seek the assistance of a professional such as an Osteopath who may, if appropriate, manipulate the joints in order to get them moving again.

It is difficult to say just how much a dragon boater should paddle on their less preferred side or “off” side. It is my view that for an absolute minimum of 10% of any training session, dragon boaters should paddle on their “off” side, with this percentage increasing when races are not imminent.

## Summary

This article provides guidance for dragon boaters on how to reduce the risk of incurring injuries as a result of their paddling. This guidance has included technique and training tips alongside pointers for stretching. Whilst this article has highlighted the key areas which dragon boaters should focus on when stretching, it does not provide a comprehensive stretching programme. It is still important for dragon boaters to perform a balanced stretching routine, which covers all of the major muscle groups, after every training session. If you experience pain during or after dragon boating, it is advisable to seek professional assistance. Registered osteopaths are degree-trained to assess, diagnose and treat a range of musculoskeletal conditions. Osteopaths take a holistic approach through which they consider not only the area of pain but other tissues and joints which may influence a patient’s overall biomechanics. By treating the whole body, osteopaths aim to address the cause of the injury rather than just the symptoms. If you are interested in receiving future articles on injury prevention for dragon boaters, please send an email with the subject title “Request for Dragon Boating Articles” to [info@osteopathsingapore.com](mailto:info@osteopathsingapore.com)

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