

## WELLNESS UPDATE 2001, #2

### OVERUSE INJURIES

Overuse injuries in athletics often go unnoticed and untreated because they are not the result of an acute, or sudden, injury. Yet, they can impair an athlete's performance just as much as a sprain or strain. **Overuse injuries commonly occur in the form of muscle soreness or cramps, tendinitis, shin splints, pain in the front of the knee, and stress fractures.**

**Overuse injuries can be the result of growth spurts, genetic abnormalities (such as “knock knees” or “flat feet”), lack of general conditioning before beginning a training program, inadequate rest between training sessions, or poor training techniques.** Some specific examples of poor training techniques which may lead to overuse injuries include: **1) dramatically increasing training mileage/yardage, 2) dramatically increasing the speed at which training is taking place, 3) greatly increasing the number of workouts per day or week, 4) overtraining certain muscle groups with either too much resistance or too many repetitions, 5) lack of stretching or poor flexibility training, 6) creating muscle imbalances by not training the muscles on both sides of a joint, or, 7) the use of poorly designed equipment.**

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**The first indication of an overuse injury is often soreness in the affected area, before and after activity.** The affected area usually feels better after warm-ups and during activity. Athletes often continue activity when suffering from an overuse injury as it tends to feel better as they warm up. As the injury becomes further aggravated due to continued use, activities become increasingly difficult to perform and swelling may occur. **If the athlete continues to participate without making any changes in his/her workout, or treating the injury, the overuse injury may very well become worse, requiring the athlete to reduce, or stop, physical activity for several days to several weeks.**

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## **PREVENTION**

**Prevention is the key to overuse injuries.** When such injuries occur they can hinder an athlete's performance for weeks or months. **Prevention of overuse injuries includes engaging in a comprehensive pre-season conditioning program which includes strength training, flexibility exercises, endurance training, and anaerobic training.** Once the season has begun, athletes should concentrate on proper training techniques and set realistic goals for improvement. **Athletes should limit any increases in training distances, frequency, or intensity to no more than 5 - 10% per week. ONLY ONE of these areas should be increased per week.** It is also important to follow a day of hard workouts with a day of easy workouts, or rest. Prevention of overuse injuries should also include an evaluation of training techniques and surfaces.

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**Muscle soreness is inevitable during training and conditioning.** If athletes stretch well, **before and after every practice or competition**, muscle soreness can be kept at a minimum. Monitoring athletes while they stretch ensures they are performing the stretches properly and effectively. Remind athletes proper warm up and stretching are important in preventing injuries, even on hot days.

**Over-distance training**, i.e., training for events at weekly mileage/yardage far greater than competitive distances, **may pose a special risk for high school student-athletes** due to lack of training experience and incomplete physical development. As part of a varied program, including both interval and continuous training, over-distance training can be effective. However, **continual increases in training distances, or excessively high training distances, may develop higher rates of overuse injuries.**

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## **TREATMENT**

Athletes often treat themselves during the early stages of overuse injuries. By applying ice after activity, the pain diminishes and the swelling can be somewhat controlled. Athletes should understand that **persistent pain that becomes worse, or continues without any improvement for 3 - 5 days, should be reported to the coach or athletic trainer for proper examination and treatment.**

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Rest from the offending activity may be the preferred treatment for overuse injuries, but complete rest is not always practical in competitive athletics. While it may not be necessary to discontinue all activity, **activities which aggravate the injured area should be modified or stopped.** If an athlete is suffering from a minor overuse injury, the use of rest, cold or heat therapy, and an enhanced flexibility program, may allow the athlete to continue participation with a minimum of discomfort and performance loss. **If, after several days of such treatment the injury has not improved, referral to a medical professional for examination and treatment is appropriate.**

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Aspirin, ibuprofen, and other anti-inflammatory medications can be very helpful in reducing swelling and controlling pain caused by overuse injuries. **These medications should only be used under the advice of a medical professional to ensure the proper dosage and explanation of any possible adverse effects.**

**Pre-participation treatment should consist of applying ice to the injured area for 10 - 15 minutes. A whirlpool, or other form of moist heat, for 15 -20 minutes immediately prior to activity may also be helpful. (Please refer to Update 2001, #1 for further treatment guidelines.)** The choice of ice or heat should depend upon which treatment effectively reduces the athlete's discomfort or pain during participation. **After treatment, but prior to beginning activity, proper stretching of the area is critical to the reduction of pain during activity.**

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Athletes with overuse injuries may very well have some discomfort during participation, but **if an athlete suffers pain in the affected area, he or she should stop the activity and ice the area immediately.** Following the application of the ice they should follow a stretching routine. Athletes who are able to participate throughout the entire session should ice the area immediately after practice for 10 - 15 minutes, and again 2 -3 hours later.

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**Questions and comments about overuse injuries, or other areas of student-athlete wellness are welcomed and encouraged. They should be directed to Alan Beste, LAT, Administrative Assistant, Iowa High School Athletic Association, PO Box 10, Boone, IA 50036. (515) 432-2011. <abeste@iahsaa.org>**

**Sources:** Andrish, Jack, MD. "How I Manage Shin Splints," The Physician and Sportsmedicine, Volume 18, Number 12, December 1990; Arnheim, Daniel, D. Modern Principles of Athletic Training, St. Louis: Times Mirror/Mosby College Publishing, 1989; Case, William, P.T. "Jumper's Knee," The Physician and Sportsmedicine, Volume 20, Number 8, August 1992; DiFiori, John, P. MD. "Overuse Injuries in Children and Adolescents," The Physician and Sports Medicine, Volume 27, Number 1, January 1999; Gerry, Brian, A.T.C. "Easing the Pain of Jumper's Knee," Drug-Free Athlete, January 1992; Gerry, Brian, A.T., C. "Prevention, Treatment of Shin Splints," Drug-Free Athlete, June 1991; Leach, Robert, MD, Schepesis, Anthony, MD, Takai, Hiroaki, MD. "Achilles Tendinitis: Don't Let It Be An Athlete's Downfall," The Physician and Sportsmedicine, Volume 19, Number 8, August 1991; Nelson, Kari. "Early Diagnosis, Care of Shinsplints Minimizes Effects of Bone Injury," National Federation News, March 1992; Nesbitt, Lloyd, DPM. "Biomechanics and Shin Splints", The Physician and Sportsmedicine, Volume 19, Number 5, May 1991; Rice, Greg, A.T., C. "Those Mysterious Shin Splints," Drug-Free Athlete, November 1990; Rizzo, Thomas, Jr., MD. "Getting a Leg Up On Anterior Knee Pain," The Physician and Sportsmedicine, Volume 19, Number 10, October 1991; Rizzo, Thomas, Jr., MD. "Patellofemoral Syndrome," The Physician and Sportsmedicine, Volume 20, Number 12, December 1992; Roselund, Dawn. "Preventing Overuse Injuries," Coaches Chalk Talk, July/August 1993, American Coaching Effectiveness Program, PO Box 5076, Champaign, IL; Stachenfeld, Nina, MA, Gilbert, Gleim, PhD, Nicholas, James, MD. "Endurance Training," The Physician and Sportsmedicine, Volume 20, Number 8, August 1992.