



## Ask the Expert with Dr. Darrell Menard

*Find Answers to your Sport Medicine Questions!*

# Tendons and Ligaments – are they Different?

**Q:** Throughout my military career, I have participated in a wide variety of sports and experienced my fair share of injuries. Some of these injuries were the result of overuse and others were caused by trauma. Most of my injuries have involved tendons or ligaments and I must admit that I really don't understand the difference between the two. *Active Adam*

**A:** Dear Active Adam – great question. The body has approximately 900 ligaments and 4000 tendons. Both of these structures are made of tough fibrous tissues and are essential to the proper functioning of our musculoskeletal system. Unfortunately, they both can be injured when we use them at work and at play. They are also more vulnerable to injury when they are not toughened up by living an active lifestyle, particularly as one ages. When ligaments and tendons are injured people can experience pain, inflammation, weakness, reduced range of motion and in some cases instability.

Ligaments attach bones to bones. Their primary role is to make joints more stable and when they are badly damaged people may feel the affected joint is loose or unstable. Ligament injuries are referred to as "sprains" and are commonly described as being grade one to grade three. A grade one sprain is a minor injury where some ligament fibers have been damaged but there is no obvious ligament tear. A grade two sprain is a moderate injury where the ligament is partially torn. A grade three sprain is a severe injury where the ligament is completely torn. Regardless of their grade, all ligament sprains can be very painful and disabling.

Tendons attach muscles to bones. They function to transmit the forces generated by muscles to make bones move. They also play an important role in joint stability and helping to absorb the impact loads that are generated by activities such as running and jumping. Tendons can experience a number of different injuries including strains, partial tears, complete tears, tendonitis and tendinosis. These injuries often occur as the result of overuse. They can also result from trauma such as tearing your Achilles tendon while jumping up to do a layup in basketball.

Unfortunately, ligaments and tendons both have very limited blood supplies so when they are injured it can take a long time to recover. The appropriate treatment for these injuries will depend on their type and severity. Complete tears of ligaments and tendons can require surgical repair to restore normal function and stability. Less severe injuries usually respond to some combination of rest, ice, compression, elevation, anti-inflammatories, physiotherapy, casting/bracing, shock wave therapy, corticosteroid injections and time.

Bottom line: The body has a huge number of tendons and ligaments that play a critical role in helping us function well on our journey through life. It is important to know that these tissues have a poor blood supply so when they are injured, they will heal quite slowly. Seeking the help of a health care professional, can speed up your recovery, prevent complications and help you get back to doing what you love – being active! Exercise is medicine!

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Dr. Darrell Menard is the Surgeon General's specialist advisor in sport medicine. He has worked extensively with athletes from multiple sports and has covered Canadian teams competing at multiple games including the 2012 Olympics and the 2016 Paralympic games. These articles were originally published in the Canadian Forces Journal, the Maple Leaf.

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