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InMotion

SUMMER 2009



Sports Drink Facts and Fiction

Sports drinks, including the well-known brands Gatorade® and Powerade®, are commonly seen around sporting venues and are promoted to replenish fluids and electrolytes lost during sweating. The ingredients of these drinks contain vary significantly between brands, including the amounts of carbohydrates and key electrolytes. Most contain 6–8 percent carbohydrates that translate into approximately 50 calories per 8 ounces.

The more important ingredients to sports drinks are the electrolytes, such as potassium, sodium, and magnesium. These nutrients are the ones that can be lost during extended exercise and also need to be replenished with a sports drink.

Sports drinks are generally healthy for you although the sugars can be detrimental to teeth. They are not necessary unless exercise is done for an extended period of time (more than one hour), such as long distance running. For normal exercise and activity, a healthy diet and generous water intake before and during exercise are appropriate and adequate to maintain fluid and electrolyte levels.

Reference:

Meadows-Oliver M, Ran-Krause P. Powering up with sports and energy drinks. *J Pediatr Health Care* 2007, Nov-Dec;21(6)413-6.

Stretching Beforehand Keeps Swing in Your Golf Game All Year

Golf has enjoyed a tremendous rise in popularity over the last decade due in large part to the emergence of Tiger Woods as one of the most dominating figures in the sport since the heyday of Jack Nicklaus.

With the increased exposure, however, has come an increased risk of injury. Studies have shown that higher handicap golfers perform far less warm-up compared to professionals and lower-handicap individuals. Without proper warm-up muscles, tendons, and ligaments are more prone to acute and overuse injuries.

Low back injuries are the most common problem faced by golfers both amateurs and professionals. Proper mechanics can decrease the incidence of these nagging injuries and a proper warm-up can definitely help reduce the likelihood. Core strengthening, including exercises such as sit-ups and yoga poses, can help strengthen abdominal muscles, pelvic muscles, and lower back muscles, as well as prevent low back injuries.

The next most common site of injury is the elbow. “Golfer’s elbow” or medial epicondylitis can occur from improper mechanics, improper grip size, and repetitive overuse. The more well-known injury of “tennis elbow” or lateral epicondylitis can also occur in golf players. In fact, many golfers will present with “tennis elbow.” Both of these maladies can be prevented with a proper warm-up and forearm strengthening program.

To receive a free tip sheet on golf injuries and exercises to prevent them, visit the patient education section at www.sportsmed.org or e-mail your name and address to inmotion@aossm.org. Reference “golf injuries” in the subject line.



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Water: An Easy Fix for Safe Summer Fun in the Sun

Heat-related illness and death is on the rise. Approximately 200 people die each year in the United States — heat stroke being the third leading cause of death in athletes behind head and neck trauma and cardiac disorders. However, heat illness is a preventable condition.

The most effective treatment for heat-related illness is prevention, including:

- Proper training for the heat
- Fluid replacement before, during, and after exertion
- Appropriate clothing
- Abstaining from stimulants
- Early recognition of heat illness via direct monitoring of athletes by other players, coaches, and medical staff.

Proper Training

At the beginning of a strenuous exercise program or after traveling to a warmer climate, the intensity and duration of exercise should be limited initially and then gradually increased during a period of 7 to 14 days to allow time for the body to get use to the new climate and environmental conditions.

Hydration

Hydration should also begin before the exercise period. Drinking 16 ounces of water or a sports drink is recommended one hour prior to exertion. Hydration should be continued with 4 to 8 ounces of fluid every 15 to 20 minutes as long as exertion continues. An athlete who loses more than 3 percent of body weight during exercise is not receiving adequate hydration. If weight loss can be assessed following the event, replacement of 16 ounces of sports fluid for every pound lost is essential. The type of fluid replacement



is dependent on the duration of the event. Plain water is adequate for events lasting less than 1 hour. However, for events longer than 1 hour, the replacement fluid should contain carbohydrates, sodium, and potassium, which are standard components of commercial sports drinks. (See the front page article on sports drinks.)



