

Does ibuprofen stall the healing process in a Grade I lateral ankle sprain in adults compared to acetaminophen?

Dalton JD, Schweinle JE. Randomized Controlled Noninferiority Trial to Compare Extended Release Acetaminophen and Ibuprofen for the Treatment of Ankle Sprains. *Ann Emerg Med.* 2006;48(5):615-623.

Lateral ankle sprains are one of the most common injuries athletic trainers will come across, and the use of NSAIDs is typically included in the treatment protocol. Ibuprofen has been shown to be more effective than a placebo in treating pain and swelling associated with lateral ankle sprains, yet there are no studies looking specifically at the efficacy of acetaminophen on lateral ankle sprains. Therefore, the purpose of this study was to compare the effectiveness of acetaminophen and ibuprofen relative to pain and function for up to nine days after lateral ankle injury.

This study used a multicenter, randomized, double-blind, parallel-group study in which patients (N=260) of at least 18 years of age were diagnosed of either a Grade I or II lateral ankle sprain using the Leach classification system. Subjects were then randomized to either receive acetaminophen 1,300mg 3 times daily or ibuprofen 400mg 3 times daily for 9 days. The primary endpoint was a change from baseline at day 4 in pain or walking by using a 0-100 mm Visual Analogue Scale (VAS).

A negative change from baseline indicated improvement. The difference between means for pain on walking was -0.88, 95% CI. At the completion of the study, similar percentages of acetaminophen- and ibuprofen-treated patients had resumed normal activity, at 78% and 80%, respectively. The mean time to resume normal activity was approximately 4 days in both treatment groups.

As the study design was previously reported, the level of evidence was determined with the *AAOS Levels of Evidence for Primary Research Question*. Though follow-up was not optimal, the study used a double-blinded procedure and narrow confidence intervals similar to a high-quality RCT. Therefore, this study's level of evidence has been determined to be a Level 1, Therapeutic.

Based on these results, there is no difference in treatment and healing effects in a Grade I or II lateral ankle sprain if given acetaminophen or ibuprofen.

Contrary to popular belief that ibuprofen should not be given to an athlete in the initial phases of inflammation, these results show that it may not be detrimental to give a patient with an acute lateral ankle sprain ibuprofen as opposed to acetaminophen.

Patients are educated to take acetaminophen as opposed to ibuprofen in the acute stages of the inflammatory process. These results indicate that taking ibuprofen will not hinder the athlete's capacity to return-to-play any sooner than if they took acetaminophen.