

# Anti-Inflammatory Treatment of Sports Injuries



From [Elizabeth Quinn](#),  
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The majority of sports injuries affect the musculoskeletal system (the bones, joints, muscles, tendons and ligaments). Injuries to these soft tissues are classified as either acute or chronic injuries. Acute injuries include ligament sprains and muscle strains. Most soft-tissue injuries are painful, and it is thought that the pain is due to the body's inflammatory response following the injury. For that reason, treatment with anti-inflammatory medication is a popular choice of athletes and healthcare professionals.

## Acute Injuries

Acute injuries are generally caused by a sudden collision, fall, or twist. Pain is immediately present and medical attention is often quickly sought. The most common injuries are ligament tears or sprains and muscle tears or strains. The tears can range from a minor partial tear to a complete tear that may require surgical repair.

In all cases, the body responds with inflammation. The inflammatory cells clear away injured debris and dead cells, paving the way for a proliferative phase as the next step in healing. The pain and swelling caused by the inflammation also keep the athlete from using the injured part and protect it from further injury. However, it is thought that the inflammatory response is generally excessive and prolonged. Therefore, anti-inflammatory medication is used to minimize this response. Oral nonsteroidal anti-inflammatory drugs (NSAIDs) are the most commonly used drugs for this purpose.

NSAIDs alleviate pain in acute soft-tissue injuries. However, there is no convincing evidence that they are superior to analgesics that have no anti-inflammatory action, such as acetaminophen. The effects of NSAIDs on the inflammatory reaction following an acute soft-tissue injury are small and do not appear to change the natural history of these injuries to any great extent. NSAIDs may be most effective if they are used immediately following the injury, before the inflammatory response is fully established. Side effects, in particular gastrointestinal (GI) ulceration in elderly patients with other medical problems, remain a concern with most NSAIDs. However, in young, otherwise healthy athletes, short-term NSAID use is rarely associated with profound side effects beyond mild GI upset.

Corticosteroids belong to another class of drugs with anti-inflammatory properties. Derived from the hormone cortisol, corticosteroids are associated with much more pronounced and lasting anti-inflammatory effects compared with

NSAIDs. Numerous studies have shown that they, in fact, can halt the healing process by virtually eliminating the inflammatory response. Inferior healing of ligament sprains and muscle strains has been observed in several animal models. For this reason, most healthcare professionals believe that corticosteroids have no role in the treatment of acute soft-tissue injuries.

### **Chronic Injuries**

Chronic soft-tissue injuries may start as a mild pain but with few functional limitations. Tendinitis is probably the most common problem diagnosed at that point. Treatment of these chronic problems is traditionally through relative rest, physical therapy, and NSAIDs. Again, NSAID use can result in pain relief but does not appear to promote healing of these conditions. Several randomized studies have failed to show a significant advantage over other analgesics or even placebo. Other treatment modalities may be more important to stimulate healing in these conditions.

Corticosteroids also remain a popular choice in the treatment of chronic soft-tissue injuries. Often they are used in a parenteral form and injected directly on and around the affected tendon. A corticosteroid injection can result in quick and dramatic relief of the pain symptoms associated with tendinopathy. The exact mechanism through which this is accomplished remains unclear, as inflammatory features are often absent in these lesions. Problems associated with corticosteroid use include weakening of the tendon and the possibility of tendon rupture. Although the exact rupture risk has not been determined, many healthcare professionals avoid using corticosteroids in weight-bearing tendons such as the Achilles tendon. In the upper extremity, corticosteroids are more frequently used. In addition, the pain relief obtained from a corticosteroid injection can be temporary. Recurrence of the pain after several weeks is not uncommon.

Although anti-inflammatory medication remains popular in acute and chronic soft-tissue injuries, their efficacy is limited. Some pain relief is often obtained, but dramatic effects on the healing of the injury cannot be expected. On the contrary, corticosteroids have the potential to actually delay or halt healing, particularly in acute injuries.