

	Coaches & medical staff should encourage rowers to seek assessment of Low Back Pain (LBP) early. Delaying this can prolong recovery.	Assessment & management by a Medical Doctor & Physiotherapist experienced in managing rowing-related LBP is ideal.	Episodes of rowing-related LBP are most often not serious, they are self-limiting & early management will educate the rower about severity & recovery.	Many factors contribute to a presentation of rowing-related LBP, these include; physical, biological, social & psychological –they all need to be managed.
	INITIAL TRIAGE – first presentation	ACUTE- first week	SUB-ACUTE – return to rowing	REHABILITATION – return to full training
EXAMINATION	<p>Establish type of presentation;</p> <p>Non-specific LBP with / without somatic referral</p> <p>Radicular pain with / without radiculopathy</p> <p>Inflammatory component to pain</p> <p>Atypical pain requiring red flag exclusion</p> <p>Psycho-social screening for; mental health issues, catastrophizing, anxiety, upcoming competition & / or life stressors.</p>	<p>Re-assess findings from initial triage including; sitting tolerance, lumbar range of motion & ability to complete activities of daily living (ADL).</p> <p>Assess rowing specific ranges; specifically hip flexion & hamstring length, as they affect how the pelvis & lumbar spine move in the boat. Improvement in the motion of the pelvis & hips is desirable.</p>	<p>Assess rower's ability to move through rowing specific movement & ability to tolerate spinal load.</p> <p>If have not yet rowed, trial erg row &/or short duration on-water row with assessment before & after.</p> <p>Response to on-water training should be continually assessed.</p> <p>Coach or medical staff should ensure rower's stroke pattern consists of appropriate pelvic motion & limits excessive low back motion.</p>	<p>Ensure the rower is confident in their ability to progress.</p> <p>Objective markers in initial triage assessed for signs of resolution; pain should be absent during ADL & cross training.</p> <p>Rowers should be able to row with usual power & tolerate changes in; water conditions, rowing rate & seating in boat.</p> <p>Rowing stroke pattern should be monitored during water or erg sessions that induce high levels of fatigue.</p>
MANAGEMENT	<p>Restore function in ADL with early & effective pain relief. Manual therapies may assist. Avoid aggravating activities.</p> <p>Red flags include changes in; sensation or motor control, bladder or bowel function OR systemic signs of illness such as weight loss, night pain & sweats. Referral to medical specialist required.</p> <p>Refer to Psychologists if there is a regular person the rower sees / specific need identified.</p>	<p>Control of pain with activity modification +/- medication (prescribed under International Olympic Committee & World Anti-Doping Agency guidelines) +/- manual therapies.</p> <p>Restore movement via rowing specific exercises & progress towards spinal load requirements.</p> <p>Poor sleep, performance pressure, fear avoidance behaviour & life stressors signal consideration for support on an individual basis.</p>	<p>Rowers should be active participants in their recovery.</p> <p>It is important for the rower to avoid developing a fear of specific movement patterns, a cognitive functional therapy approach or a confidence with movement approach can be helpful. Splinting or overprotective movements should be discouraged.</p> <p>If a rower is finding it difficult to cope or if they have already accessed psychological services, this should be encouraged & continued.</p>	<p>Emphasis placed on restoring usual rowing biomechanics & addressing modifiable risk factors that can prevent reoccurrence.</p> <p>Continue to support self-management, the rower should be seen less for specific interventions such as manual therapies or ongoing use of medication.</p> <p>Do not progress to this stage if red flags identified.</p> <p>Yellow flags include recurrent history of failing to progress or symptoms in excess of presentation; progress slowly & with care.</p>
EXERCISE & TRAINING	<p>Avoid complete rest.</p> <p>If rowing aggravates; stop on-water & rowing ergometer (erg) training.</p> <p>If can sit without pain; start short duration stationary bike. If sitting is painful prescribe walking; duration & including hills or steps is dependent on symptoms.</p> <p>If rower is able to row on-water or erg without pain or muscles guarding, they should be encouraged to do so.</p>	<p>Focus on what the rower CAN DO to maintain fitness but not exacerbate LBP.</p> <p>Continuation or graduation of a cardiovascular cross-training program within limits of the pain.</p> <p>If the rower tolerates sitting, stationary bike used. As sitting tolerance increases, a trial erg row can commence & then progression to a short duration on-water row of less than 10km.</p> <p>If sitting is not tolerated, use of an elliptical trainer, swimming or walking should be encouraged.</p>	<p>If not able to row; continue cross-training with increasing duration & intensity. Can use; stationary bike, elliptical trainer, ski erg & walking including up hills & stairs. Consider swimming but gradually increase to avoid shoulder pain. Modality is dependent on symptoms & access.</p> <p>Return to rowing program should be agreed on by medical staff, rower & coach. Intensity & volume increase, building on-water rowing before erg unless rough water prevents this. Consider boat type when prescribing training: 8-10km x1 ≠ 8+.</p> <p>Rower can continue to use cross-training to 'top-up' training load. The planned & completed training load should be monitored.</p> <p>Clinicians & strength & conditioning (S&C) coaches should work together to formulate exercises individual to the rower that address rowing specific ROM, trunk strengthening & movement deficits.</p>	<p>Return to full training should be planned with increasing on-water distance & intensity as well as progressive increase in erg +/- S&C & cross-training. This should be individually tailored.</p> <p>As rower approaches return to full on-water training a reduction in cross-training occurs as part of overall load management.</p> <p>A strength & mobility program that addresses modifiable risk factors for LBP should continue to ensure change is made & may be prescribed for long term maintenance. Medical and coaching staff should work together to ensure the rehabilitation program translates into technical changes to protect from further injury.</p> <p>S&C training should initially avoid high loads, progressive increases towards usual training can occur, monitoring response. Medical & coaching staff should continue to work with the rower to achieve this.</p>
EDUCATION	<p>Provide injury education, alleviate fears & include the rower in initial planning.</p> <p>Manage coach & the rower's expectations. Involve coach from outset & allow them to contribute ideas about injury occurred.</p>	<p>Involve the rower in planning & educate about the multi-dimensional nature of LBP including contributors to onset & persistence of pain.</p> <p>Support may come from coaching staff, medical staff, family & friends or psychology.</p>	<p>The rower & coach should have a thorough understanding of what symptoms can be tolerated when returning to training. A rower should have; no / low levels of pain during rowing, pain not getting increasingly worse when rowing & no pain immediately after rowing.</p> <p>Continue to reassure & educate the rower & coach.</p>	<p>An athlete centred & coach supported approach should be encouraged.</p> <p>Empower the rower to self-manage, have input into the plan & follow the plan with the support of the medical staff & coaching team around them.</p>