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The Truth about Post-Exercise Recovery and Muscle Soreness

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Athletes of all levels use techniques to reduce muscle soreness and recover faster. At the professional level, it's common to hear of elite athletes spending thousands of dollars per year on post-game recovery. From hyperbaric oxygen chambers to personal massage therapists, top-notch athletes seem to have limitless recovery resources at their disposal.

But do all these expensive therapies and extravagant techniques make a difference? The short answer is – probably not. In reality, the recovery process is less about a single recovery method and more about your overall approach to fitness and attention to detail.

It's difficult to imagine how amateurs could care for their bodies the same way professional athletes do, but they can! In this article, we will look at post-exercise recovery principles and shed light on how you can recover just like the pros, for a fraction of the cost.

True or False?
Soreness is inevitable.

True. Delayed-Onset Muscle Soreness (or DOMS) is the soreness that you experience one to two days after an intense workout. DOMS can be particularly painful if you do not exercise regularly and can even last for up to 10 days. There is evidence that recovery techniques such as cold-water

immersion, massage and heat wraps reduce muscle soreness following exercise, but there is still a lot of debate. The most effective way to combat soreness is to continue light activity and use whichever recovery strategy you like best.

True or False?
Stretching reduces muscle soreness.

False. Stretching is the one of the most widely recommended recovery techniques used by athletes today. But it has not been shown to reduce muscle soreness or improve performance in any meaningful way. The good news is that stretching does not seem to be harmful to the recovery process either. However, it should typically be used after a workout, where as a dynamic warm-up is best before. Over-stretching has been shown to decrease performance. Stretching is best utilized to improve muscle flexibility and increase joint range of motion.

True or False?
Timing of recovery matters.

True. Delayed-Onset Muscle Soreness is typically at its worst about two days after a workout. So it's important to start your recovery well before this peak occurs. You should begin the recovery process immediately after your workout has concluded. Most research is in agreement that recovery techniques are most effective if done within the first two hours after exercise.

True or False?
Muscle soreness is harmless.

False. Microscopic tears in your muscles cause muscle soreness. This is usually a good thing because these tears give your body a chance to build new, stronger muscle. However, it's possible to become so sore that your body's normal movements become affected. This can change your exercise mechanics and potentially lead to injury. If you feel that your normal exercise motions have changed to compensate for muscle soreness, reduce the intensity or volume of your training.

True or False?
Healthy nutrition and adequate sleep are the best ways to ensure proper recovery.

True. Nutrition and sleep are the two single most important factors to ensure a successful post-workout recovery.

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Inadequate sleep can affect your body's metabolism, inflammatory response and immune-system function. Each one of these is a critical factor that contributes to your body's ability to recover.

Proper nutrition is necessary to ensure that your body has the fuel it needs to recover from high-intensity workouts. A healthy, well-planned diet can promote rebuilding of damaged muscle. Ample hydration is also essential to replace fluids and key nutrients lost in sweat during exercise.

Bottom Line: It doesn't matter which post-exercise recovery strategy you select. Most techniques are not detrimental to your recovery. You should choose one that works best for you, while also focusing on quality sleep and nutrition. Ultimately, consistent exercise and healthy lifestyle habits will help you to prevent excessive muscle soreness before it occurs.

5 Things to Ask Your Doctor About Jammed Fingers

Jacklyn D. Kiefer, DO

The classic 'Jammed Finger' results when the end of finger comes into forceful contact with another object – a ball, the floor, equipment or another player. These injuries range from a relatively minor sprain, strain or bruise to more severe like a ligament tear, fracture or dislocation. Pain happens immediately after impact and sometimes occurs with a snap or pop. Typically, the finger will become difficult to use and bend during the next few minutes or hours.

Can I keep playing?

If there is a noticeable deformity where the finger is not aligned or dislocated, you should sit out and be evaluated immediately. If the pain is to the sides of the knuckle and you can bend and straighten it, you may be able to buddy tape it to the neighboring finger and continue to play.

How should I treat this injury initially?

Remove any rings right away. The most common symptoms following a jammed finger are pain, swelling, bruising and loss of movement. The following approach should be used initially:

- Elevate the finger, ideally above the level of your heart.
- Ice for 15-20 minutes then off for the same amount of time to avoid damage to the skin.
- Buddy tape the finger to its longer neighbor – which acts as a splint and can help stabilize the injured one.
- Gentle bending and straightening, as tolerated, in order to improve range of motion
- Medication: Acetaminophen or an anti-inflammatory medications like ibuprofen to help with pain.

What symptoms should make me see a doctor sooner rather than later?

Feeling a pop or snap could indicate you tore a ligament or tendon, or perhaps even broke a bone. These types of injuries should prompt you to be evaluated sooner. If there is any deformity, you should seek care immediately, as this points to a joint dislocation or serious fracture. Any finger injury where you cannot bend or straighten one of the joints on your own warrants an evaluation by a physician, including an X-ray to rule out a bony injury.

Do these injuries ever require surgery?

Most jammed fingers do not require surgery. However, if you have a fracture involving the joint or a significantly misaligned fracture, you may need surgery to regain full function.

How long does it take for these injuries to get better?

Most jammed fingers take about two to six weeks to fully heal. However, as tenderness and motion improve the finger can be buddy taped, and you may be able to return to play with appropriate protection by taping or bracing. Range of motion and strengthening can usually be done on your own and no further treatment is needed. Fractures take about 4-6 weeks to heal and will require bracing/immobilization during that time, and more therapy may be needed to regain full function. However, some swelling of the joint can last for six to nine months.

Sports Hernias

By Adae Amoako, MD

What is it?

