

Nutrition News from ACSM 2003

The American College of Sports Medicine (ACSM) is the nation's largest group of exercise scientists, sports medicine doctors and sports nutritionists. The members meet each year to present their research. Below are some tidbits of nutrition and exercise news that were presented at the May 2003 meeting in San Francisco.

PERFORMANCE

- Intramuscular fat—that is, fat that is stored within muscles--can provide up to 25% of the energy used during endurance exercise. Athletes may need two days to replenish intramuscular fat if they eat a high fat (40%) diet and even longer with a lower fat diet (24% of calories; at least 60 to 80 grams of fat). Endurance athletes can and should appropriately include nuts, peanut butter, olive oil and other healthful fats into their daily meals. Fat-free diets are not conducive to optimal fueling.
- If you exercise twice a day, your morning coffee can still enhance your afternoon effort. Cyclists (who were accustomed to drinking coffee) consumed the equivalent of two mugs of coffee before a morning ride to exhaustion. When they took more caffeine before the afternoon exercise test, they performed similarly to when they only had the morning dose. Morning brew is enough!
- If you are tempted to buy oxygenated water, think again. It does not supersaturate the blood with oxygen (and thereby enhance performance). Yet, you do want to drink enough fluids on a daily basis—unlike a college hockey team of which 14 of the 16 players starting the practice dehydrated. During the 90 minute practice, not one player drank enough to match fluid losses. Be sure to know your sweat rates and replace fluid accordingly!

HYDRATION

For years, athletes have been told to drink as much water as they can tolerate. That's no longer the case. Endurance athletes—who exercise for more than four hours and overhydrate with fluids that contain little or no sodium—can experience hyponatremia (low blood sodium; associated with malaise and confusion at least, and death at worst). A survey of marathon runners who experienced hyponatremia indicates they: 1) drank more fluid during the marathon and 2) had saltier sweat compared to others who maintain normal sodium levels.

- Hyponatremia occurs more often in women than in men. This might be because women are more diligent than men about drinking water or it might be related to menstrual cycle hormones.
- Football players with a history of severe muscle cramping during two-a-day summer practices drank less fluid than cramp-free players. They became more dehydrated and experienced more muscle cramps. They also had higher sweat rates and simultaneously higher sodium losses. Consuming sports drinks is a convenient way to boost sodium intake. Pretzels and broth work, too.

The bottom line: If you do extensive exercise in the heat, you should know your sweat rate as determined by weighing yourself naked before and after one hour of hard exercise with no fluid intake (1 lb weight loss = 16 ounces sweat) You can then replace fluids appropriately, preferably with sodium-containing fluids and foods that replace sodium sweat losses. If your stomach is sloshing, stop drinking.

BODY IMAGE

- When 700 young adults (average age, 24 years) were asked how they perceived themselves on the spectrum from very underweight to very overweight, the women were more likely to see themselves as more overweight than their actual weight; the men saw themselves as being more underweight. High school and collegiate runners hold similar perceptions. When questioned, the women reported wanting to be lighter than their current weight. The male runners, in comparison, wanted to be a little larger.
- The male desire to be bigger is based on perception, not the actual preferences of women. A survey of about 200 collegiate men and women indicates 1) men believe the male figure most attractive to women is more muscular than the figure the women actually chose; 2) women prefer men with standard muscle, not hulks!
- Weight lifting is associated with not just improved strength but also improved perception of self-esteem, sports competence, coordination and health.

WOMEN

Rat studies suggest the loss of regular menstrual periods that commonly occurs in active females may be related to inadequate calories, not excessive exercise. Rats that did lots of exercise but ate enough calories to support the exercise program maintained regular menses. Rat studies also suggest the bone loss associated with amenorrhea (loss of menses) is likely related to reduced muscle mass as opposed to hormone imbalances. Women need to eat enough to support exercise, muscles and menses.

- If you are a female athlete who has stopped having menstrual periods, be aware that many members of the medical community lack knowledge about the health problems associated with amenorrhea. A survey suggest only 53% of family doctors recognized all three parts of the female athlete triad (amenorrhea, eating disorders, stress fractures)—as did 36% of pediatricians and 17% of gynecologists. If you are told it's normal for athletic women to stop menstruating, find another MD!

MUSCLE

Consuming inadequate calories and protein reduces the body's ability to build muscles. Hence, dieting athletes should be sure to have a strong protein intake (at least 0.5 gm pro/lb). Yet, if you are severely undereating (such as an athlete “making weight”), choosing a protein-rich diet will not protect your muscles. Soldiers who did exhaustive military operations while eating inadequate calories lost the same amount of muscle regardless if they ate a high (0.5 gm/lb) protein or lower protein diet.

SUPPLEMENTS

Should you take vitamins C and E to decrease the inflammatory response associated with muscle damage caused by exercise? No. A study with healthy athletes who did muscle-

damaging exercise suggests 400 mg. C and 800 mg. E generated no protective benefits. Ultramarathoners who took 1,000 mg. C and 400 mg. E also experienced no benefits in terms of severity of muscle damage and recovery rates. Eating wisely works.

Nancy Clark, MS, RD offers personalized nutrition consultations at SportsMedicine Associates in Brookline MA (617-739-2003). Her best-selling *Sports Nutrition Guidebook* (\$23) and *Food Guide for Marathoners: Tips for Everyday Champions* (\$20) are available via www.nancyclarkrd.com or by sending a check to Sports Nutrition Services, 830 Boylston Street #205, Brookline MA 02467.