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### Original Research

## Ankle Ligament Healing After an Acute Ankle Sprain: An Evidence-Based Approach

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### Abstract

**Objective:** To perform a systematic review to determine the healing time of the lateral ankle ligaments after an acute ankle sprain.

**Data Sources:** We identified English-language research studies from 1964 to 2007 by searching MEDLINE, Physiotherapy Evidence Database (PEDro), SportDiscus, and CINAHL using the terms *ankle sprain*, *ankle rehabilitation*, *ankle injury*, *ligament healing*, and *immobilization*.

**Study Selection:** We selected studies that described randomized, controlled clinical trials measuring ligament laxity either objectively or subjectively immediately after injury and at least 1 more time after injury.

**Data Extraction:** Two reviewers independently scored the 7 studies that met the inclusion criteria. Because of differences in study designs, a meta-analysis could not be performed. Effect sizes and confidence intervals could be calculated only for 1 study. The percentages of subjective and objective instability were calculated for the remaining studies.

**Data Synthesis:** Ankle laxity improved over a period of 6 weeks to 1 year. One author showed stress talar tilt values of  $16.10 \pm 8.8^\circ$  immediately after injury and  $3.4 \pm 3.6^\circ$  at 3 months after injury. In 2 articles, the authors reported that positive anterior drawer tests were still present in 3% to 31% of participants at 6 months after injury. Additionally, feelings of instability affected 7% to 42% of participants up to 1 year after injury.

**Conclusions/Recommendations:** In the studies that we examined, it took at least 6 weeks to 3 months before ligament healing occurred. However, at 6 weeks to 1 year after injury, a large percentage of participants still had objective mechanical laxity and subjective ankle instability. Direct comparison among articles is difficult because of differences in methods. More research focusing on more reliable methods of measuring ankle laxity is needed so that clinicians can know how long ligament healing takes after injury. This knowledge will help clinicians to make better decisions during rehabilitation and for return to play.

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Tricia J. Hubbard, PhD, ATC, contributed to conception and design; acquisition and analysis and interpretation of the data; and drafting, critical revision, and final approval of the article. Charlie A. Hicks-Little, MS, ATC, contributed to analysis and interpretation of the data and drafting, critical revision, and final approval of the article.

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