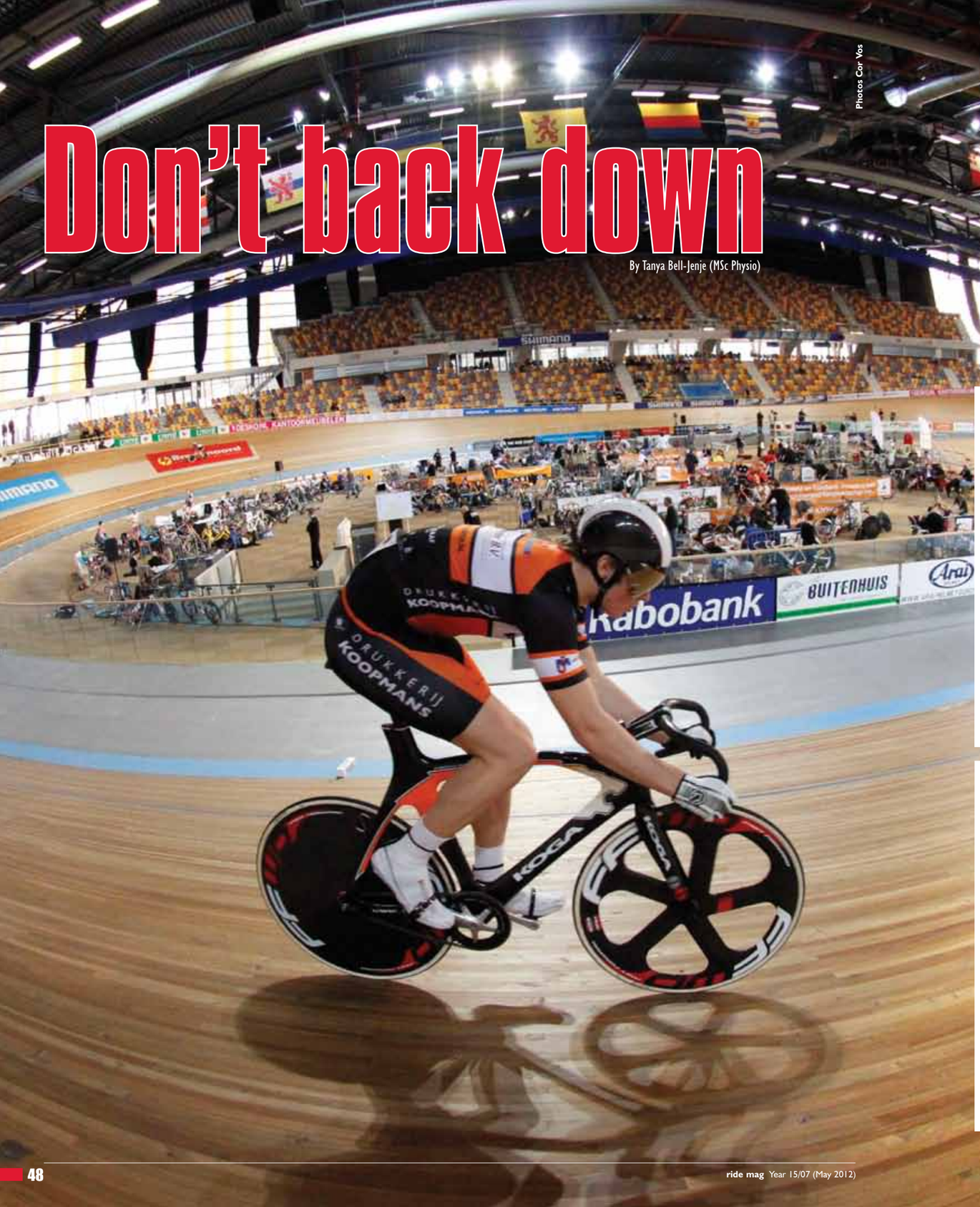
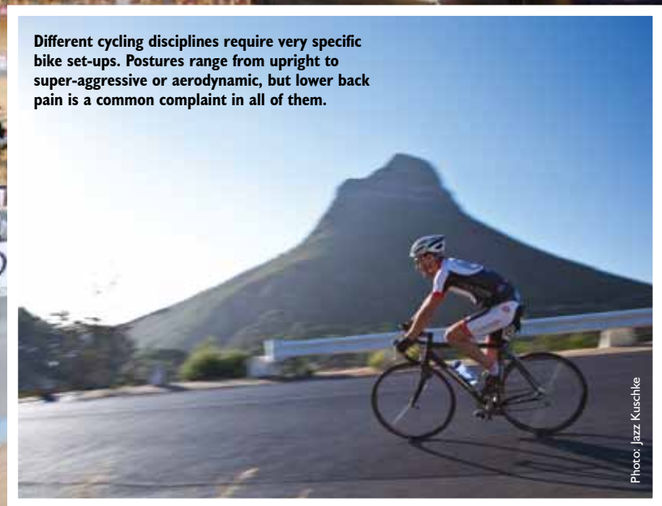
Don't back down

By Tanya Bell-Jenje (MSc Physio)

Photos Cor Vos





Different cycling disciplines require very specific bike set-ups. Postures range from upright to super-aggressive or aerodynamic, but lower back pain is a common complaint in all of them.

