ACSM Information On…

Selecting and Effectively Using Sports Drinks, Carbohydrate Gels and Energy Bars

Depending upon the length of your workout or competition, performance and endurance are primarily limited by loss of body fluids, drop in blood sugar levels, and depletion of muscle carbohydrate stores. All three can hinder performance. Sports drinks, carbohydrate gels and energy bars can help restore your body's fluids and carbohydrate levels.

A COMPLETE PHYSICAL ACTIVITY PROGRAM

A well-rounded physical activity program includes aerobic exercise and strength training exercise, but not necessarily in the same session. This blend helps maintain or improve cardiorespiratory and muscular fitness and overall health and function. Regular physical activity will provide more health benefits than sporadic, high intensity workouts, so choose exercises you are likely to enjoy and that you can incorporate into your schedule.

ACSM's physical activity recommendations for healthy adults, updated in 2011, recommend at least 30 minutes of moderate-intensity physical activity (working hard enough to break a sweat, but still able to carry on a conversation) five days per week, or 20 minutes of more vigorous activity three days per week. Combinations of moderate- and vigorous-intensity activity can be performed to meet this recommendation.

Examples of typical aerobic exercises are:
- Walking
- Running
- Stair climbing
- Cycling
- Rowing
- Cross country skiing
- Swimming.

In addition, strength training should be performed a minimum of two days each week, with 8-12 repetitions of 8-10 different exercises that target all major muscle groups. This type of training can be accomplished using body weight, resistance bands, free weights, medicine balls or weight machines.

SPORTS DRINKS

Sports drinks make an excellent fuel and hydration choice because they are a mix of carbohydrates and water. For exercise lasting anywhere from 60 minutes to several hours, drinking carbohydrate beverages significantly boosts endurance performance compared to drinking water. According to some research, you can expect an improvement in endurance of about 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 comprising several glucose units. Some research suggests that sports drinks offering 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, carbohydrate absorption is improved since different sugars are absorbed through different routes. This 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, promote the uptake of fluid in your intestines and improve hydration.

SPORTS DRINK CONSIDERATIONS:

- Most commercial sports drinks supply a blend of sugars: four to nine percent solution, or 13 to 19 grams of carbs, per eight ounces.
- Drinking one-and-a-half 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 to encourage you to drink appropriate amounts.
- Fitness waters do not provide enough carbohydrate to boost endurance, but they can keep you hydrated.
- Drinking before and after exercise is also an important factor in maintaining proper hydration levels.

CARBOHYDRATE GELS

Carbohydrate gels come in small, single-

serve packets, making them portable fuel that you can store in your pocket. Simply tear off the top at the perforation and squeeze the gel into your mouth. Gels consist of sugars and maltodextrins which are easily digested. Many gels come with added electrolytes that, as in sports drinks, help maintain fluid balance. Some gels also have additions, such as ginseng and other herbs, amino acids, vitamins, and co-enzyme-Q10. 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 website for specific content, as some gels have as much caffeine as a half cup of coffee, which may cause nervousness in those not accustomed to this stimulant.

CARBOHYDRATE GEL CONSIDERATIONS:

- Most carb gel packs contain 100 calories, or 25 grams of carbohydrates.
- Try to consume one to three packets for every hour of exercise.
- Gels come in a variety of flavors, including vanilla and strawberry. Find one you enjoy and swallow them down with four to eight ounces of water.

ENERGY BARS

There are many kinds of energy bars available for purchase, including high-protein bars and bars marketed specifically to women. 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 carbohydrates like sugars (brown rice syrup and sucrose) and grains (oats and rice crisps).

Glycemic index refers to how quickly these carbohydrates get into the circulation. Bars with high glycemic index, best during a workout, rapidly release carbohydrates into the blood stream, giving the muscles a quick injection of fuel. Bars with low glycemic index, best before exercise, result in a slower release of sugar into the circulation, creating sustained energy. Carbohydrates are digested and appear in the circulation at different rates, which can make predicting the glycemic index of a bar based on its ingredients challenging. The protein and fat content of energy bars also affect absorption. Most bars have high glycemic index, despite their use of various grains and other complex carbohydrates as major ingredients.

ENERGY BAR CONSIDERATIONS:

- Select a bar with about 25-40 grams of carbohydrate and less than 15 grams of protein.
- Check the label for fat content because some bars are high in fat, which slows digestion, and is not helpful in exercising.
- Eat one bar about an hour prior to a long workout.
- If you are exercising for more than an hour, eat one high-carb bar per hour of exercise and drink plenty of water.

FRUITS

Real food, such as fruit, can also be used for fueling a workout. Fruit, whether dried or fresh, supplies a shot of carbohydrate that is well digested. Dried fruit can be easily transported and stored.

FRUIT CONSIDERATIONS:

- Most fruits provide about 15 grams of carbohydrate per serving. A serving of dried fruit equals about 1/4 cup, or the equivalent, of 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 with plenty of water to stay hydrated.

STAYING ACTIVE PAYS OFF!

Those who are physically active tend to live longer, healthier lives. Research shows that moderate physical activity – such as 30 minutes a day of brisk walking – significantly contributes to longevity. Even a person with risk factors like high blood pressure, diabetes or even a smoking habit can gain real benefits from incorporating regular physical activity into their 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 if you're ready to begin 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 from 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 recently 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 exercising.

PRIOR TO EXERCISE

Prior to beginning any exercise program, including the activities depicted in this brochure, individuals should seek medical evaluation and clearance to engage in activity. Not all exercise programs are suitable for everyone, and some programs may result in injury. Activities should be carried out at a pace that is comfortable for the user. Users should discontinue participation in any exercise activity that causes pain or discomfort. In such event, medical consultation should be immediately obtained.

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