

Sports Nutrition

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The Athlete's Kitchen

If you are eager to learn more about how to best fuel your body for top performance, you might enjoy muscling through three pounds and 557 pages of *Sports Nutrition: A Practice Manual for Professionals*. The new 4th edition of this in-depth resource was recently released by SCAN, the sports nutrition practice group of the American Dietetic Association. (Available at eatright.org; click Shop Online.)

Although this resource book is written for primarily sports dietitians, strength coaches, athletic trainers and other health professionals who influence an athlete's eating practices, serious athletes might also like to feast on this hard-core (but well written and relatively easy to read) book that will answer all sports nutrition questions from A to Z, including alcohol, carbs, calories, fats, fluids, protein, vegetarian diet, weight gain, zinc—plus more!

To give you a taste of the information in the book, here are a few sports nutrition nuggets that might be of interest.

- The average 150-pound athlete has only 1,000 to 2,000 calories of stored carbohydrates (glycogen), but over 80,000 to 120,000 calories of stored fat. Most of the fat is deposited in adipose tissue under the skin, but a little bit is also stored directly in the muscles and is an important source of fuel, especially during prolonged exercise.
- Don't try to eat a fat-free diet! The recommended intake for athletes is about 0.5 grams fat/lb body weight/day. This equates to 60 to 80 grams per day of dietary fat for athletes who weigh 120 to 160 pounds. That's 15 to 20 teaspoons of butter! Preferably, the fat comes from healthful sources: nuts, peanut butter, olive and canola oil, and avocado.
- While some fat is good, excess calories of fat are fattening. Your body easily stores excess dietary fat as body fat. That's why you want to carefully *carbo*-load on pasta and breads, not fat-load on Alfredo sauce, butter, cheese, chips.
- Your body stores carbohydrates in the muscles in the form of glycogen (1,200 to 1,600 calories) and also in the liver (300 to 400 cal); this feeds into the bloodstream (100 cal) and fuels your brain. By training, you enhance your body's ability to store more muscle glycogen; this enhances your ability to exercise for longer before "hitting the wall."
- Athletes should eat *at least* 2 grams carb/lb. body weight per day. That's a minimum of 240 gm carb (about 1,000 calories) per day for a 120 lb woman and equates to 10 pieces of fruit or 5 cups of cooked pasta. Athletes in hard training actually should eat 4 to 5 gm carb/lb. No Atkins diet here!
- Adult athletes require about 0.5 to 0.75 gram protein per pound (1.2 to 1.7 g pro/kg). Scientific evidence suggests if you eat more than 0.8 gm pro/lb. (1.8 gm pro/kg), you'll burn the excess protein for energy. In other words, eating a very high protein diet does not result in greater muscle gain, even with intense resistance training. To bulk up, eat more overall calories for abundant energy to build muscles.

Sports Nutrition Tidbits

- Because eating before exercise can enhance performance, target: 0.5 gm carb/lb body weight one hour pre-exercise
1.0 gram carb/lb, 2 hours prior,
1.5 grams carb/lb, 3 hours prior and
2 grams carb/lb, 4 hours prior.

This means, if you weigh 150 pounds, you need about 75 grams carbohydrates, or about 300 calories of carb, one hour pre-exercise, and 1,200 calories four hours out. This tends to be far more than most athletes consume. Experiment to learn how much your body can tolerate.

- Consuming carbs during endurance exercise can delay fatigue by 30 to 60 minutes. Target about 1 gram carb per minute—equivalent to 240 calories of carbs per hour, if you weigh about 150 pounds. That's ~ 1 quart PowerAde/hour.
- Consuming carbs as soon as tolerable after hard exercise enhances muscle glycogen replacement because—
 - 1) the blood flow to the muscles is faster immediately after exercise, so carbs can get carried to the muscles faster;
 - 2) the muscles are better able to take up the carbs because of increased sensitivity to insulin, the hormone that helps transport carbs into muscles. Plan to have banana, fruit yogurt, fruit smoothie, and/or fig bars readily available.
- Both liquid and solid carbs refuel the muscles equally well, so take your choice: chocolate milk or a pasta dinner.
- While most athletes believe "thinner is better," don't try to get your body fat below 5% (men) or 12% (women). Each athlete has a fat percentage and body weight at which he or she performs best. Hence, you should listen to your body, and take note of how you feel and perform, as opposed to force your body to achieve a self-selected number.
- Warning: Body fat measurements—even under research conditions—can be plus or minus 3 to 4%. If you are told your body fat is 16%, it might be 13% or 19%. Just having a different person measure your body fat can significantly alter the measurement. Use body fat measurements only as a guide and give yourself a body fat *range*.
- At rest, your body burns approximately 0.45 calorie per pound per hour. That's about 70 calories per hour or about 1,700 calories per 24 hours of bedrest if you weigh 150 lbs. Brisk walking (15 minutes per mile) burns about 375 calories for a 150 pound person. High intensity running (5.5 minutes per mile) burns about 1,200 calories per hour. Clearly, the harder you exercise, the more you can eat. But hard workouts followed by naps can reduce your daily calorie needs. Athletes who turn into post-exercise couch potatoes may fail to attain their desired level of body fat...

Sports dietitian Nancy Clark, MS, RD teaches active people how to eat to support their hard training. She has a private practice at Healthworks (617-383-6100), the premier fitness center in Chestnut Hill MA. Her best selling *Sports Nutrition Guidebook* (\$23), *Food Guide for Marathoners* (\$20) and *Cyclist's Food Guide* (\$20) are available via nancyclarkrd.com or PO Box 650124, Newton MA 02465.