EmergeOrtho

Eight Tips to Prevent Overuse Injuries

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The benefits of participating in a favorite sport or physical activity are plentiful. In addition to physical results such as increased endorphins, strength-building, and cardio health, sports involvement builds confidence, strategic thinking, team-building skills, and more. To ensure you or someone you care for can continue to enjoy the rewards of physical activity, it is important to make overuse injury prevention a priority.

Unlike an acute injury (such as an ankle sprain or fracture) which may occur suddenly and unexpectedly, an overuse injury develops over time. Although overuse injuries can be due to occupational activities, they are commonly sports-related. Routine sporting activity often causes repetitive stress to different joints in the body, resulting in an overuse injury.

Are overuse injuries treatable? Yes! In fact, we address a variety of overuse injuries at EmergeOrtho—Triangle Region. And, we will explain how a little later. The focus of this eBook, however, is to help **provide valuable insights into common overuse injuries and how to prevent them.**

Throughout this manual for overuse-injury prevention, our board-certified Sports Medicine Team Physicians offer strategies and insights to stave off overuse injuries. While our physicians are highly skilled in treating shoulder impingement, stress fractures, and similar overuse outcomes, our ultimate hope is that we can help you avoid them!

In Eight Tips to Prevent Overuse Injuries you will learn about:

- Potential causes and risk factors that lead to an overuse injury
- Common types of overuse injuries and their symptoms
- Eight helpful overuse injury preventative strategies
- Comprehensive treatment options for when an injury does occur
- Multiple ways EmergeOrtho—Triangle Experts empower patients to Emerge Stronger. Healthier. Better. We use evidence-based preventative strategies and multi-faceted treatment approaches.

Overuse Injury Causes and Risk Factors

In the intro to this eBook, we briefly discussed how overuse injuries differ from acute injuries in that they take place over time—not suddenly.

Now, we take a deeper look at the potential causes and risk factors of overuse injuries:

- **Intense Repetition**
  Think about the repetitive motions enacted by baseball pitchers, tennis players, and football quarterbacks. In these sporting positions, constant stress is placed on the shoulder, elbow, and wrist. This repeated stress leads to damage over time, producing conditions such as tendinitis (inflammation of the tendons).

- **Insufficient Rest**
  The wear and tear of repetitive motion over time may be accompanied by a lack of rest. In an eagerness and/or sense of obligation to return to a sport, it is common for athletes to resume activity prematurely. This means that the injured area does not have sufficient time to heal before the next injury.

- **Improper Training and Technique**
  Launching full-steam ahead into a new sport and/or abruptly increasing the intensity or duration of an existing sport or physical activity can lead to an overuse injury. Utilizing the incorrect technique— in overhead throwing, golf-club swinging, for example—can also be detrimental, overloading certain muscles not accustomed to withstand stress.

- **Single-Sport Specialization**
  An increasingly prevalent trend among young athletes, single-sports specialization is widely acknowledged to produce more overuse injuries. Repetitive use of one area of the body eventually leads to overloading, and in turn, injury. Cross-training, as we will discuss further in the prevention section of this eBook, is paramount in avoiding overuse injury.

Overuse in Adults vs. Children

While the exact number and frequency of overuse injuries remain difficult to determine, research demonstrates a growing number of overuse injuries in youth sports.

According to the National Youth Sports Health & Safety Institute, an estimated 45 million children between the ages of 6 and 18 are involved in an organized sport, which is a 75% participation increase since 1970. As youth sports participation rises, there has also been an increase in single-sports specialization, often leading to overuse injuries.

Common Types of Overuse Injuries

There are several types of overuse injuries, most of which affect multiple areas of the body. Some of the most common overuse injuries include:

- **Bursitis**
  The bursae are small fluid-filled sacs that cushion the joints. When the synovial fluid inside a bursa becomes infected or irritated from repetitive stress, the condition is referred to as bursitis. Bursitis often affects the shoulder, knee, hip, elbow, and heel.