An athlete who loses more than 3 percent of body weight during exercise is not receiving adequate hydration.

Clothing

Clothing should be light-colored, loose-fitting, and limited to one layer of absorbent material to facilitate evaporation of sweat. Sweat-saturated garments should be replaced by dry garments, if possible, during competition.

Stimulants

Nutritional supplements containing ephedra or other stimulants should

be strongly discouraged. Athletes with respiratory, gastrointestinal, or other febrile illness should be evaluated before exercise as this has been shown to increase the risk of heat illness.

Proper Monitoring

With the increasing incidence of heat illness, athletes, coaches, and parents need to recognize risk factors and utilize prevention strategies. Adhering to these prevention techniques may reduce or eliminate heat illness.

References

1. Wexler RK. Evaluation and treatment of heat-related illnesses. *American Family Physician*. 2002. 65:11.
2. Inter-Association Task Force on Exertional Heat Illnesses. Exertional Heat Illnesses Consensus Statement. Available from http://www.sportsmed.org/downloads/pdf/CS_heatillness.pdf. Last viewed on May 28, 2004.
3. Anderson SJ, et al. Climatic heat stress and the exercising child and adolescent. *Pediatrics*. 2000. 106:1.
4. Sandor RP. Heat illness. *The Physician and Sportsmedicine*. 1997. 25:6.
5. Howe AS, Boden BP: Heat illness in Athletes. *Am J Sports Med*, 35(8): 1384-1395, 2007.

Weak Hip Muscles the Culprit for Running Injuries

Sports Health: A Multidisciplinary Approach (SH), May/June 2009

As most runners know, aches and pains are a common part of training. However, according to a study published in *SH*, the real culprit for overuse running injuries, such as patellofemoral pain syndrome, iliotibial band syndrome, and Achilles tendonitis may have more to do with weakened hip muscles than how many miles run.



“Various studies have estimated that up to 70 percent of runners sustain an overuse running injury each year with more than 80 percent of those injuries occurring below the knee. Based on a literature review, it appears that foot pronation (how one steps) and inadequate hip muscle stabilization are the top categories for injury,” said lead author Reed Ferber, Assistant Professor and Director of the Running Injury Clinic from the University of Calgary. “Hip muscle weakness especially appears to lead to atypical lower extremity mechanics and increases forces on knees and feet while running.”

Tennis Wrist Injuries Determined by Grip

American Journal of Sports Medicine (AJSM), April 2009

In the last 10 years tennis has grown to be one of the most popular racquet sports in the world. With increased popularity and higher levels of technique, more injuries are being reported. In a study published in *AJSM*, researchers evaluated 370 nonprofessional division III and IV tennis players. Thirteen percent of the individuals reported injuries to the wrist. Ulnar-sided wrist injuries were more common with Western- or semi-Western grips while radial-side wrist injuries were more common with Eastern grips.

“Understanding the relationship between style of tennis racquet grips and injury rates may influence training and allow for better strategies of prevention, diagnosis, and treatment,” said lead author, Alberto Stefano Tagliafico, MD, from the University of Genova, Radiology Department in Genova, Italy.



For more information on these studies visit www.sportshealthjournal.org or www.ajsm.org.

Menstrual Irregularities May Signal Future Stress Fractures

As young women have become more involved in athletics, the incidence of exercise-induced menstrual irregularities has greatly increased. Studies have shown that up to 50 percent of female runners report a history of menstrual irregularities. Menstrual disorders range from oligomenorrhea (irregular menses) to amenorrhea (absence of menses). Potential causes of exercise-induced menstrual changes include excessive weight loss, low body fat, stress, and high training mileage and intensity.

Young competitive athletes have a higher incidence of menstrual irregularities than older recreational joggers. Women runners who initiate training before the onset of their periods may have delayed menstrual cycles and an increased risk of the total absence of a period. There is also a high prevalence of eating disorders in young female runners which greatly contributes to this problem. These young females often are obsessed with their weight and keep their weight down by running excessively (often more than 50 miles per week) while not eating.

