THE RISK OBSERVER

STARTING A NEW SPORTS SEASON

The beginning of each new season places heavy demands on the athletic director and the coaching staff. There are innumerable tasks to be accomplished and at times there does not seem to be enough days in the week to cover everything that has to be done. We are obligated to follow procedures that reduce or eliminate serious injury to the extent we can anticipate and modify the causes.

Warm Up

Warm-up exercises should be done before engaging in any type of significant physical activity to minimize the chance of suffering an activity-related injury.

All warm-up sessions should include two components and begin with a short jog or brisk walk of 4 or 5 minutes to raise intramuscular temperatures, and allow the cardio respiratory system to adjust to the impending increase in workload associated with the activity itself.

Flexibility exercises gradually increase the elasticity of various muscle groups reducing the probability of such problems as chronic muscle soreness, strains (muscle pulls), and recurring lower back pain. It is suggested that jogging or walking be done first to elevate muscle temperature, making the muscle more receptive to stretching.

Although it has become popular to stretch the muscles by using a "bouncing" motion while in the stretched position, this practice is not recommended. When stretching a particular muscle group, that group should be placed in a stretched position, and held there for a period of 30 - 45 seconds. It may also be helpful to repeat each exercise to receive maximum benefit. Second, it is important to stretch **every** muscle group, which will be used in the activity. A sound guideline is to simply stretch all major muscle groups, shoulder complex, upper back and neck, lower back, groin or adductors, hamstrings, quadriceps, calf and Achilles tendon.

Heat Stress

Heat stress results from the inability of the body to adjust to extreme heat and/or humidity.

Acute water loss results in dehydration and possible severe hemoconcentration and the acute loss of extra cellular sodium via profuse sweating. The result is loss of the intracellular potassium required for the transmission of nerve impulses and energy release.

Typical methods of preventing heat stress are acclimatization or preseason training that gradually moves from shorts and shirt workouts to full uniform work. The use of mesh uniforms to assist in the evaporation of body perspiration should be considered. Water should be provided at the exercise site.

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Activity adjustment based upon existing weather conditions may be necessary. A guide to such adjustment is shown here:

Temperature	Relative Humidity	Activity Adjustment
80° - 90°	Below 70%	Proceed with caution, being constantly aware of heat stress symptoms in athletes.
80° - 90°	Above 70%	One10-minute fluid replacement break for every hour of practice or time.
or		
90° - 100°	Below 70%	
90° - 100°	Above 70%	Conditions indicate a definite danger to exercising athletes, and practice of a normal type should not be held.
or		
Above 100°	Below 70%	

Pre/post practice weighing may be used only to determine exercise-induced body fluid loss. **A weight loss of 3% or more during a single practice session may be dangerous and post practice fluid replacement and observation is indicated.**

Water should be available to practicing athletes at all times during the activity period.

Artificial cooling of exercising athletes is helpful and can be assisted by cool water towels available during breaks and sideline fans or fanning with towels during breaks.

The major symptom of heat cramps is simply the knotting or uncontrollable contraction of a muscle induced by excessive perspiration or repetitive muscle contraction activity.

The symptoms of heat syncope are fainting, weakness upon waking, grayish skin tone, severe fatigue, blurred vision, and elevated temperature. The care for an athlete suffering heat syncope is best accomplished by having the player lie down, elevating his or her legs, placing the player in a shaded area, or air conditioned room, and giving small amounts of saline solution. It is all right for the player to practice the next day if the symptoms have all disappeared completely, but this should be a judgment by the coach and/or trainer not the student.

The symptoms of heat exhaustion are: headache, nausea, vomiting, dizziness, fatigue, lack of coordination, and reduced sweating. Care consists of prolonged rest in a cool place with elevated legs, and sponging with cool towels. Give the participant small amounts of saline solution and be sure to consult a physician before reactivating the player.

The symptoms of heat stroke are obvious dehydration with hot and dry skin, a body temperature of 104° - 106° and one or more of the following: loss of muscle tone, irrational behavior, seizures, cyanotic tendencies, vomiting, rapid, shallow breathing, and rapid pulse. The victim may easily slip into a coma.

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Care for the heat stroke victim is critical and should consist of lowering the player's body temperature as quickly as possible by stripping the athlete of all unnecessary clothing, fanning and sponging the athlete with, or immersing in cool water. Heat stroke can cause death. Your quick reaction to this emergency can save a life! And don't overlook the possibility that heat stress can occur in other than hot weather. Indoor conditions or inappropriate clothing may be the cause of heat stress in its early stages in cooler seasons.

Drugs

Many substances are taken specifically by athletes with the belief that they will improve performance.

The following provides limited information about some of the more common drugs used in this way at all age levels and even in some cases with parental approval.

Amphetamines stimulate the central nervous system. Often found in cold medicines and "diet pills", amphetamines are used by athletes to produce a feeling of "being up", to attempt to delay fatigue and to increase aggression. Because of its paradoxical effects on the cardiovascular systems and its masking of the fatigue response, this is a very dangerous drug when used during exercise of any type. Amphetamine use is banned by the International Olympic Committee and research has failed to demonstrate any performance enhancing effects associated with amphetamine intake.

Anabolic steroids are drug compounds containing male hormones. They are often used by athletes with the belief that they will produce gains in muscle size and strength. **Anabolic steroids are considered to be among the most dangerous drugs used by athletes in an attempt to gain an "edge".** Their use by adolescents is particularly dangerous with many long term and chronic side effects such as degenerative disease of the hip and knee. A known side effect of steroid use is water retention, so it is speculated that increases in muscle size may be the result of increases in intra-muscular water retention. This group of drugs is banned by the International Olympic Committee, NCAA, and other similar organizations.

Creatin is an over-the-counter substance, which has become very popular with strength builders. There is little medical evidence to support or question the use of Creatin; however, there have been negative anecdotal reports.

Somatotropin is a growth hormone usually extracted from the pituitary glands of cadavers or primates. It is used in the United States for children with pituitary related growth deficiencies, but has recently become popular with athletes who hope that it will increase body size and strength. It's known effects include acromegaly, an irregular growth of feet, jawbones, hands, etc. producing a "Frankenstein-like" appearance, and medical history tells us that persons who experience a gigantism (abnormal growth) and acromegaly have a significantly shorter life span than their "normal" counterparts.

The information available on the side effects of somatotropin raises serious questions regarding the safety of its use. Somatotropin has been showing effective in treating children with growth hormone deficiencies. However, research has not yet been established its effectiveness in healthy adults.

Coaches should always be alert to and curious about unusual performance, development and growth by their athletes. The conditions may indicate drug use, which should always be discouraged unless taken under the care and direction of a physician for purposes other than improved athletic performance.

We are indebted to Dr. Jerald Hawkins of Guilford College, Greensboro, North Carolina for the information about warm-up, heat stress, and drugs, and to Janet Carey and Robert Zifchoch of Fallsburgh Central School District. However, we take full responsibility for the information presented here. While the information presented here is accurate, it cannot be considered a complete discussion of the topics. You should consult your school physician on these and other medical questions.