  Symptoms of bursitis include pain and limited range of motion in the joint.

- **Lateral Epicondylitis (Tennis Elbow)**
  Although tennis and other racquet sports are most commonly associated with lateral epicondylitis (also called tennis elbow), any kind of repeat stress tendons and muscles in the forearm can cause this condition to develop. Most often, tennis elbow is diagnosed when the extensor carpi radialis brevis (ECRB) muscle that stabilizes the wrist experiences microscopic tendon tears from repetitive stress.

  Symptoms of lateral epicondylitis include pain and tenderness in the elbow area (often along the outside of the elbow). Weakened grip can be an additional symptom associated with tennis elbow.

- **Medial Tibial Stress Syndrome (Shin Splints)**
  Runners are often susceptible to medial tibial stress syndrome, more commonly known as shin splints, a condition that produces pain along the inner edge of the tibia (shinbone). While shin splints occur from repeated stress, the condition is often seen in those belonging to the "improper training and technique category," where the athlete has not used a gradual-training approach.

  Symptoms of medial tibial stress syndrome include pain that worsens during and after activity; pain that can be sharp, dull, or throbbing; sore to the touch, and painful on the inside of the shinbone (as mentioned earlier).

- **Shoulder Impingement Syndrome**
  When the shoulder blade puts pressure on the rotator cuff when the arm lifts, the structures in between the rotator cuff and bursa become "impinged." Swimmers, volleyball and tennis players, and other overhead throwing athletes are particularly susceptible to this type of overuse injury.

  Symptoms of shoulder impingement include inflammation, pain, and difficulty moving the shoulder and arm (especially without pain).

- **Stress Fractures**
  Upwards of 50% of all stress fractures impact the lower leg. It makes sense, given this statistic, why runners, basketball players, and tennis players are more likely to acquire this type of overuse injury.

  A stress fracture occurs when muscles become fatigued, transferring stress overload to the bone. The bone, unable to handle the excess stress, produces a tiny crack or cracks. Often, stress fractures happen to those belonging to the "improper training and technique category." We frequently see this injury in athletes who train on uneven pavement and surfaces.

  Symptoms of a stress fracture include pain (which often increases with activity).

- **Tendinitis**
  Earlier, we mentioned tendinitis as a frequently-diagnosed overuse injury. Tendinitis describes the inflammation and irritation of the tendons. And, since tendons can be found throughout your body—tendinitis can be quite common in both the upper and lower extremities: shoulders, elbows, wrists, knees, and heels, as examples.

  Tendinitis is linked with tennis elbow, golfer's elbow, pitcher's shoulder, swimmer's shoulder, and jumper's knee.

  Symptoms of tendinitis include tenderness, swelling, and pain. Pain is often described as dull or aching, especially with movement of the affected area.

What we Can Learn About Overuse Injuries in Collegiate Sports

In the "Epidemiology of Overuse and Acute Injuries Among Competitive Collegiate Athletes," in the Journal of Athletic Training, revealed the following insights regarding overuse injuries in college athletes:

- Overuse injuries prevailed over acute injuries, accounting for upwards of one-quarter of all injuries (out of 573 male and female athletes in 16 collegiate sports teams)
- More athletes who experienced overuse injuries did not miss out on sports' participation than those who experienced acute injuries.
- Female athletes experienced a higher incidence of overuse injuries than male athletes.

Preventing Overuse Injuries

One promising aspect of overuse injuries is that most respond well with the aid of conservative treatment methods, which we explore in greater detail in the next section.

Even before we discuss treatment, injury prevention is key. At EmergeOrtho—Triangle Region, our Sports Medicine Team, Athletic Trainers, and collective subspecialty-area doctors are leaders in **injury prevention strategies**.

Overuse injuries can be prevented by implementing several prevention strategies:

1. Practice Appropriate Training and Technique
So far, we have mentioned many instances in which overuse injuries occur as the result of improper training and technique. Part of ensuring you employ the right kind of physical activity is practicing a graduated approach. In other words, rather than going full-steam ahead in your sport of choice, you should gradually increase the duration, intensity, and frequency of your training.