Athletic pubalgia, also known as a "sports hernia," involves an injury to the muscles, tendons or ligaments that attach to the pelvic bone from above or below. True hernias involve abdominal tissue pushing through the abdominal wall or the inguinal canal, causing similar symptoms, making the diagnosis of "sports hernia" difficult. The highest incidence occurs in ice hockey, soccer, rugby and tennis, as these sports require sudden direction changes and twisting movements, which often leads to these injuries. This article will review athletic pubalgia and its treatment.

Symptoms

Sports hernias typically come with groin pain that can start either acutely or develop slowly without a specific injury. Pain typically improves with rest and ice initially. However, pain usually resumes when you return to activity and can also happen with activities such as coughing or sneezing, mimicking true hernias. If you are experiencing symptoms that are not improving or that affect your activities, you should be evaluated by a sports medicine physician.

Sports Medicine Evaluation

Physical Exams: During your exam, the physician will examine the tender area, typically on the upper portion of the pubic bone or along the inguinal ligament. You should also be checked for true hernias, by exam or ultrasound. One of the common exams done is the "resisted sit-up test." You will be asked to do a sit-up with your legs braced and being pushed back down. Another test used is resisted adduction. In this test, the doctor will ask the patient to bring an opened leg close to the body while being resisted. Pain with these tests indicates a possible sports hernia. However, these tests are not specific to athletic pubalgia, and your physician will discuss the need for further diagnostic tests.

Diagnostic Tests: X-rays, ultrasound and MRI can rule out other causes of groin pain like snapping hip syndrome, true hernias or hip impingement. MRI is the most specific imaging test and usually shows inflammation in the involved tissues at their attachment to the pubic bone. Ultrasound is helpful in the diagnosis, but its sensitivity depends on the patient.

Treatment

Non-surgical: Treatment starts with cross-training and avoiding all activities that make the pain worse for 6-8 weeks. After the period of rest, physical therapy is prescribed to guide core and hip adductor strengthening for an additional six weeks. If successful, most patients can return to sports in 10-12 weeks after the onset of symptoms. Sometimes, the doctor will inject either platelet rich plasma (PRP) or corticosteroids to help with the pain. Return to play while injured is not believed to make problem worse and completely depends on the athlete's comfort level.

Surgical: In severe cases where injury is not responding to the above treatment after three to four months, surgical intervention should be considered. Most athletes can return to sports 6-12 week after surgery.

Injury Prevention

Core strengthening has been shown to be effective for reducing the risk of this injury. However, there are multiple factors that put athletes at risk for sports hernias, and to date there is not a specific prevention exercise program.

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COACH'S CORNER

Apophysitis Treatment and Management

By Andre Anderson, MD and Michael Swartzon, MD

The apophysis is the cartilage growth plate found at the insertion site for tendons. It is under high amounts tension during adolescent growth spurts, when our bones lengthen faster than our muscles and tendons.

Apophysitis is an injury caused by repetitive movements involved in certain sports and activities. It is most common in between the ages of 10-16 years old, especially during periods of rapid growth. Other risk factors include relative inflexibility and "pushing" through pain. We will talk about some of the most common sites where apophysitis occurs. Unfortunately, the names of different types of apophysitis can be confusing because they are named for a person, rather than their location. It is best to think of these injuries as the same process in different body parts.

"Little Leaguer's Elbow" is a common overuse apophysitis that happens at the inside of the elbow where the wrist and finger flexors attach. It's often found in pitchers, but can also affect other overhead athletes like tennis players. Certain types of pitches, such as curveballs and sliders, create increased strain at the elbow and may increase the risk for this condition. Other risks include greater than recommended pitches per game, throwing fastballs over 85 mph and continued pitching despite fatigue or pain. Symptoms include pain and in severe cases difficulty fully extending the elbow. Treatment consists of no throwing or limited throwing for 2-6 weeks, depending on symptoms. Ice massage can help decrease swelling. A rehabilitation program should focus on shoulder flexibility and rotator cuff, forearm strengthening and pitching mechanics. Athletes, parents and coaching staff should focus on prevention that includes pitch counts across all leagues and not playing baseball year-round. The Little League has issued specific pitch counts for your reference.

The foot has two sites of apophysitis. "Sever's" occurs at the Achilles tendon insertion at the heel and "Iselin's" happens at the 5th metatarsal bone found on the outside of the foot. Sever's occurs in runners and sports that involve a lot of running and jumping. Inselin's occurs in sports with repetitive cutting, such as basketball, soccer and dancing. Both present with activity related pain at the tendon's insertion site. Both are treated with rest for 2-6 weeks, and in severe cases, short-term immobilization in a cast or boot might be necessary.

"Osgood-Schlatter's" happens on the bony bump below the kneecap. Like other apophysitis, it occurs during growth spurts in sports that involve repetitive running and jumping. This affects up to one in five adolescents. In severe cases, X-rays are used to rule out a more severe bony injury. Treatment is similar to other apophysitis. In addition, a patellar tendon strap may be helpful. It's important to note that symptoms may persist for up to two years and will resolve once growing slows. However, symptoms can persist into adulthood in up to 10 percent of cases.

The above conditions are some of the more common locations for apophysitis but there are many more. For instance, there are multiple areas in the hip at risk for apophysitis that aren't discussed here. Rest and decrease in activity guided by pain is the main treatment for these types of injuries. Imaging is rarely needed except in severe cases to rule out a pulling or tearing type of injury. Coaches should know the common sites of apophysitis and encourage players to not push through and to report any pain or fatigue. Symptoms are self-limited and resolve with early and proper management. The change of re-aggravating these injuries is common but stops once the growth plates close (approximately by age 16). Prognosis is usually excellent; however, complications such as fracture to the bone or persistent symptoms into adulthood can occur. Always consult a physician if there is persistent pain affecting play.

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