Feeding the Athlete
Research vs. Food Myths. American Fitness CEU Corner
BY SUSAN DAWSON-COOK, MS

There’s a deluge of “what you shouldn’t eat” information on the Internet, in newspapers, magazines, and even on television. Carbohydrates and gluten have suffered the worst media bashing
of late and are blamed for everything from obesity to heart disease and diabetes.

As a lean athlete and fitness professional, I consume carbohydrates for energy and to maintain my weight. Carbs such as oatmeal, organic fruits, and whole grain breads and pasta—the mainstay of my athlete diet—are friends, not foes. One day a man observed me eating a bagel and shook his head saying (not jokingly) he had lost all respect for me. “You’re in such good shape,” he continued, “I didn’t think you ate stuff like that.” I explained the importance of carbohydrates in the athlete’s diet for glycogen storage and energy during workouts and competition. Unfortunately, he’d been so programmed to believe carbs were evil that my explanation fell on deaf ears. Feeling disheartened, I vowed to write a comprehensive feature addressing the unique nutritional needs of athletes and dispelling common food myths. I will also highlight the benefits of eating fresh and organic foods since this topic is infrequently discussed.

Effects of an Unhealthy Diet
Some athletes and hard-core exercisers assume training alone will make them healthy and that they are immune to the detrimental effects of a poor diet. When dining with athlete friends, I’m astounded how many order Swedish meatballs or chicken wings swimming in grease. Athletic training often benefits health, but even lean, fit athletes can suffer from congenital heart conditions and/or heart disease related to poor diet or overtraining.

A nourishing diet can heal and support the body and may prevent the onset of age-related diseases. Urge clients to select foods that nourish and fuel their bodies. By educating clients on proper nutrition, you can play a major role in their improved health, quality of life and athletic performance.
Athletes Require More Calories and a Carbohydrate-Rich Diet

Many athletes and fitness professionals burn an excess of a thousand calories daily teaching classes or training. Marathon runners may burn as much as 1,000 calories an hour. Numerous athletes, including myself, struggle to consume sufficient calories in a day without compromising quality. I rely on nuts and fruit/vegetable smoothies when my caloric intake needs a boost.

Sports Nutritionist Nancy Clark, MS, RD, CSSD, believes the extra effort required to establish a healthy eating routine is a small price to pay for the increased energy, improved performance and better health. Convincing clients and class participants of this payoff is a fitness professional’s biggest challenge. Convincing them that carbs aren’t evil and fattening will require additional persuasive skills.

Many people, including athletes, believe that carbohydrates will plump them up. Forty-three percent of 425 female collegiate athletes surveyed said they were terrified of gaining weight. However, little evidence supports this fear. Several of Clark’s athletic clients lost weight only after increasing caloric intake and the percentage of carbs in the diet. 1

“Carbohydrates are important for fueling the muscles,” says Clark. Converted to glycogen in the muscles and liver, carbs are stored in the tissues and readily available as energy for the next bout of activity. When glycogen stores are depleted, a likely outcome (in an athlete training hard on a low-carb diet) is the athlete will feel exhausted and unable to perform to his or her potential.

If a client balks at additional carbohydrates, a trainer might suggest she fuel with carbs for two weeks. Once the benefits become
apparent and no weight gain is experienced, the athlete will be more likely to continue with this diet modification. Athletes on a gluten-free diet can glean carbs from sweet potatoes, potatoes, corn, beans, oats (if labeled), bananas and other fruits, rice, rice cakes, nuts, Hammer Gel®, Honey Stinger® Waffles, GU™ Chomps and LÄRABARs®.

Better performance and weight control can be expected when clients consume the lion’s share of their daily calories throughout the first half of the day, then the calories are utilized during workouts. Eating breakfast “improves quality of overall diet, reduces sweet cravings and enhances performance,” observes Clark.

The Key to Better Performance

A sound sports diet includes a balance of carbs, proteins and fats. Clark suggests consuming four “buckets” of food daily, each with a similar amount of calories. She also advocates hefty portions of fruits and vegetables.

Carbohydrates are particularly ergogenic when consumed before and after training. Higher glycemic index carbs, including bread, rice, potatoes and fruit, are easier to digest and elevate blood sugar most readily. Glycemic response varies from person to person and even how the same person responds from day to day can differ by as much as 43%.2 For this reason, Clark suggests that athletes experiment with a variety of carbohydrate-rich foods to establish which ones are best tolerated.

According to current Recommended Dietary Allowance (RDA) guidelines, the average person requires about 0.4 grams of protein per pound of body weight per day for optimal health. An athletic adult requires 0.5 to 0.75 grams of protein per pound. Up to one gram of protein per pound may be required to gain muscle mass. Protein and minerals are essential for athletes. In a 2010 ACSM
study, more than 50% of female athletes ages 18 to 22 suffered from iron deficiencies, which can be debilitating. Red meat and enriched cereals are good sources of protein and iron. Other viable protein sources are eggs, yogurt, skim milk, hummus, tofu, and lean meats such as chicken and fish. Dairy products also supply calcium, imperative for bone health. Other good sources of calcium are broccoli, kale, leafy greens, enriched orange juice, salmon or sardines with bones, soy milk and tofu.

