

Guide for managing low back pain in rowers

What is rowing-related low back pain (LBP) and how common is it?

Pain in your low back (formally defined as the region between the bottom of the rib cage and buttock creases) can arise from several different known or unknown sources, abnormalities or diseases. Some people can have pain in one or both legs, and may also have symptoms such as tingling, weakness or numbness in one or both legs. We can never be sure that LBP was actually caused by rowing, but for the purposes of this document, **rowing-related low back pain** is pain that affects a rowing athlete, first started during or is aggravated by rowing or associated training, and results in a need to change or stop scheduled rowing-related activities.

The best research suggests that around 2 out of every 3 adult rowers will have low back pain in a 12-month period, compared with 1 out of every 3 people in the community (non-rowers). Low back pain is common in rowers, and we will call it '**back pain**' through the rest of this document.

What increases the risk of a rower experiencing back pain?

Once a rower has had back pain, they are at an increased risk of getting it again. A rapid increase in training volume or number of competitions, such as a change from head racing to the sprint season, is associated with more reports of back pain. Higher volumes of training overall, and more years of being a rower increase the risk of developing back pain. Doing large volumes of ergometer training, particularly sessions of more than 30 minutes without a break, are associated with an increased risk of back pain. Fatigue and poor technique during rowing contribute to more spine flexion and less hip movement during the rowing stroke. These changes in body position may be exaggerated during ergometer rowing, which may be why ergometer training increases the risk for back pain.

The range of a rower's hip flexion should be at least 130 degrees, knee range of motion should be full, the hamstrings should have good flexibility and the muscles of the trunk should have good endurance, particularly in the back and buttock muscles (posterior chain) to reduce the risk of back pain. We also know that non-physical factors such as psychological stress can contribute to risk.

What you can do to prevent back pain

It is very difficult to completely prevent back pain. Many rowers will experience back pain at some time during their rowing career. We know that for most rowers, their back pain is not serious, and that they will recover well. It is important to prevent a serious episode of pain or

one that causes persistent pain. Preventing back pain can be complex because there can be many reasons, other than rowing, that might increase the risk of developing back pain. Understanding the problem, responding to an episode early by modifying training, and accessing good treatment are likely to help.

There is no one proven way to prevent back pain in rowers. However, some studies have compared rowers with back pain and those without, and found that there was a difference in technique, especially when rowers were fatigued. Rowers who have had back pain before are more likely to flex their lower back (not keeping their pelvis upright, sitting up on their 'sit-bones') as they row, and don't move as well through their hips while keeping a flat and vertical lower back.

Training should focus on dynamic trunk exercises to improve endurance of the posterior chain. Static exercises such as 'planks' are unlikely to help. We don't know if good endurance in trunk muscles will protect you from back pain, but it is likely that good trunk muscle endurance will help maintain good rowing technique.

What you should do if you start to feel back pain from rowing

If you feel pain in your back that is stopping you from completing your normal training, do try not to worry and do share this information with someone you trust such as your physiotherapist or doctor. The good news is that there are effective ways of managing back pain. If you feel that your pain is not likely to settle quickly, involving others such as your team's support staff and coach may be important to make sure you have an appropriate training and management plan in place.

Some rowers might conceal their back pain from teammates or coaches for fear of being regarded as 'weak' or risking exclusion from selection. Coaches can do their part to encourage rowers to be forthcoming about back pain—addressing your back pain early (early management) is likely to result in a better outcome. Training and competing with back pain makes it more difficult to perform well. Coaches must ensure a supportive environment where rowers can be honest about their back pain without fear of judgement.

What you should expect from a good LBP management programme

Once you have informed your coach and either (temporarily) stopped or modified your training, we suggest that you follow the advice given in Table 3A. The flow chart will help you and your coach know when you are ready to progress to each stage of rehabilitation. We recommend you and your coach collaborate with a healthcare provider to progress your rehabilitation because the healthcare provider has specialist skills in rehabilitation, including tests to know when your body is ready to tolerate more load (Fig 2A).

The people helping you manage your back pain (healthcare providers and coaches) should work together with you to create goals that are important to you. Consider focusing your goals on what you need to do to (i) reduce and manage your pain, (ii) improve your function and quality of life, and (iii) returning to full training and competition.

You should expect to modify your training load and be guided to learn the tools you need to manage your back pain and training yourself. Your physical conditioning (your training programme) should be assessed and modified to allow you to keep fit. The way in which you row on the ergometer and on the water should be assessed and modified if needed to address any technique issues that could predispose you to back pain.

You might also like to think about the best way for you to manage your stress levels, sleep quality and social circumstances, as well as general health because these factors can affect your risk of developing back pain and your ability to recover from back pain. A healthcare provider can help you design the best management plan for you and will help direct you to other healthcare providers (e.g. psychologist) as needed for the best support.