And, take the time to research the appropriate ways to swing a club, racket, and bat to prevent overtaxing ligaments, tendons, and muscles that are yet unused to these movements.

An experienced athletic trainer can create a customizable training program and confirm that you are using the correct body mechanics.

2. Use the Correct Equipment
An overused and ill-fitting running shoe, too-heavy baseball bat, or wrong type of clothing and protective-sports gear can increase the likelihood of an overuse injury. Take the time to make sure you have the appropriate equipment for your chosen sport. Again, an experienced coach, athletic trainer, and sports medicine specialist can help you in this endeavor.

3. Warm-Up
Warm-ups before launching into any sporting activity can significantly reduce the risk of injury. According to research, upwards of 50% of sports injuries are muscle-related. When muscles are cold, there is a greater potential for muscle tears and injuries. To prevent an injury due to cold, stiff muscles, a brief warm-up of just five minutes of low-intensity jogging, jumping jacks, or stretches increase blood flow and raises your body temperature.

4. Cool-Down
Similar to how a warm-up raises body temperature and primes muscles for higher intensity, a cool-down helps lower body temperature, regulate your heart and blood pressure, and provides an opportunity to perform stretches that lengthen and strengthen the muscles.

5. Implement Balanced Fitness
Earlier, we mentioned the dangers of single-sports specialization. To avoid a certain area of the body from overload or overuse, as happens when playing a singular sport, integrating different body mechanics can help reduce the risk of injury. Additionally, combining cardiovascular exercise, strength training, and stretches will help create balance.

6. Rest
The body needs time to rest and recuperate, especially following periods of intense exercise and activity. When athletes reach a point of exhaustion, their mental and physical clarity diminishes, increasing the probability of an injury.

7. Hydrate
Remaining hydrated ensures that your body maintains a regulated heart rate, the right levels of electrolytes and glycogen, and anaerobic power. It is best to drink at least one pint of water 15 minutes prior to playing a sport or working out. Water should be consumed routinely during a workout if possible. Keeping yourself hydrated means that your muscles are also safer from symptoms of dehydration—such as cramping—which further protects you from injury.

8. Restrict Year-Round Sports
To reduce the risk of overuse injury commonly associated with single-sports specialization, it is particularly important for young athletes to limit the play of a singular sport throughout the year. It is equally important that children vary the sports they play.

50%

According to the American College of Sports Medicine, an estimated 50% of overuse injuries in children and adolescents can be prevented.

Treatment for Overuse Injuries

We briefly mentioned that overuse injuries most often respond favorably to conservative treatment, allowing athletes to return safely to their sport of choice.

At EmergeOrtho—Triangle Region we utilize a wide array of non-surgical treatment options for overuse injuries.

Our Sports Medicine Specialists use precision diagnosis to determine the type and severity of overuse injury to determine the best, personalized treatment plan, which may include:

- **Steroid injections**
- **Splinting**
- **Physical therapy and exercises to help improve strength, flexibility, and mobility**
- **Rest**
- **Modification of exercise intensity, frequency, and duration**

In the event that conservative treatment does not effectively address the symptoms associated with an overuse injury, some conditions may be addressed surgically.

Emerge Stronger. Healthier. Better.

As our guide on overuse injuries has helped demonstrate, our EmergeOrtho—Triangle Region doctors have the expertise, skills, and dedication to patient-centered care.

Our priority is to return all patients to the activities and lifestyle they enjoy. To do so, we not only treat the injuries and conditions of our patients, but we also provide them with prevention strategies that are derived from evidence-based research. We believe that when it comes to helping prevent and treat injuries, multi-faceted and personalized approaches work best.

To learn more about overuse injury prevention or EmergeOrtho—Triangle Region orthopedic services and specialties, we encourage you to reach out any time by calling **(919) 220-5255.** Or, schedule a consultation with one of our experts now.

Triangle Region

800.359.3053

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