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The Optimal Athlete's **Functional Power**.
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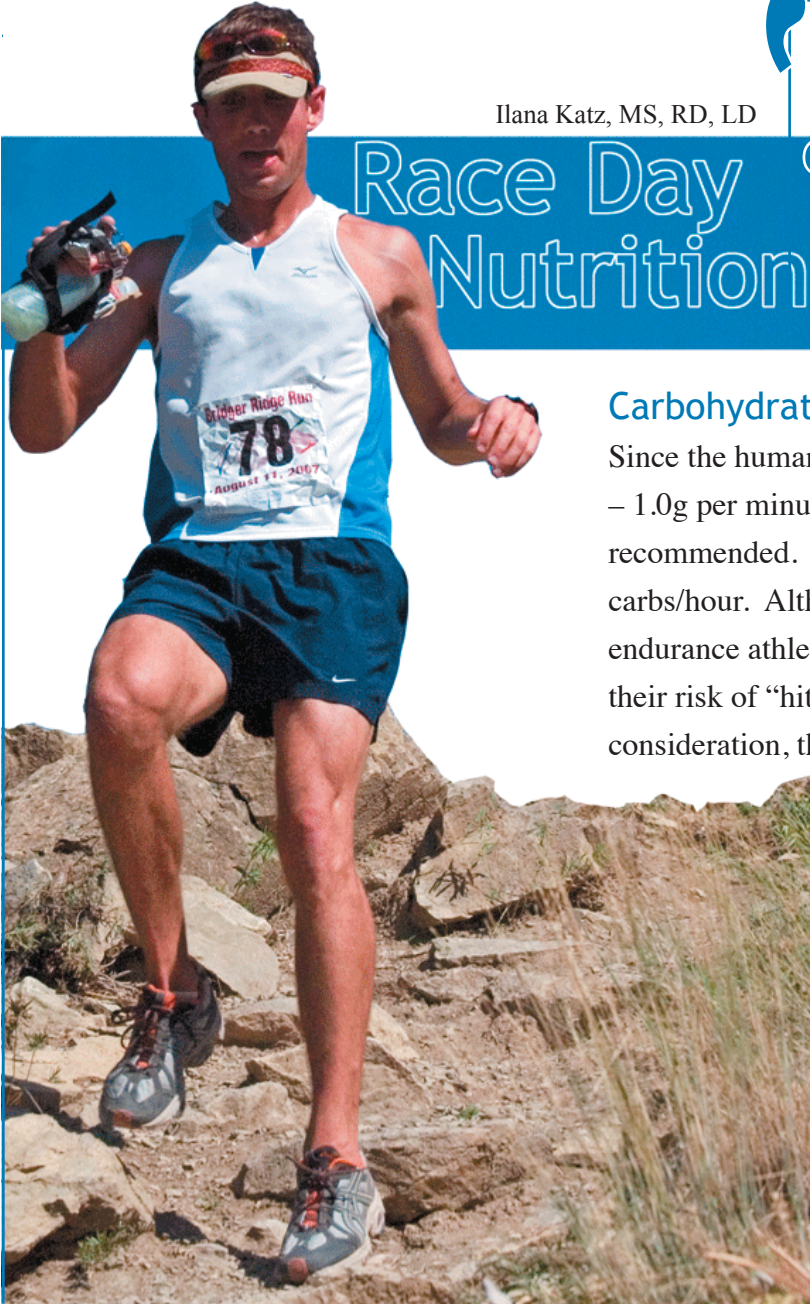


As a sports nutritionist, I am constantly amazed at how often I am approached by frantic athletes, the day before a race, who wants to know what to eat to enhance performance. It is my observation that many people assume that planning a nutritional strategy for race day in advance is not necessary for optimal performance; however, as you will learn, a well balanced diet leading up to race day, combined with scientifically formulated nutrition options, will result in logical solutions to practicality. Like training the body to perform, optimal race day nutrition can be mastered with the correct tools.

Ilana Katz, MS, RD, LD

Race Day Nutrition

“race day nutrition can be mastered with the correct tools”



Carbohydrates: the preferred fuel source

Since the human body oxidizes carbohydrates at a rate of 0.5g – 1.0g per minute, a maximum of 60g of carbs per hour is recommended. Athletes can train their bodies to absorb 100g carbs/hour. Although unnecessary, this extreme amount can help endurance athletes (events 90 minutes or more) further reduce their risk of “hitting the wall”. Strive for moderation, taking into consideration, the distance, the time, and perceived intensity of

the race. For endurance athletes, a general rule for individualizing carbohydrate intake is 1g per kg body weight per hour (70 kg athlete needs 70 g of carbs/hour) at 15 - 20 minute intervals. Although this may be a simple calculation to strive towards, practice during training sessions and allow your body to build up to these levels over the course of your training.

The exponential advancement in sports nutrition products provides a plethora of texture, flavor, and formulas. Solids, gels, and liquids are all effective, but individual tolerance of certain foods as well as quantity varies by individual and by session. Furthermore, most sports products often require water to aid with

digestion. For every 15g of carbs, 8 oz of water is recommended. Since digesting nutrients at an increased intensity is difficult, irrespective of the event time or distance, eat at least 0.5 g of carbs per kilogram of body weight within two hours before the race.