Fat is an important part of the athlete’s diet, yet many fear fat as much as carbs. A moderate amount of healthy fats improves the absorption of vitamins A, D, E and K, and boosts endurance in runners.3, 4

The Argument for Organic

“The quality of the foods we eat is everything,” says Dr. Timothy Marshall, a Tucson-based holistic neurospecialist and one of the world’s leading experts in nutrient delivery systems, nutrient optimization and low-dose lithium therapeutics.

Dr. Marshall maintains that nutritional deficiencies not only impair athletic performance, they also contribute to inflammation, illness and chronic disease. “For optimal health and athletic performance, it’s essential to focus on unprocessed, organically grown whole foods, which have higher levels of antioxidants, vitamins and trace minerals than their conventional counterparts.”

Many carbohydrate-rich foods are heavily processed or sprayed with pesticides and can lead to low-level glyphosate (Roundup®) poisoning according to Dr. Marshall. This “potent herbicide aggressively binds to magnesium and other important minerals.” In a nutshell, a sprayed product is deprived of its innate nutrients before it is eaten.
The Environmental Working Group (www.ewg.org) recommends buying organically grown apples, bell peppers, celery, cherries, imported grapes, kale, lettuce, nectarines, peaches, pears and strawberries because the non-organic versions of these are the most heavily sprayed. Avocados, sweet corn, onions and pineapples contain the lowest levels of pesticides.

Toxic effects can result from acute and long-term, low-dose pesticide exposures. Chronic exposure to heavy metals in nonorganic food is associated with gastrointestinal distress, brain, kidney and neurological damage, and cancer. Adults eating an organic diet for a week experienced nearly a 90% decrease in pesticide levels in their bodies.

Fresh organic products are more nutrient-rich than their nonorganic equivalents. The concentrations of a range of antioxidants are substantially higher in organic crops and organic crop-based foods. Dr. Marshall comments, “Your body will run better and recover quicker with nutrient/antioxidant-dense fruits or starchy vegetables… Fresh or frozen fruits and vegetables are rich in antioxidants, which confer anti-inflammatory effects that reduce muscle soreness and speed recovery.”

In a U.S.-based study, organic milk contained 62% more omega-3 fatty acids than conventional milk. Organically raised dairy cows have more access to fresh forage, which may explain the differences in fatty acid profiles.

Look for the USDA organic seal that certifies the product is either 100% organic or organic with up to 5% nonorganic ingredients. Athletes on a tight budget can purchase organically produced food through a community supported agriculture (CSA) program.
“The worst fats are those in processed foods, and highly refined GMO oils such as corn, soy and canola,” states Dr. Marshall. “The best fats are unprocessed, unheated fats present in whole foods such as raw nuts, nut butters, seeds, avocados, eggs, whole fat dairy and pastured butter. Oils such as organic extra virgin olive oil and coconut oil are two of the best for energy and healthy cardiovascular function.”

**How to Improve “On-the-Run” Eating**

Athletes and non-athletes alike often skip meals because of rushed schedules. By not fueling pre-exercise, athletes risk poor performance and low energy. Suggest they grab fruit, nuts, trail mix, yogurt or cottage cheese. All of these are quick and nourishing.

**Pre- and Post-Race Fueling**

Proper hydration is an important part of fueling. However, many sports drinks contain harmful ingredients. Athletes should avoid those containing aspartame and sucralose since both ingredients have been established as highly toxic to the body.10

My beverage of choice during high-intensity exercise is Oxylent mixed with water. This product is rich in citric acid, vitamins and minerals. Tart cherry juice is another healthy alternative sports drink that has been shown to improve performance. Cyclists who rode for 109 minutes while drinking the juice had 4% lower VO2 levels than those who abstained. A reduction in inflammatory response was also noted.11

Recent research suggests that eating nitrate-rich foods can improve oxygen utilization and performance. In one study, rowers who drank beet juice for six days before activity showed improved
performance results.12

Some athletes benefit from consuming caffeinated beverages pre-event. Caffeine has been shown to enhance an athlete’s tolerance to pain, but should be avoided if it causes stomach upset or jitters.

Eating before training or competition improves performance. A 1985 study determined that cyclists who ate breakfast four hours before their workouts and indulged in a pre-exercise candy bar performed 20% more work during a 15-minute sprint interval following 45 minutes of moderate-intensity cycling than fasting athletes. 5 a.m. exercisers need not despair. Cyclists who ate a pre-exercise snack and drank water or sports drinks during their workouts showed a 12% improvement in their sprint interval compared to fasters.13

Bananas, gummy candy, gels, grapes, pineapple sports drinks are examples of carbohydrate-rich foods and drinks that most people can easily digest. Since insulin response during exercise is blunted, nondiabetic athletes need not fear a sugar crash after consuming a
high glycemic food or beverage before, during or after activity.

