SportsNutrition

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THE ATHLETE'S KITCHEN

by Nancy Clark, MS, RD

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If you are looking for sports nutrition information, a likely source is the American College of Sports Medicine (ACSM), the nation's largest group of exercise scientists and sports medicine professionals. (See www.acsm.org for more information.) The following bits of nutrition information offer just a taste of what was presented at ACSM's annual meeting (Indianapolis, June 2004).

Food: If you want to save money on pre-exercise snacks, consider eating "real" food. Trained cyclists performed just as well whether they ate raisins or sports gel 45 minutes before an exercise test. Despite raisins' lower glycemic effect (compared to the sports gels), the approximately 300 calories (0.5 cal/lb) of pre-exercise carbohydrate from either source did the same job–and no one complained of intestinal problems during the raisin trial. At one-fifth the cost of gels and a stronger source of nutrition, raisins can be a good energizer at a bargain price.

Fluids: Many commercial sports drinks claim to enhance performance and recovery, but the claims can sometimes be questioned. Case in point: Endurox. Subjects consumed R4 Endurox, Powerade or a no-calorie placebo before, during and immediately after an exercise test that involved biking moderately hard for 45 minutes, performing an incremental test to fatigue, resting for 15 minutes and doing another incremental test to fatigue. The subjects' performance in both tests to fatigue declined in the Endurox trials, despite Endurox's performance enhancing claims.

Caffeine: Athletes are typically advised to refrain from consuming caffeinated beverages before and during hard exercise in the heat, based on the (now outdated) theory caffeine has a dehydrating effect. When 59 healthy males (who were accustomed to caffeine) consumed differing amounts of caffeine, the caffeine did not threaten hydration status nor tolerance to the heat. The group who consumed 1.5 mg caffeine/lb body weight (about a 12-ounce mug of coffee) actually performed longer than the no-caffeine group (86 vs 75 minutes). This suggests caffeine offers an ergogenic effect and can be effective, even when used in the heat.

Illegal drugs: If you are a collegiate, olympic or professional athlete, take heed: about 25% of supplements are contaminated with muscle-building substances that are prohibited by the IOC and NCAA. That seemingly "legal" potion may not be legal, after all.

Recovery: After a hard workout, athletes need to consume carbs to refuel their glycogen-depleted muscles. The question arises: does adding protein to the carbohydrates enhance the rate of post-exercise glycogen storage and thereby enable stronger performance in the next bout of exercise? Two studies suggest no significant improvement in run times to exhaustion in a bout of exercise performed either 2 or 4 hours after the first bout, when the subjects refueled after the first exercise bout with a carb-protein recovery drink. Yet, the carb-protein recovery beverage did contribute to lower ratings of muscle soreness. The researchers want to investigate if the addition of pre-, during and post-exercise protein enhances muscle repair, thereby reducing muscle soreness.

• A refueling study with chocolate milk indicates it is an effective recovery drink, similar to commercial carb-protein drinks.

Dehydration: Most athletes are well versed on the importance of drinking enough fluids before, during and after exercise in the heat. Despite this knowledge, problems with dehydration abound. A study with professional basketball players who performed two-a-day workouts shows they started their first practice of the day inadequately hydrated and remained that way into the second practice session. This hypohydration existed even though they lost only a modest amount of sweat, about 0.85 liters/hour of sweat. In comparison, college football players lost about 1.8 liters/hour of sweat (a total of 4.1 liters per day) in moderately hot weather. The football players also failed to replace all the sweat losses and experienced mild dehydration. Youth soccer players (ages 12-13) attending a summer soccer camp failed to drink enough fluids, even though the coaches encouraged them to do so and positioned cool fluids near by.

• A simple drinking strategy to improve hydration status is to teach the athletes to drink 20 ounces of fluid after dinner and before bed, then again before practice in the morning.

Anemia: Iron deficiency anemia and the precursor, low serum ferritin levels, threaten optimal athletic performance. A study of 46 competitive 13-year-old swimmers indicates 23% of the boys and 55% of the girls had low serum ferritin. Give more than a third of these swimmers presented with low ferritin, youth athletes should be encouraged to eat iron-rich foods (enriched cereals, lean meats) to prevent the development of anemia. Some may even need iron supplements to keep up with their body's increase demand for iron due to growth and the expansion of blood volume.

Junk food: Despite eating more than 4,000 calories per day, many collegiate football players eat too little fruit, vegetables and dairy foods. A survey of 50 players suggests they consumed **59%** of their energy from sugar and fat. No wonder many had low intakes of calcium, magnesium, fiber and vitamins A, E and folate.

Meat: Among female collegiate athletes from a variety of sports, 61% consumed inadequate high quality protein (from meat, fish, poultry, eggs and dairy). Some of these women limited their intake of animal protein in an effort to reduce their intake of dietary fat –and hopefully reduce their body fat. Yet, dietary fat intake was not related to percent body fat in this study. Female athletes should focus on eating well (including eating adequate protein) without worrying about gaining weight.

Pedometers: Pedometers can be useful with weight reduction programs. By wearing a pedometer, people can obtain data regarding their activity level. For example, in a group of 552 overweight older women (ages 45-75) who did no regular exercise, the average step count was about 5,300 per day. Only 3% of the women accumulated more than 10,000 steps per day, a popular recommendation for a physically active lifestyle. In comparison, fewer than 5,000 steps per day has been defined as sedentarism.

• Does knowledge about personal sedentarism inspire greater activity level? Doubtful, according to a study with 41 overweight, lower income women (ages 40-65) who wore pedometers for three months. Each woman received a weekly phone call, encouraging her to increase her steps by 10% each week with a goal of 10,000 steps per day by the end of three months. More than half of the women did not increase their steps by more than 1,000 from baseline. Knowledge does not always turn into action...

• How accurate are the pedometers that estimate calories burned with walking? In a study with 21 students who walked/jogged on a treadmill while wearing a pedometer and simultaneously getting their energy expenditure measured via a metabolic cart, the pedometer overestimated calorie expenditure by 70-95 cals/hour.

Sports Nutritionist Nancy Clark RD counsels casual and competitive athletes at her private practice in Healthworks Fitness Center in Chestnut Hill, MA (617-383-6100). Her best-selling *Sports Nutrition Guidebook, Third Edition* ($23) and *Food Guide for Marathoners: Tips for Everyday Champions* ($20) are available by sending a check to Sports Nutrition Services, PO Box 650124, Newton MA 02465 or www.nancyclarkrd.com