

Injury-prone? Your genes might explain why

Injury is a fact of life for most athletes, but some professionals—and some [weekend warriors](#), for that matter—just seem more injury-prone than others. But what is it about their bodies that makes the bones, tendons, and ligaments so much more likely to tear or strain—bad luck, or just poor preparation?

A growing body of [research](#) suggests another answer: that genetic makeup may play an important role in injury risk.

A [review article](#) recently published in the *Clinical Journal of Sports Medicine* emphasizes that research on the genetics of sports injuries “holds great potential for injury prevention for athletes at every level.” The authors, from Stanford University’s department of developmental biology and genetics, believe that genetic testing also gives athletes valuable information that might increase their competitive edge.

Within the field of sports-injury genetics, some studies have focused on variations in the genes that control the production of [collagen](#), the main component of tendons and ligaments. Collagen proteins also form the backbone of tissues and bones, but in some people, structural differences in these proteins may leave the body’s structures weaker or unable to repair themselves properly after injury. In a [study](#) published in the *British Journal of Sports Medicine* in 2009, South African researchers found that specific variations of a collagen gene named COL1A1 were under-represented in a group of recreational athletes who had suffered traumatic ACL injuries. Those who had torn their ACL were four times as likely as the uninjured study subjects to have a blood relative who had suffered the same injury, suggesting that genetics are at least partially responsible for the strength of the ligament.

Read full, original article: [The Genetics of Being Injury-Prone](#)