Energy Bars

Many types of energy bars are now available. From high-protein bars to those that are marketed specifically for women, the energy bar scene is anything but simple. Some label reading is a must when it comes to choosing the right bar for fueling. High-carbohydrate bars make great choices for carbohydrate fueling both before and during a long workout. These bars typically provide about 70 percent of their calories from carbohydrate as sugars (brown rice syrup, sucrose) and grains (oats and rice crisps).

How quickly these carbohydrates get into the circulation is referred to as the glycemic index. Eating a high glycemic index bar means rapid release of carbohydrate into the blood stream, giving the muscles a quick "shot" of fuel, which is ideal during a workout. Eating a low glycemic index bar results in a slower release of sugar into the circulation and thus, sustained energy, which is best before exercise.

Many bar manufactures claim that their profile of carbohydrates sources (such as oats and other complex carbohydrates) are best for a sustained and lasting release of carbohydrate fuel into the circulation. It's true that carbohydrates are digested and appear in the circulation at different rates. Predicting the glycemic index of a bar based on its ingredients is challenging, as carbohydrate types digest at different rates and the protein and fat content of the bar also affect absorption. Most bars have high glycemic index despite their use of various grains and other complex carbohydrates as major ingredients.

What to look for and how to use: Select a bar with about 25 - 40 grams of carbohydrate and less than 15 grams of protein, which is not a crucial fuel source during exercise. Also, check the label for fat content as some bars can pack a hefty dose, which slows digestion and is not helpful during exercise or sports. Eat one bar about an hour prior to a long workout, and if you're exercising for more than an hour eat one high-carb bar per hour of exercise along with ample water.

Fruits (orange slices, bananas, dried fruit)

"Real food" can also be used for fueling a workout. Fruit, whether dried or fresh, supplies a shot of carbohydrate that is well digested. Dried fruit is easily transported, can withstand extreme weather conditions, and is durable enough to survive some shaking and jarring.

What to look for and how to use: Most fruits provide about 15 grams of carbohydrate per serving – about the size of a tennis ball. A serving of dried fruit equals about 1/4 cup or the equivalent of dried fresh fruit (two nectarine halves, or four dried plums). Aim for one to two servings before a workout and two to three fruit servings every hour of running. Be sure to consume itwh ample water to stay hydrated.

A Complete Physical Activity Program

A rounded program of physical activity includes aerobic exercise, strength training exercise and flexibility training—but not necessarily in the same session. Create a pattern that you'll stick to and that fits into your schedule. Commitment to regular physical activity is more important than the intensity of the workouts. Choose exercises you are likely to enjoy. ACSM's Position Stand "The Recommended Quantity and Quality of Exercise for… Healthy Adults" ©1998 states that aerobic training should be performed three to five days per week for a minimum of 20 minutes per day. Remember, it's better to exercise for a shorter period of time than not at all. Typical aerobic exercises include walking and running (or treadmills), stair climbing, cycling on a stationary or moving bike, rowing, cross-country skiing, and swimming. Many devices offer a combination of these motions. Generally, strength training should be done two to three times per week, using flexible rubber resistance, free weights or weight machines. For general training, do two to three upper-body and lower-body exercises. Abdominal exercises are an important part of strength training. Flexibility training is important and frequently neglected, resulting in increased tightness as we age and become less active. Stretch with sustained gradual movements lasting at least 15 seconds per stretch. At a minimum, try to stretch every day.

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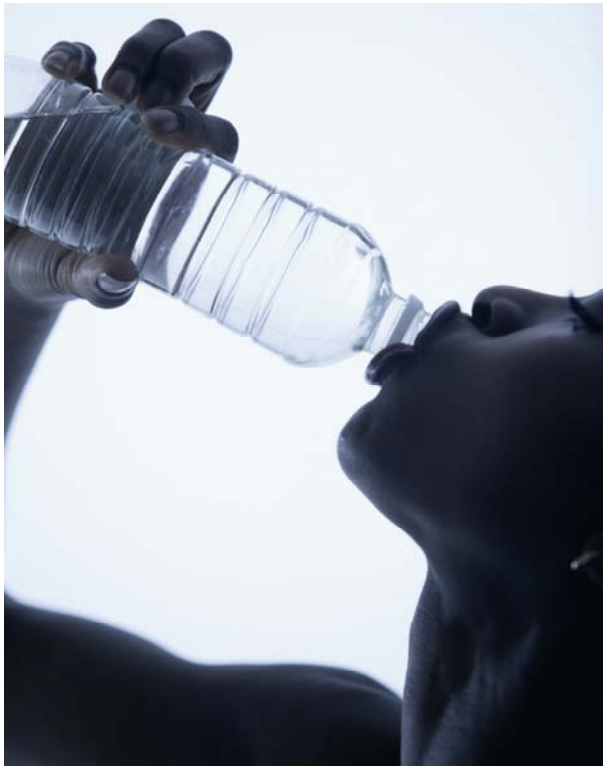
Selecting and Effectively Using

Sports Drinks, Carbohydrate Gels and Energy Bars



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Staying Active Pays Off!