Stress Fractures

Menstrual irregularities are also associated with decreased bone density or osteoporosis. Small changes in menstrual regularity affect the maintenance of bone composition through a decrease in estrogen. Decreased bone density in conjunction with high levels of training, set these young female athletes up for stress fractures. Studies have shown that the greater the degree of menstrual irregularity, the greater risk of developing a stress fracture.

Treatment and Prevention

Monitoring young female athletes for the development of menstrual irregularities



before they become fully established is key. This involves closely monitoring the mileage and intensity of the athlete's training sessions, particularly if their menstrual cycles have not begun. Also, it is important to recognize any associated eating disorders, such as anorexia or bulimia, which can greatly magnify the problem. A multi-disciplinary approach between physicians, dietitians, sports psychologists, certified athletic trainers, coaches, and parents is often necessary to address these problems.

Bone mineral density studies may also be used as a general screening tool to predict the risk of stress fracture in female athletes with menstrual irregularities or multiple stress fractures. The following risk factors have been associated with stress fractures and need to be identified:

- Training errors — increasing mileage too quickly
- Surface and topography — running on poor surfaces or too much hill running
- Poor physical fitness — excessive training after a period of inactivity or injury
- Biomechanical factors — foot and ankle deformities or leg length discrepancies
- Abnormal running gait
- Poor running shoes

At-risk individuals should be identified early and appropriate modifications in their training need to be made before they develop repeated stress fractures.

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About AOSSM and *In Motion*

As a world leader in sports medicine education, the American Orthopaedic Society for Sports Medicine (AOSSM) is pleased to provide you with this complimentary copy of *In Motion: Active Living for All Ages*. We have designed the publication to highlight relevant information for multiple age groups from exercise and rehabilitation to nutrition and psychology.

This important educational tool is published quarterly and can be purchased in bulk for a nominal fee for distribution in waiting rooms and other public areas. **If you purchase 50 or more copies of any three issues (Spring, Summer, Fall, Winter) you'll get the fourth set of issues free!**

In Motion is now also available electronically! AOSSM members can add their practice name and logo to an electronic version of *In Motion*. Members can also purchase a high resolution pdf of each quarterly installment to print themselves, if they purchase the personalized electronic version. Personalizing *In Motion* is an easy way to get pertinent, patient-friendly sports medicine information to your patients with just a click of a mouse. For more information, please e-mail Lisa Weisenberger at lisa@aoassm.org or contact the Society at 847/292-4900.

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Need to Get Fit? What to Look for in a Personal Trainer

Personal training and fitness is becoming a common occurrence. Despite this growing trend, many individuals do not know how to safely and effectively achieve their fitness goal. This is where the role of a personal trainer may come into play. Personal trainers can provide guidance regarding specific exercises, safety measures, and diet that can facilitate a safe, athletic, and healthy lifestyle. However, individuals who wish to hire a personal trainer should investigate a potential instructor to make sure they are qualified and reputable. Following are a few guidelines for seeking out a personal trainer.

1. Ask people in your community or your athletic facility about personal trainers who have a good reputation with clients. Ask how demanding the trainers are, whether they appear to know what they are doing and what results they have obtained with others.
2. Ask your personal trainer if they are certified. Currently there are several certifications that can be obtained by a personal trainer, including:
 - Personal Trainer Certification
 - Advanced Health + Fitness Specialist Certification
 - Group Fitness Instructor Certification
 - Lifestyle + Weight Management Consultant Certification



All these certifications are administered by the American Council on Exercise. Although such certification does not guarantee a qualified personal trainer, it does indicate a basic knowledge and understanding of exercise that should benefit the trainee.

3. Inquire about the background of your personal trainer. Were they in the medical field before? Do they have any medical/exercise physiology/certified athletic trainer/strength and conditioning background that may be beneficial in the personal training field? These professions and others typically have associated certifications that provide them with even greater expertise.

Hiring a personal trainer can be a great way to improve motivation and create new fitness goals, but carefully checking the background and reputation is essential before putting your body and health into someone else's hands.