

Sport Injuries, Back Injuries, and Back Pain

Types of sports injuries causing back pain

Exercise is an important part of a healthy lifestyle, and sports are one approach many people choose to get their exercise. For people with back pain, sports can still be a viable option if they pay attention to their back. For others, knowing the type of strain sports place on the back may help prevent a back injury. This article gives specific information about sports injuries and back pain from bicycling, weight lifting, running, swimming, skiing, golf and tennis.

Up to 20% of all injuries that occur in sports involve the lower back or neck. Sports that use repetitive impact (e.g., running) or weight loading at the end of a range-of-motion (e.g., weightlifting) commonly cause damage to the **lumbar spine** (lower back). Sports that involve contact (e.g., football) place the **cervical spine** (neck) at risk of injury. The **thoracic spine** (mid portion of the spine at the level of the rib cage) is less likely to be injured in sports because it is relatively immobile due to the rib cage.

Stretching exercises can help prevent sports related back injuries

For every sport, a thorough warm-up should be completed before starting to play. The warm-up will be specific to the muscles used in that sport, but it should also prepare the back for the stresses to come.

- **Increase circulation gradually** by doing some easy movement (such as walking) to increase blood circulation to the muscles and ligaments of the back
- **Stretch** the lower and upper back and related muscles, including hamstrings and quadriceps
- **Start slowly** with the sport movements (e.g. swing the golf club, serve the ball)

Work with a professional to prevent sports injury and back pain

There are professionals or instructors in almost every sport who are willing to share their expertise. They can teach you proper form for a new sport or help you develop and keep the proper technique for a sport you already know.

How biking can cause back pain

- Little conditioning is provided to the back muscles by bicycling
- Back posture on the bicycle can strain the lower back (a result of the lumbar spine flexing or pulling up) or the upper back (a result of the neck arching back)
- Rough terrain increases jarring and compression to the spine, which can cause back pain

Preventing back pain and sports injuries from biking

- Select the best bicycle for your purpose. For casual bike riders, consider a mountain bike with higher, straight handle bars (allow more upright posture) and bigger tires (more shock absorption) versus a racing style bicycle
- Adjust the bicycle properly to fit your body, with the assistance of an experienced professional at a bicycle shop if possible

- Use proper form when biking; distribute some weight to the arms and keep the chest up; shift positions periodically, gently lifting and lowering the head to loosen the neck
- Remember to push and pull with the legs while biking, the pulling component being equally as important as the pushing portion
- Use shock absorbing bike accessories including seats and seat covers, handlebar covers, gloves and including shock absorbers on the wheels (front shocks or full suspension shocks depending on the type of riding and the terrain)
- Do some back strengthening exercises in conjunction with your bicycling routine to provide strength and conditioning for the back

How weight lifting and body building cause back pain

- Extending or flexing the back muscles against resistance (the weight) can result in stress fractures (such as spondylolysis), muscle strain and ligament injury during weight lifting and body building
- Exercises performed during weight lifting and body building such as clean-and-jerk, dead-lift, snatch, and squat can be particularly stressful
- Older persons who do weight lifting may already have some disc degeneration which can make them more susceptible to the strains of weights

Preventing back pain and sports injuries from weight lifting

Know the condition of your back and keep weight amounts within your personal limits before you begin weight lifting

- Use less weight but do more repetitions when lifting weights or body building
- Use a training machine rather than free weights for certain weight lifting exercises. Discuss this with both your spine specialist and trainer, understanding there is a trade-off. A machine may reduce stress on the back (for example, quadriceps done sitting at a machine versus squats holding weights) and can generally be used by someone with little or no supervision. But free weights add proprioception (self-regulation of posture and movement in response to the free weights) that a machine does not.
- Use a spotter when working with free weights to protect your back while weight lifting
- Consider wearing a belt for weight lifting (first ask the recommendation of your trainer or spine specialist, as there are conflicting studies on the merits of belts)
- Do not perform exercises such as the clean-and-jerk, dead-lift, snatch or squat without proper supervision, as they pose greater risk for back injury and back pain

How golf causes low back pain

- The full golf swing (backswing and follow-through) rotates the spine with a lot of force and little control
- Lumbar spine muscles strain to help provide force for the golf swing
- Disc and facet joint loading increases to help provide force for the golf swing
- Bending over to pick up the golf bag and carrying it can strain muscles

Preventing low back pain and sports injuries from golf

- Learn proper form and posture for playing golf, including a smooth, rhythmic swing in good balance

- Choose a golf bag with a built in stand and dual straps
- When picking up the golf ball, bend at the knees or get a device for your putter that lets you retrieve the golf ball from the hole without bending over
- Consider hiring a golf professional experienced at teaching golfers with bad backs who can explain postures and techniques that reduce back strain and prevent back pain

How running causes back pain

- Back muscles work to keep the body upright and in good posture during the duration of the run
- Joints and discs are jarred and compressed by the force of the body leaving the ground and landing on every stride when running or jogging

Preventing back pain and sports injuries from running

- Wear top-quality cushioned running shoes
- Run on softer surfaces (grass or padded track)
- Do more frequent but shorter runs as opposed to marathon running
- Use form that reduces the "up and down" stride motion and focuses on forward motion while running; lead with the chest, keeping the head tall and balanced over the chest
- Maintain strong abdominal muscles to help stabilize the lower back while running

How skiing causes back pain

- While skiing, back muscles are used to keep the body in the proper form and to carry heavy equipment
- Falling while skiing can jar, twist or otherwise stress the spine

Preventing back pain and sports injuries from skiing

- Begin exercising to prepare for skiing at least six weeks before getting on the ski slopes
- Always take one warm-up run down the easiest hill each time you begin skiing
- Ski on slopes that fit within your ability level

How swimming causes back pain

- Lower back can remain hyper-extended during front strokes (the crawl or breaststroke) while swimming
- Upper spine (neck) may be jerked backward repetitively during front strokes while taking breaths when swimming

Preventing back pain from swimming

- Use proper form for front strokes while swimming; keep body level in the water (hold lower abdominal muscles up and in) and keep the head straight rather than lifted
- Swim with side or back strokes instead of front strokes
- Roll the body to the side and keep the chin in when taking breaths during the crawl, rather than jerking the head backward, to reduce the amount of movement in the neck while swimming
- Use a snorkel to eliminate the need to move the head for breaths
- Wear goggles to reduce improper head movements when trying to keep water out of the eyes
- Use flotation devices (noodles, boards, life preservers) to maintain proper form when swimming

How tennis causes back pain

- Front- and back-hand shots require a large amount of trunk rotation and twisting in the spine when playing tennis
- The tennis serve hyper-extends the lower back and can compress lumbar discs
- Back muscles must support continual sudden forward and lateral movements and start-and-stop motions during a game of tennis

Preventing back pain and sports injuries from tennis

- Learn about the different racket tensions and be fitted by a professional for the proper tennis equipment; a more flexible tennis racquet requires more trunk rotation than a stiffer tennis racquet with looser strings
- Consider using a slice serve rather than a kick serve to reduce the degree of back arch when playing tennis
- Use proper form during tennis, bending the knees, holding in the abdominal muscles
- Have a tennis professional check your form periodically
- For new players, professional tennis instructors can teach you proper form and make suggestions on how to avoid back injuries, back pain or stress on the back