

Back to sport after foot and ankle injury

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One of the biggest challenges in a sports medicine practice is deciding when an athlete has sufficiently recovered from an injury and can return to his or her sport.

- **Ankle Sprains: How To Evaluate An Athlete's Ability To Return To Play**

Podiatry today. Issue Number: Volume 19 - Issue 8 - August 2006,

Author(s): By Douglas Richie Jr., DPM

There is pressure from various sources (coach or parent) to return the athlete back to play quickly after injury.

- **Ankle Sprains: How To Evaluate An Athlete's Ability To Return To Play**
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Ankle injury

Ankle sprain (grade I,II,IIIA,IIIB)

Ankle sprain with concomitant lesions

Ankle injuries with multiple ligament injury

Ankle injuries with Maleolar fractures

Combined ligament injury and fracture

...With concomitant lesions



SEVERITY

- In the case of a fracture, the treating physician can use fairly objective criteria via imaging studies to determine the extent of healing.

- For soft tissue injuries such as an ankle sprain, there are not a lot of reliable objective criteria and clinical tests that one can use to determine whether the athlete has fully recovered.

BACK TO SPORT

- The athletes must reach to the point which:
 - Able to playing
 - Lowest rate of reinjure

- If an athlete returns to play before an injury has adequately healed, there is a risk of re-injury
- A worse possibility is the occurrence of a new injury due to compensation for a previous unhealed injury

Ankle Sprains: How To Evaluate An Athlete's Ability To Return To Play

Podiatry today. Issue Number: Volume 19 - Issue 8 - August 2006, Author(s): By
Douglas Richie Jr., DPM

- The decision to return to play following an ankle injury is a multifactorial process involving both physical and psychological parameters

Return to Play in Athletes Following Ankle Injuries

Thomas O. Clanton, MD, Lauren M. Matheny, BA,* Hannah C. Jarvis, MB, BS, AICSM, BSc(Hons), MRCS (Eng), and Anastasia B. Jeronimus, PT, DPT, OCS Sports Health.
2012 Nov; 4(6): 471–474.

- Kaikkonen, et. al., reported on a simple test protocol to evaluate patients after a Grade III ankle sprain.¹

Kaikkonen A, Kannus P, Jarvinen M: A performance test protocol and scoring scale for the evaluation of ankle injuries. Am J Sports Med 22: 462-469, 1994.

- They asked three simple questions of the patient:
 - Can you walk normally?
 - Can you run normally?
 - Has your ankle fully recovered?
- They performed the following testing:
 - an anterior drawer stress test and testing for ankle joint dorsiflexion
 - functional test with the patient running down stairs
 - one balance test with the patient doing a one-legged stance on a square beam
 - two strength tests with the patient rising on the toes and rising on the heels

- Williams, et. al., proposed the Sports Ankle Rating System to assess functional outcomes of athletes with ankle injuries.
- This system has three major components:
 - a quality of life measure
 - a clinical rating score
 - a single numeric evaluation

Williams GN, Molloy JM, DeBerardino TM et al: Evaluation of the sports ankle rating system in young, athletic individuals with acute lateral ankle sprains. Foot Ankle Int 24: 274-282, 2003.

What Clinical Testing Methods Can Reveal

Lateral hop test

Single leg stance (Modified Romberg Test)

Heel rocker test

Ankle joint dorsiflexion

Test for joint laxity

Stair run

- Functional testing provides objective measures for gauging an athlete's progression through the rehabilitation process.

- Testing balance and proprioception, strength, range of motion, and agility coupled with psychological assessment evaluates readiness for return to play

Functional testing

provides objective measures for gauging an athlete's progression through the rehabilitation process

