

Overuse cycling injuries

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With the return of the warmer weather the number of cyclists out on the road has increased vastly. As with other sports of a repetitive nature, this increase in mileage often brings with it an increase in the incidence of overuse injuries. Assessment of such injuries MUST address their underlying cause, otherwise any relief as a result of treatment will be temporary. Factors that must be considered include...



- The athlete's anatomical alignment
- Musculoskeletal function/muscle balance
- Bike set-up
- Training history/changes in training regime
- Technique

Neck and back pain:

Neck pain on the bike is largely due to the neck being in an extended position for a prolonged period. As with any constant compression of a joint over a long period, this can cause transmission of noxious stimuli, muscle fatigue, and trigger points in the muscle. These things can, in turn, cause further joint compression and chronic muscle pain. In addition the cumulative tensile stress on joint capsules and ligaments can cause pain and long term structural changes to the joint arthrokinematics (the way the joints move).

Having the neck in an extended position and the shoulders in a depressed position on the bike can increase neural tension (the tension on the nerves exiting the neck to supply the upper limb). This can be exacerbated by having the handlebars too low or by the cyclist not slightly bending their elbows whilst they are riding.

Tips to prevent a buildup of tension: regular forward neck bending, side bending, shoulder shrugs on the bike, and occasionally sitting upright.

The Physiotherapist needs to ensure that the cyclist has adequate Thoracic Spine mobility, first rib mobility, flexibility in the scalenes, levator scapulae, upper trapezius, and rhomboid muscles.

As with all postural issues core stability is crucial. Lower Trapezius muscle activation is very important in preventing neck pain and improving riding posture.

Lower back pain on the bike is largely due to the lumbar spine being in a prolonged flexed position. Ongoing lower back pain can be due to muscle fatigue, chronic tension to the posterior vertebral ligaments, and prolonged compression to the intervertebral discs.

It is important to assess the cyclist's pelvic position whilst they are cycling. If the cyclist is sitting with their pelvis posteriorly tilted (e.g., when the cyclist is too tight in the gluteal and hamstring muscles), this will increase the amount of lumbar flexion. Technique is also important. For example, many cyclists with low back pain use Quadratus Lumborum (a lower back muscle) to side bend and rotate their pelvis in order to flex their hip, rather than maintaining a 'stable platform' and using their iliopsoas (hip flexor) muscle to flex their hip. This can cause excessive fatigue in the Quadratus Lumborum, as it is doing the job of the hip flexor (often worse on hills when

more power is required). It is important for the physiotherapist to correct the movement pattern and strengthen any areas of weakness (e.g weak iliopsoas) that may be predisposing the cyclist to this altered movement pattern.

Core stability exercises are important in the treatment and prevention of lumbar spine pain. The lumbopelvic stability muscles are required not only to tolerate a prolonged flexed posture, but also to continually stabilize the Lumbar spine and pelvis to provide a stable platform for all the major force producing muscles.

Knee pain:

Knee pain on the bike can be due to a number of factors. The most important being the muscle balance of the hip and thigh. It is important to assess the hip, as often weakness here will allow the knee to drift medially towards the top tube of the bike when riding, predisposing the knee to biomechanical stress. Pronation of the foot will also allow this to happen, so it is important to have a podiatrist assess for this and provide an orthotic to fit in the cycle shoe if necessary. Tightness in the lateral quadriceps and ITB will also cause a lateral patella drift and pain due to patella maltracking.

Muscle Balance:

When cycling, the hip is always in a relatively flexed position so chronic tightness through the TFL, ITB, iliopsoas, and adductors is very common. This can lead to hip and groin problems (e.g., greater trochanteric bursitis, or hip tendinopathies). All cyclists should perform regular stretches, and have deep tissue massage and Trigger Point work on these areas. Gluteal and hamstring range also needs to be maintained in order to sit comfortably in lumbar flexion and avoid falling too far into posterior tilt.