

Test Your Sports Injury Knowledge: The Ankle Sprain

Answer the following questions to test your knowledge on ankle sprains.

1. An ankle sprain typically injures what structures?
a. Muscles b. Tendons
c. Ligaments
2. Balance and stability are negatively affected with an ankle sprain, making athletic or high-skill activities difficult and potentially dangerous.
a. True b. False
3. Which of the following is the best way to treat a new ankle sprain, especially within the first two to three days following injury?
a. Heat pads or heat packs
b. Ice bags or ice packs
c. Topical pain creams
4. Gentle, functional rehabilitation is more effective than immobilization when dealing with a mild ankle sprain.
a. True b. False
5. Swelling from an ankle sprain can be managed using:
a. Elastic wrap or brace for compression
b. Ice bags or ice packs
c. Anti-inflammatory pain medicine
d. All of the above
6. It is recommended that individuals with a history of previous ankle sprains wear a supportive device such as tape or a brace when returning to physical activity to help reduce the risk of re-injury.
a. True b. False

(answers on back)

Anterior Cruciate Ligament (ACL) Injury & Prevention

ACL tear. You may have heard about this type of knee injury or know someone who has had one. ACL injury has a high prevalence in the athletic population and in high school sports. Because winter sports are starting and soccer teams are training for their spring season, Bronson Sports Medicine is gearing up for ACL injury prevention. A question that coaches, parents and athletes often ask is, "are there any ways to help prevent an ACL injury from happening?"

Bronson Sports Medicine's certified athletic trainer, Laura Thomas, MS, a certified Sportsmetrics™ instructor, has insight to this question. Sportsmetrics™ is a scientifically proven program designed specifically to prevent serious knee injuries in high school and collegiate athletes. This six-week program focuses primarily on proper form during specific athletic movements in conjunction with building overall strength. At the end of the six weeks, athletes will have increased their lower extremity strength and vertical jump height. They will also have decreased their lower extremity muscular imbalances. Most importantly, they will significantly lower their risk of suffering a serious knee injury.



1. Is there a particular population that is at risk for ACL injuries?



Correct



Incorrect

Although male and female athletes can both suffer an ACL injury, the most at-risk population are female athletes between ages 14 and 25. Incidents of serious knee injuries are five times higher in female athletes than in males. Anatomically, females have wider hips, causing their knees to collapse inward into a valgus position when jumping, turning, pivoting, cutting, decelerating and changing

direction while running. One in 100 female high school athletes and one in 10 female collegiate athletes suffer a serious knee injury each year. The majority are noncontact injuries in sports, such as soccer, basketball and volleyball.

2. What is the difference between a contact and noncontact ACL injury?

A noncontact ACL injury usually occurs during specific movements with improper form or muscle imbalance. Contact injuries occur upon collision with an opponent and are less preventable than noncontact injuries. Research shows that two thirds of all ACL tears are noncontact. Examples of common mechanisms for noncontact ACL injuries include:

- An athlete landing from a jump and their knees fall into valgus position
- An athlete landing on a fully extended knee
- An athlete suddenly decelerating while running

All of these cases put stress on the ACL and may cause it to tear. Most of the time a noncontact ACL injury is preventable if the athlete is trained on proper form and has proper muscle balance.

A giving-way episode will occur if the athlete doesn't react immediately with control, coordination and muscle strength.

continued on back

Ankle Sprains

Answers:

1. c. Ligaments connect bone to bone and this is the structure that is injured when a joint is sprained. When muscles and tendons are injured it is called a strain.
2. a. True. Rest and careful strengthening and balance work can help reduce the risk of re-injury when returning to activity.
3. b. Ice or cold therapy is recommended for new ankle sprains to help minimize pain and swelling. Heat therapy such as hot packs or heating pads may exacerbate swelling in the early stages of an injury.
4. a. True. Rehabilitation that involves stretching, strengthening and balance training can help to minimize muscle and joint stiffness that can hinder functional and pain-free return to play.
5. d. Cold therapy, compression and anti-inflammatory medicines all aid in reducing pain and swelling, and improve short-term function following an ankle sprain.
6. a. True. Using a supportive device that is semi-rigid or one that can be laced-up can help reduce the rate of re-injury. Taping is also a recommended way to reduce this risk.

How did you do?



This information has been adapted from the National Athletic Trainer's Association Position Statement: Conservative Management and Prevention of Ankle Sprains in Athletes 2013.

Helpful Hyperlinks

Bronson Sports Medicine

<https://www.bronsonhealth.com/services/sports-medicine/>

Sportsmetrics™

<http://sportsmetrics.org/>

Bronson Sports Medicine are team physicians for many area high schools, collegiate and professional teams. To see the entire list, visit:

<https://www.bronsonhealth.com/services/sports-medicine/team-physicians/>

Safe Kids Kalamazoo Sports Safety

<http://www.safekidskalamazoo.org/sports-safety.html>

Safe Kids Worldwide Sports Safety

<https://www.safekids.org/sports>

Michigan Athletic Trainers' Society Sports Safety

https://www.matsonline.org/en/public_resources/youth_sports_safety/

3. What type of measures can be taken to help prevent these types of injuries?

Athletes should be taught how to effectively warm up and how to use proper form for jumping, landing, deceleration and cutting.

Laura takes us through some examples of the types of exercises utilized in an ACL injury prevention program. Look in a mirror and give them a try! Does your knee stay aligned over your foot or does it fall inward toward the midline of your body?

Testing

Drop Jump Test

Athlete starts on a platform, jumps off, landing into a squat with both legs and jumps straight up into the air. The distance between their hips, knees, and ankles is measured. Check for proper hip flexion and if the knees fall into valgus position.



Single Leg Squat Test

Standing on one leg, the athlete tries to perform a squat. Check for proper hip, knee, and joint positioning. A poor test result is associated with weak hip and gluteus muscles.

Movements

Squat Jump

Begin in a fully crouched position as deep as comfortable. The knees and feet are directed forward and are in alignment with the hips. The upper body is upright with the chest open. The hands touch or reach toward the ground on the outside of the heels. Jump up, reaching as high as possible, and then return to the crouched position with the hands reaching back towards the heels.



Barrier Hop Side/Side



Use a cone or a barrier. Stand in a modified squat position and then hop over the barrier from one side to the other. Land with the same amount of knee flexion as the starting position.

For additional information on Sportsmetrics™, contact Laura Thomas, MS, ATC, at (855) 618-2676, ext. 4580, or email: thomalau@bronsonhg.org.