Overuse Injuries in the Young Athlete

With summer in full swing and fall around the corner, it's a very active time for young athletes. With the increase in training and competitive sport, overuse injuries are becoming more common. To help minimize injury, sports medicine experts offer advice on recognizing the symptoms of overuse injuries and understanding the importance of prevention as well as proper technique.

There are two types of sports injuries: **acute injuries** and **overuse injuries. Acute injuries** happen after a single, traumatic event. Examples include ankle sprains, shoulder dislocations and hamstring strains. **Overuse injuries** develop more slowly over time and are the more common injury in sports. Common examples include tennis elbow, Little League elbow, runner's knee, Achilles tendinitis and shin splints.

Why do overuse injuries occur?

The human body has an amazing capacity to adapt to physical stress. Exercise and activity puts a "good stress" on our bodies and is beneficial in helping bones, muscles, tendons and ligaments become stronger and more functional. When we participate in physical activity, an internal process of "remodeling" is constantly taking place. This remodeling involves a balance of breakdown followed by buildup of tissue. When breakdown occurs more rapidly than buildup, the resulting imbalance can lead to an overuse injury.

What factors cause overuse injuries?

Overuse injury is usually due to too frequent and repetitive stress on tendons, muscles, and joints. Training errors are the most common cause of overuse injury. This includes too rapid an acceleration in intensity, duration or frequency of an activity. Certain athletes may be more prone to these injuries due to an imbalance between strength and flexibility. Body alignment, knock-knees, bowlegs and improper landing can also impact and predispose to overuse injury. Finally, factors with equipment (i.e running terrain, shoe type, braces) can also play a role.

How are overuse injuries usually diagnosed?

These injuries are often hard to recognize, as athletes may dismiss early signs as minor aches or pains. They can occur at any age, but are especially common in young athletes performing consistent, repetitive activity such as throwing (upper extremity injuries of the shoulder and elbow) or running (lower extremity injuries in the hip and knees). Symptoms include:

- Prolonged muscle pain, aching or soreness
- Weakness, loss of motion and swelling of the involved joint
- Decreased throwing velocity or running speed
- Pain with that particular activity

The diagnosis is usually made after a thorough history and physical examination. This is best performed by a sports medicine specialist with specific knowledge of your sport or activity. In some cases, x-rays are needed and occasionally, MRI may be required as well.

What is the treatment for overuse injuries?

Some tips for treating overuse injuries include:

- Cut back on the frequency and intensity of an activity
- Implement a hard/easy workout schedule
- Cross-training: In off-season, participate in a different sport.
- Allows a specific joint like the shoulder or knee rest and recovery.
- Pitchers can try running or cycling. Soccer players can avoid impact running and instead, try swimming
- Learn proper technique and warm-up/cool-down from a coach or trainer
- Use ice after an activity for minor aches and pains
- Use anti-inflammatory medications as needed

Can overuse injuries be prevented?

Most overuse injuries can be prevented with proper training and common sense. Learn to listen to your body. The 10 percent rule is helpful. Usually, you shouldn't increase your training program or activity more than 10% per week. This will allow your body the time it needs to recover. It also applies to increasing pace or mileage for walkers and runners.

Cross-training involves using various sports or exercises to improve overall performance. This creates different physical stresses on an athlete's body, versus those associated with the athlete's usual routine, improving overall performance while decreasing the risk of an overuse injury. This variability improves strength, power, and agility and also decreases the repetitive stress applied to the same one or two body parts that their typical program applies. For instance, a swimmer training for a meet might benefit from a long run once a week to decrease stress on the shoulders.

Warm up and cool down properly before and after activity. Working on flexibility as well as strength training and focusing on core stability will also help minimize overuse injury.

When the symptoms become anything more than minor, or last more than 1-2 days, seek the advice of a trainer or sports medicine specialist. These injuries are often more easily treated if caught early.

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For more info, please visit trivalleyorthopedic.com and orthoinfo.org