Carbo-Loading

Carbo-loading is a strategy implemented to improve glycogen storage prior to a race and to reduce the risk of premature fatigue. A safe and effective technique when utilizing this method is to gradually increase carbohydrates each day, starting a week before competition, while simultaneously tapering exercise. Current research disagrees with older strategies of carbo-loading that involved extreme depletion of carbohydrates while exercising intensely. Changing to a very high carbohydrate diet in combination with a few days of rest will effectively increase muscle glycogen to enhance race day performance.

Fats

Although fats are vital for physical activity, most individuals have enough body fat stored for energy during prolonged workouts. Increasing fat intake will only lead to less consumption of carbohydrates, thus impeding glycogen stores (glycogen being the immediate source of fuel for physical activity). Furthermore, fats have a tendency to slow down metabolism. Consider fats as the reserve tank of fuel, and keep them to a minimum during training and racing.

Protein

Protein, in itself, does not provide energy unless glycogen and fat are depleted and, like fat, protein slows metabolism. You can expect get enough protein for race day if you eat high quality proteins (such as whey, egg whites, milk, soy) as part of your daily intake. It is important to note that small amounts of protein dur-

ing a race may reduce muscle damage. Recovery does however require protein (Recommended ratio - 3 carbs to 1 protein).

Hydration & Electrolytes

Maintaining proper fluid balance pre and post race day is vital for optimal performance.

2 hours before: 8-16oz. of fluid

15 min to ½ hour before: 4 – 8 oz

During: 4 – 8 oz every 15 – 20 minutes

Post event: at least 16 oz / 16 – 24 oz per lb sweat lost*

Drink to replace sweat, but try not to over drink.

*Sweat lost is the difference in weight before and after the event (weigh with no clothes).

Sodium and potassium are electrolytes that help the body maintain proper water balance; they but are lost in sweat and need to be replaced. It is recommended that heavy sweaters consume 500 – 700 mg sodium and 100 – 400 mg of potassium per hour. Sports drinks are always a good option, as they are scientifically formulated for electrolyte replacement and simultaneously provide a hydration option. For a variety of texture and taste, salty foods, salt tablets, extra sodium gels, Gatorade Endurance^T, bananas and pretzels, are easy and convenient choices for replacing sodium and potassium while racing.

Fiber

To prevent gastrointestinal distress, keep fiber to a minimum. Fiber is difficult to digest, especially during high intensity so try to avoid whole grains and fruits with skin on race day. (For more on gastrointestinal solutions and recommendations check the July Issue of The Optimal Athlete.)

The Best Choice of Foods

- Pre-race meal (2 hours before): 2 Slices of white bread or a bagel - 25 - 30 g carb, minimal protein and fiber. Great for glycogen sparing. White bread has a higher glycemic index (faster insulin release) thus more potential for glycogen sparing than whole wheat bread. Bread on its own should be fine for energy; however, a little bit of protein/fat (such as peanut butter) can enhance the appetizing factor. Remember fat and protein are slow digesting and have a tendency to cause stomach upsets.
- 30 minutes before: Powerbar : 41g carbs, 2.4g fat, 9g protein
- Immediately before/during race: Specially formulated bars (e.g. marathon bar): some bars are higher in fat, but great tasting treats help maintain motivation.
- During race: Banana: 36g carbs, lower in fiber than other fruit, high in electrolytes, 0 g fat (perfect)
- Post race: protein shake (made from protein powder, fruit, skim milk or yogurt. Because this may not be immediately available, a good alternative is the pre made recovery drinks specifically formulated for recovery, such as Accelerade (formula with protein), Recoverite, Endurox, etc. These drinks have the desired carbohydrate and protein mix for optimal recovery.

Race day nutrition incorporates foods that are ultra low in fat, low in protein, low in fiber, and high in carbs.

Utilize your long training runs to put your race day plan into practice. Do in practice exactly what you hope to do on race day. For instance, monitor each stage of a long training run. Log how your energy feels, any gastrointestinal distress, thirst, hunger, etc. Fine-tune your approach by making adjustments one step at a time and then test any necessary tweaks during training. Just like physical training, your metabolism also needs adequate time to formulate a regimen that works for you.

Optimal Recovery

Recovery nutrition is possibly one of the most important factors for mastering race day performance. After each training session, start with carbs plus some protein as soon as possible after exercise (a good rule

of thumb is 3 or 4 carbs to 1 protein ratio). This will provide the nutrients for replenishing muscle glycogen and for muscle tissue repair to begin for the next intense training session. Within the first hour, and every hour after that (up to 4–6 hours), eat 0.75 grams of carbs for every kilogram of body weight, keeping in mind that race day will be one of the

“next” intense sessions. Mastering race day nutrition enables optimal race day performance. Remember to always use products you trained with versus trying anything new on race day to reduce the risk of gastrointestinal distress. A good practice is to determine what products the race sponsors might provide and perhaps use those products in your training.

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