Those who are physically active tend to live longer, healthier lives. Research shows that even moderate physical activity—such as 30 minutes a day of brisk walking— significantly contributes to longevity. A physically active person with such risk factors as high blood pressure, diabetes or even a smoking habit can get real benefits from regular physical activity as part of daily life.

As many dieters have found, exercise can help you stay on a diet and lose weight. What's more, regular exercise can help lower blood pressure, control blood sugar, improve cholesterol levels and build stronger, denser bones.

The First Step

Before you begin an exercise program, take a fitness test, or substantially increase your level of activity, make sure to answer the following questions. This physical activity readiness questionnaire (PAR-Q) will help determine your suitability for beginning an exercise routine or program.

- Has your doctor ever said that you have a heart condition or that you should participate in physical activity only as recommended by a doctor?
- Do you feel pain in your chest during physical activity?
- In the past month, have you had chest pain when you were not doing physical activity?
- Do you lose your balance because of dizziness? Do you ever lose consciousness?
- Do you have a bone or joint problem that could be made worse by a change in your physical activity?
- Is your doctor currently prescribing drugs for your blood pressure or a heart condition?
- Do you know of any reason you should not participate in physical activity?

If you answered yes to one or more questions, if you are over 40 years of age and have been inactive, or if you are concerned about your health, consult a physician before .taking a fitness test or substantially increasing your physical activity. If you answered no to each question, then it's likely that you can safely begin fitness testing and training.

Fatigue Factors

Depending upon the length of your workout or competition, performance and endurance are primarily limited by three factors:

- Loss of body fluids. According to a large body of research, losing more than two percent of your weight as sweat during prolonged exercise or sports activities can hamper performance.
- Drop in the levels of blood sugar. Your brain uses a steady supply of sugar in the blood (blood glucose) for fuel. During exercise or sports performance, you drain glucose levels in your blood. This can give you a lightheaded, sometimes woozy feeling.
- Depletion of muscle carbohydrate stores. As you exercise, muscles also use stored carbohydrate (glycogen) as fuel. Depending upon the intensity and duration of your workout or sports participation, your muscles can also lose carbohydrate.

Sports Drinks

Mixtures of water and carbohydrate, sports drinks make an excellent fueling and hydration choice. Years of research clearly shows that for exercise lasting anywhere from 60 minutes to several hours, drinking these carbohydrate beverages significantly boosts endurance performance compared to drinking plain water. According to some research, you can expect an improvement in endurance of about a 20 percent or more in workouts lasting over 90 minutes.

Most sports drinks offer a blend of carbohydrate sources such as the sugars sucrose, glucose, fructose, and galactose. A few beverages may also add maltodextrin, a complex carbohydrate made of several glucose units. Some research suggests that sports drinks that offer a blend of carbohydrates such as glucose and sucrose, rather than a single carbohydrate source, may improve the amount of carbohydrate that eventually gets to the muscles as fuel. By offering your intestinal tract different sugars, the rate of carbohydrate absorption is improved since different sugars are absorbed by different routes. This, in turn, means more "carbs" make it to your muscles as fuel for exercise or sports performance.

Sports drinks also come with added electrolytes. Sodium, the electrolyte lost in the greatest amount in your sweat, helps maintain fluid balance in the body and also promotes the uptake of fluid in your intestines and improves hydration.

What to look for and how to use: Most commercial sports drinks supply a blend of sugars at the right amount: 4 to nine percent solution or about 13 to 19 grams of carbs per eight ounces. Drinking 1 1/2 to four cups per hour (more if you have heavy sweat losses) will provide you with both the fluid and carbs you need for endurance. Choose a beverage flavor you enjoy as this may encourage you to drink more. "Fitness waters," while tasty, don't provide enough carbohydrate to boost endurance but certainly can keep you hydrated Drinking prior to exercise and after exercise are also important factors in maintaining proper hydration levels. For more information, refer to the ACSM Position Stand, "Exercise and Fluid Replacement".

Carbohydrate Gels

Pudding-like in texture, carbohydrate gels come in small, single-serve packets much like a sample of shampoo, making them portable fuel that you can easily put in your waistband pocket. Simply tear off the packet top at the perforation and squeeze the gel into your mouth – easily done on the run.

Gels consist of sugars and maltodextrins (the same as sports drinks but without the water), which are easily digested. Many gels come with added electrolytes that, as with sports drinks, help maintain fluid balance. Some gels also have added extras such as ginseng and other herbs, amino acids, vitamins, and Co-enzyme-Q10 (a nonessential substance found in the body). Research does not support that these ingredients have any performance benefit, but they probably are present in amounts that are too small to present any risk.

Some gels also contain caffeine in varying amounts. Check the label and consult the manufacturer's Web site for specific content as some gels have as much caffeine as a half cup of coffee, which may cause nervousness in those not accustom to this stimulant.

What to look for and how to use*:* Most carb gel packs contain 100 calories or 25 grams of carbohydrate. Try to consume one to three packets for every hour of exercise depending on the intensity and duration. Since gels come in a variety of flavors, from vanilla and chocolate to sonic strawberry and cherry bomb, find one or two you enjoy and remember to swallow them down with about 4 to 8 ounces of water.