Testing balance and proprioception

Strength

range of motion

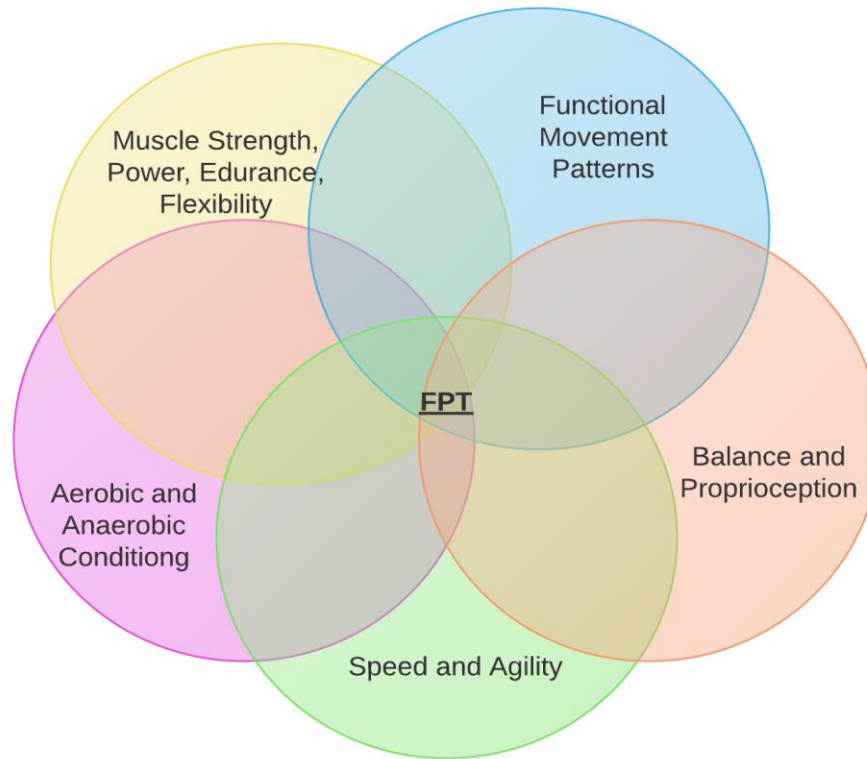
agility

coupled with psychological assessment evaluates readiness for return to play

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Functional Performance Testing



Functional Performance Testing for Power and Return to Sports

Robert Manske, DPT*[†] and Michael Reiman, DPT

In Conclusion

- Even with newer insights into subjective and objective evaluations of athletes recovering from soft tissue injury, there is still considerable opportunity for bias and error on the part of the treating physician.
- In sports medicine, there is a need for the clinician to rely on experience and instinct over objective clinical measures.

Athletes with a grade I or II lateral ankle sprain are at higher risk of experiencing a reinjure. Low-grade acute lateral ankle sprains result in a higher risk of reinjure than high-grade acute lateral ankle sprains

Reinjure after acute lateral ankle sprains in elite track and field athletes

Am J Sports Med. 2009 Sep;37(9):1755-61. doi: 10.1177/0363546509338107.
Epub 2009 Jul 17.

Malliaropoulos N¹, Ntessalen M, Papacostas E, Longo UG, Maffulli N.

There will be no difference in reinjure rate between low-grade (grades I and II) and high-grade (IIIA and IIIB) acute lateral ankle sprains.

Ankle sprains: 13-45%
(Fong et al. 2007)

Residual symptoms: ≈30%
(Wikstrom et al. 2013)

Pain
Swelling
Instability
Giving-way
Recurrent sprains
(Hiller et al. 2011)

Osteoarthritis: 68-78%
(Wikstrom et al. 2013)



- **Rehabilitation:**

Injury pathology specific

Sports specific

Level specific

Acute lateral ankle sprains: healing process and acceleration of rehabilitation.

Malliaropoulos N, Papalada A, Papacostas E, Maffulli N. *Int J Med.* 2008;1:3947.

Concomitant lesions

- Osteochondral lesions of ankle joint
- Sinus tarsi syndrome
- Peroneal tendon injury

Persistent Pain After Ankle Sprain: Is A Peroneal Tendon Injury The Cause?

Podiatry today, Sunday, 09/03/06, Volume 19 - Issue 9 - September 2006,

Author(s): Babak Baravarian, DPM

- Capsular avulsion injuries
- Syndesmosis injury (from sprain to avulsion)
- Foot injuries (midtarsal or metatarsal)

More severe injuries

- Maleolar fractures
- Maleolar fracture with syndesmosis injury
- Maleolar fracture with ligament injury

Back to playing in these athletes

- How to manage lesions:
 - Diagnosis
 - Treatment strategy (Repair, Fixation, Remove, Ignore)
 - Treatment quality
- Assessment
- Rehabilitation protocols (as do for ankle sprain)

Prognostic factors

Younger age, male gender, no or mild systemic disease and less severe ankle fracture are positive predictors of return to sports at 1 year and older age

Female gender, severe medical co-morbidities are negative predictors At 1 year, recreational athletes have higher likelihood to return to sports than competitive athletes

Prognostic factors

At 1 year, recreational athletes have higher likelihood to return to sports than competitive athletes

Colvin AC, Walsh M, Koval, KJ, et al. . Return to sports following operatively treated ankle fractures, Foot Ankle Int, 2009, vol. 30(pg. 292-6)

What to expect from an ankle fracture...

- Most ankle fractures take about 6-8 weeks to heal
- Patients treated operatively can usually return to bearing weight on the joint at 6-8 weeks
- Return to sports is usually at 10-12 weeks, once the ankle has been rehabilitated.

- Patients sustain an injury to the syndesmotic ligaments a second surgery is required at 4-6 months.