

Getting A Natural Edge Using Sports Nutrition



Would you like to be faster, stronger, bigger, or leaner? Do you wish you had more energy for your workouts so you could get more out of them? Whether you're a weekend warrior, endurance or power athlete, or mainly focused on weight loss, sports nutrition supplements can help enhance your performance and appearance. Try experimenting with them, including those discussed below, to see which combination works best for you. You might be amazed at the results!

Energy Basics: Carbohydrates, Proteins & Fats

Before sports supplements are introduced, maximized training and results first depend on the intake of optimal amounts of energy/calories from appropriate amounts of carbohydrates, proteins and fats (known as macronutrients). Deficient energy intake during training, to which many athletes are susceptible, often leads to significant weight loss (including muscle mass), illness, onset of physical and psychological symptoms of overtraining, and reductions in performance.

According to conventional guidelines, those who exercise 3 times per week for 30-40 minutes can generally meet their nutritional needs with a normal diet of 1,800-2,400 calories/day

(or 25-35 calories/kg/day for a person weighing 110-175 pounds) (because they tend to use only 200-400 calories per session) consisting of high-quality: (1) carbohydrates- 3-5 g/kg/day; (2) protein - 0.8-1.0 g/kg/day; and (4) fat - 0.5-1.5 g/kg/day. [The appropriate number of kilograms of these macronutrients for an individual is determined by dividing the individual's weight in pounds by 2.2 (e.g., 150 lbs/2.2 = 68 kg, calling for approximate daily intake of 272 grams of carbohydrates, 61 grams of protein, and 68 grams of fat.)]

Athletes engaged in moderate-to-high levels of training, who tend to burn 600-1,200 calories or more per hour of exercise, require 2,500-8,000 calories/day (or 50-80 calories/kg/day for a person weighing 110-220 pounds) and thus higher quantities of the macronutrients: (1) carbohydrates- 5-8g/kg/day; (2) protein - 1 - 1.5g/kg/day (moderate-intensity athletes training intensely 2-3 hours/day, 5-6 times per week); 1.5 - 2g/kg/day (high-intensity athletes training 3-6 hours/day, 5-6 times per week); and (3) fats - 0.5-1.5 g/kg/day (about the same as non-athletes).

While there is more than one way to prepare for and recover from exercise, some experts recommend consumption of protein and simple carbohydrates (fruits, juices) 15-30 minutes before exercising and heavy carbohydrates+protein

(15-25% of total daily calories) within 30-90 minutes thereafter. The body converts only carbohydrates and protein to glucose (known as glycogen when stored in the liver), the primary energy source for exercise. One study found that athletes who refueled with carbohydrates+protein had 100% greater muscle glycogen stores than those who consumed only carbohydrates. If glucose levels are inadequate due to insufficient intake of carbohydrates, the body breaks down proteins for energy. If an athlete consumes inadequate quantities of protein, the body uses muscle and other body proteins to synthesize glucose. Over time, this can lead to lean muscle wasting and training intolerance.

Foods & Supplements To Avoid or Limit

Athletes should avoid certain foods and performance boosters. First, fat (e.g., meat, fried foods, candy bars) does not have a role in an effective pre- or post-exercise regimen, though healthy fats (omega-3-6-9 fatty acids) are critical to other aspects of good nutrition. It can be difficult to digest fat and it tends to cause cramping by pulling blood into the stomach to aid digestion.

Though some athletes still risk using them, these are among the ergogenic

aids that most sports organizations have banned due to their serious potential side effects: (1) Erythropoietin (EPO) – a hormone produced by the kidneys that stimulates the production of red blood cells and is available in synthetic form as a pill or shot; (2) Anabolic Steroids/Hormone Precursors (DHEA/THG/Androstenedione) – synthetic versions of testosterone that accelerate lean muscle building and shorten recovery time; (3) Amphetamines- highly addictive central nervous system stimulants; and (4) Human Growth Hormone (HGH) – the injection form was reported to reduce body fat by 14.4% and increase muscle mass by 8.8% in twelve men using it for six months (New England Journal of Medicine, 1990), but it requires a prescription, may not be prescribed for anything other than HGH deficiency, and its potential side effects include gigantism, joint pain/swelling, blindness and cancer.