Many fruits, including apples, bananas, lemons and oranges contain citric and malic acid, which provide quick energy. In addition to their antioxidant properties, these compounds enter directly into the body’s primary energy-producing cycle, the citric acid or Krebs Cycle, generating cellular energy as ATP, which is immediately available to muscles.

Clark suggests that athletes train their digestive systems to tolerate food before exercise and experiment to find which foods work best.

Bloating, burping, cramping, heartburn, reflux, stomach pain, vomiting or a sudden need to move bowels can result when the gastrointestinal tract is unaccustomed to having food in the system.

For post-exercise recovery, carbohydrates replenish glycogen stores and protein repairs muscles. “Chocolate milk does an excellent job,” says Clark. Research shows that it hastens recovery. Other options are yogurt with sweetener, pasta with sauce and Cheerios® with milk.
Considerations for Endurance Athletes

Athletes exercising for more than an hour at a time need to consume calories during their training or event to sustain energy. Those exercising between 1 and 2.5 hours should ingest 120 to 240 calories per hour. After an athlete has exercised for more than 2.5 hours, he or she should consume 240 to 360 calories per hour to keep blood sugar levels from plummeting.

Fuel for Life

The takeaway message is clear: client athletes should eat abundant high-quality, nourishing foods (especially early in the day), fuel right for workouts and competitions, and reap the myriad benefits.

“It is my firm belief that you get out what you put into your body,” says Dr. Marshall “If you put in higher quality fuel, you will undoubtedly get higher quality performance. Every day, people put the lowest grade fuels (i.e., overly processed, packaged foods) into their bodies and wonder why they’re chronically tired, depressed, have difficulty thinking, or live with various aches or pains. So, the
bottom line is this: What you get out is directly related to what you put in.”10 AF

Bio: Author Susan Dawson-Cook, MS, is an AFAA certified personal trainer/group exercise instructor and a nationally ranked U.S. Masters swimmer. In addition to writing articles on health, fitness and competitive swimming, she pens romance novels under her pseudonym, Sabrina Devonshire.

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CEU Questions:
Feeding the Athlete Code No. 0137

1. Some athletes assume ________ alone will make them healthy and that they are immune to detrimental effects from a poor diet.
   A. protein
   B. vitamins
   C. carbs
   d. training

2. An athlete will be most likely to experience enhanced performance when:
   A. fasting before workouts.
   B. fueling with Red Bull before workouts.
   C. fueling with carbohydrates before workouts.
   D. none of the above.

3. Healthy fats comprise an important part of the diet because:
   A. eating them provides unlimited energy during workouts.
   B. eating them improves the absorption of essential vitamins.
   C. they are a good source of vitamin C.
4. Purchasing organic milk is a worthwhile investment for heart health because:
   A. organic milk is likely to increase inflammation in the body.
   B. it contains more omega-3 fatty acids than non-organic milk.
   C. the cattle are dosed with antibiotics.
   D. it has less cholesterol.

5. Carbohydrates are beneficial to the athlete because:
   A. they won’t enhance the building of muscle mass.
   B. they convert to glycogen in the muscles and are stored in the tissues for use during activity.
   C. they increase a person’s VO2 max right after consumption.
   D. they have less calories than other foods.

6. People often fear carbohydrates because they believe:
   A. they will cause weight gain.
   B. they are fattening.
   C. they are evil.
   D. all of the above.

7. Forty-three percent of 425 female collegiate athletes surveyed said they were terrified of:
   A. losing the game.
   B. eating fattening foods.
   C. competing against male athletes.
   D. gaining weight.

8. Which of the following is NOT a food recommended for the gluten-intolerant athlete?
   A. Hammer gels

D. they will prevent iron deficiencies.
B. LÄRABARS
C. Wheat bread
D. GU Chomps

9. In addition to dairy products, another good source of calcium is:
   A. grapes.
   B. pomegranates.
   C. sweet potatoes.
   D. kale.

10. A moderate amount of healthy fats improves the absorption of vitamins A, D, E and:
    A. B.
    B. K.
    C. B-2.
    D. C.

11. Research suggests that an effective alternative sports beverage to consume before and during activity is:
    A. tomato juice.
    B. tart cherry juice.
    C. a mimosa.
    D. chocolate milk.

12. All of the following are examples of foods that contain healthy fats EXCEPT:
    A. avocados.
    B. nuts.
    C. coconut oil.
    D. canola oil.

13. An athlete with a sensitive stomach might be able to consume which of
the following foods before a workout?
A. Banana  
B. Gummy candy  
C. Pineapple  
D. All of the above  

14. An effective choice for a recovery beverage would be:
A. tomato juice.  
B. pineapple juice.  
C. chocolate milk.  
D. organic vegetable shake.  

15. Athletes competing in an event lasting more than 2.5 hours should consume (in the form of food and drink):
A. 80 to 100 calories per hour.  
B. 120 to 240 calories per hour.  
C. 240 to 360 calories per hour.  
D. 500 to 600 calories per hour.  

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