Photo: Jazz Kuschke

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Cyclists are vulnerable to lower back pain, but you can protect yourself by working on your core strength

The flexed posture that cyclists have to sustain, while pumping their legs through the down and upstroke, results in progressive overload of the lumbar discs, facets and ligaments, as well as fatigue of the back muscles. All of this causes lower back pain – a common complaint in riders.

Different cycling disciplines require specific bike set-ups. The needs of track cyclists, road cyclists, time-trial riders and even applications within a single discipline, such as cross-country mountainbiking or singlespeeding, impose specific demands. These postures range from aerodynamic and aggressive to more upright posture, resulting in different degrees of pelvic tilt and various lumbar spine positions. This makes diagnostic generalisations very difficult and each cyclist should be assessed individually. If you suffer from recurrent and chronic back pain while cycling, an assessment by a sports physiotherapist, with knowledge of the biomechanics of cycling, is recommended.

Common faults that lead to lower back pain:

Incorrect bike fit

Have your bike set-up and frame size checked by a reputable specialist. If your saddle is too high or your cleats incorrectly positioned, your pelvis tilts laterally and your lumbar spine side-bends and rotates at the end of the downstroke. Suspect this if you have one-sided back pain.

If your saddle has a backward tilt or your handlebars are either tilted downward or too low, it increases flexion in the lumbar spine. Suspect these set-up faults if your back pain is more central. Riding more upright, raising the stem height or changing the length of the stem may resolve your pain.

Tight hamstrings

Inflexible hamstrings force the pelvis to tilt back and the lumbar spine to flex more,

resulting in lower back pain. Ideally, you want a more neutral pelvic tilt position (midway between anterior and posterior pelvic tilt). During the bike set-up process, the correct position must be sought, but a neutral pelvic tilt position will not be achieved without good hamstring flexibility. Refer to the article on page 40 of *Ride*'s March issue to see how you can improve your hamstring flexibility.

Inequal leg length

A difference in the length of your legs can force a lateral pelvic tilt while riding. A difference of just six millimetres can accelerate degeneration of the knees, hips and lumbar spine. If the cause is biomechanical, this may be corrected by mobilisation of restricted structures in the lumbar spine (e.g. the quadratus lumborum muscle) and correction of muscle imbalances around the lumbo-pelvic region. If the cause is anatomical, increasing your cleat height on the short-leg side may help.

Muscle fatigue

Any build up in training volume, in terms of intensity, frequency and duration, should be gradual and structured as the muscles of the lower back need to adapt to and develop greater tolerance of the sustained flexed position of a long ride. Cyclists who ride more than 160 kilometres a week are 3,6 times more likely to develop lower back pain than those who ride less.

Photo: Jazz Kuschke

Poor core strength

A study investigating spinal movement and muscle activity in cyclists while they had back pain showed a loss of co-contraction of their deep lumbar core muscle, the multifidus. The link between lower back and postural problems (both on and off the bike) and poor core stability is well known. Regular stabilisation exercises should be an integral part of training (to improve trunk stability and performance), as well as treatment and injury prevention.

Cyclists who ride more than 160 kilometres a week are more likely to develop lower back pain than those who ride less

Try these exercises to improve your core strength. The sponge rollers illustrated here are inexpensive and add an extra dimension to strengthening, but a firm surface is sufficient.

Stabilise by engaging your core first. Slowly draw up your pelvic floor (visualise stopping your urination mid-stream) and tighten your transversus abdominis (deep abdominals) by drawing your pubic bone towards your spine.

Do alternate leg lifts.

Do alternate leg slides.

Changing the arm position as shown below reduces the base of support and makes the exercise more challenging.

Don't hold your breath or allow your pelvis to rock while performing these exercises. Do them all slowly and with control. Complete three sets of eight reps with 30 seconds rest between sets. Stabilisation exercises should be performed on alternate days.

Ensure you have no pain either during or after the exercise. If your tummy bulges and your back arches, you are unable to maintain a neutral pelvic tilt, indicating that these exercises are too advanced for you. ride

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