Sports Supplements for Endurance/Muscle Building/Recovery/ Weight Loss

Exercise physiologists and other experts often highly recommend these sports supplements as safe and effective:

Whey Protein: Convenient Powders, Shakes (RTDs) & Bars. The human body contains about 11-13 lbs. of muscle protein. Physical exertion breaks down muscle, requiring the consumption of protein to sustain and rebuild it. Preserving and building muscle enables an athlete to train harder and recover faster. To achieve a daily protein goal of 1-2g of protein per pound of bodyweight, intake whey protein with a diverse mix of amino acids from whole food protein sources (e.g., egg, fish, soy). The preferred form, micro-filtered whey protein isolates, are high in protein, low in lactose and fat, and retain their immune-supporting and anti-cancer properties, but some view whey protein concentrates (unlike ion exchange isolates) as suitable, less expensive substitutes.

Creatine Monohydrate Powder: Extensive research has shown creatine to be the most effective nutritional supplement available to increase fat-free body and muscle mass, power, and endurance, especially for high-intensity ath-

letes. An amino acid with minimal side effects (weight gain and possible taxing of the liver and kidneys), it works by increasing cellular energy (ATP) available to skeletal muscle cells during exercise. Creatine daily doses range from 2-5g (starting and non/post-loading) to 20-30g (loading, in 2-4 servings), depending on an athlete's weight, workout intensity and frequency, metabolism, and digestive tolerance. Since experts differ on whether to take creatine pre- or post-workout, experimenting with each is recommended. Try dosing immediately after exercise and first thing in the morning on non-workout days. A few more tips to follow when using creatine: (1) to create an insulin spike that will maximize muscle cell uptake, drink it immediately after mixing it with a non-citrus juice and protein; (2) try taking it with D-Ribose, a simple sugar that begins the metabolic process for ATP production; (3) drink one 8oz. glass of water for every 10 lbs. of bodyweight every day; and (4) limit caffeine and alcohol intake to prevent removal of the water the creatine is pulling into the muscle.

Other Exercise Enhancers

Testosterone Boosters/Diet Aids/Recovery Supplements

To enhance the results of exercise and a fitness goal-focused diet, it's also worth researching and trying these supplements: (1) Standardized Tribulus Terrestris (500-2000mg/day in separate doses; 1 hour before workouts)– enhances muscle growth and treats erectile dysfunction by boosting testosterone and DHEA levels; (2) Long Jack/Tongkat Ali (200-300mg, 2-3 times/day; cycle 5 days on, 2 days off for 8 weeks, followed by a 2-week break)– enhances production of testosterone and enables it to enter muscle cells to induce growth; (3) Nitric Oxide (NO) Stimulators/L-Arginine - may increase muscle growth by increasing blood flow, nutrient delivery, wound-healing; (4) Beta-Alanine- enhances carnosine synthesis to buffer muscles from acidity and thus increase energy, delay muscle failure, and maximize workouts; (5) Fat Burners – If Non-Hypertensive – formulas that include bitter orange (source of synephrine and octopamine, chemicals

in ephedra), moderate doses of caffeine/green tea-EGCG/guarana (for those with no adrenal, thyroid, prostate, or hypertension/cardio issues; also improves endurance); white willow bark, and/or bioperine/black pepper. If Hypertensive – formulas containing fucoxanthin/Fucothoin®, a seaweed carotenoid clinically proven to burn fat naturally without side effects, and/or lipotropic formulas combined with fat enzymes; (6) Hoodia Gordonii – non-hypoglycemics might try this to suppress hunger and thirst; (7) White Kidney Bean Extract – blocks storage of carbohydrates as fats; and (8) Branch Chain Amino Acids (BCAAs-leucine, isoleucine, valine), L-Glutamine, Electrolyte Replacers – aid in muscle and energy recovery after exercise.

Conclusion

It's not cheating! Why do it the hard way, all on your own, when safe sports supplements can boost your workouts and results? With the right attitude, once you find your ideal combination, you're bound to reach your fitness goals.

Submitted by Michael Dworkin, P.D., M.S., a Registered Pharmacist and State Certified Clinical Nutritionist (CT Certification #00203), with J. Erika Dworkin, Dip.C.N./Board Cert. Holistic Nutrition (pending). Owner of the Manchester Parkade Health Shoppe (860.646.8178, 378 West Middle Turnpike, Manchester), Pharmacist Dworkin has been guiding patients since 1956 and is available for consultation by appointment. Erika is available to speak to groups. References are available upon request. The statements in this article have not been evaluated by the Food and Drug Administration. None of the natural remedies discussed herein are intended to diagnose, treat, cure or prevent any disease.