

## NUTRITION AND DIETS FOR SWIMMERS

### NUTRITION ON RACE DAY!

What do you pack to eat on race day?

Everybody has a different approach when it comes to eating on race day. Having a strategy and an execution plan can remove doubt and worry about hunger, energy levels, digestive problems, and keep you focused on the race at hand.

Here are a few guidelines for smart eating and packing up the cooler:

- Do eat to start your day!! Breakfast at home or on the road is the metabolism boost every swimmer needs. Instant oatmeal (porridge) made with skim or low fat milk, toast with nut butter, dry cereal, yogurt and fruit are all light options that rev up the body. If you are competing in the morning, be sure to keep it light. Opt for a heavier breakfast if competition is in the afternoon.
- Pack variety. A few options of fruit, vegetables, grain or nuts and high quality protein sources should cover the variable appetite and tummy tolerance you may experience on race day. It's better to have more food options than a large quantity of only two or three foods. Don't make the mistake of relying on a single food or energy bars to get you through the day. While they can do the job of fueling your body, they may not rate in appetite satisfaction for long periods. Having a variety of food sources increases the odds of proper fueling and healthy eating.
- Pack enough. You don't want to run out of food, and you may want to share with other swimmers (well-fuelled swimmers help the whole team, right?)
- Pay attention to temperature. If you are packing perishables, be sure to add an ice pack. It's no fun to get tummy cramps before a race because something has spoiled.
- Pack in the protein. Protein will be an ally in keeping your blood sugar stable, thus keeping hunger, energy and mood in check. Nibble on cheese sticks or slices, nuts, peanut or nut butters, deli meat slices, yogurt or yogurt drinks, boxes of low fat milk, hummus or hard-boiled eggs.
- Don't forget the Carbohydrate. Your muscles rely on carbs for fuel. Pack easily digestible sources such as 100% juice, fruit leather, applesauce, fresh or dried

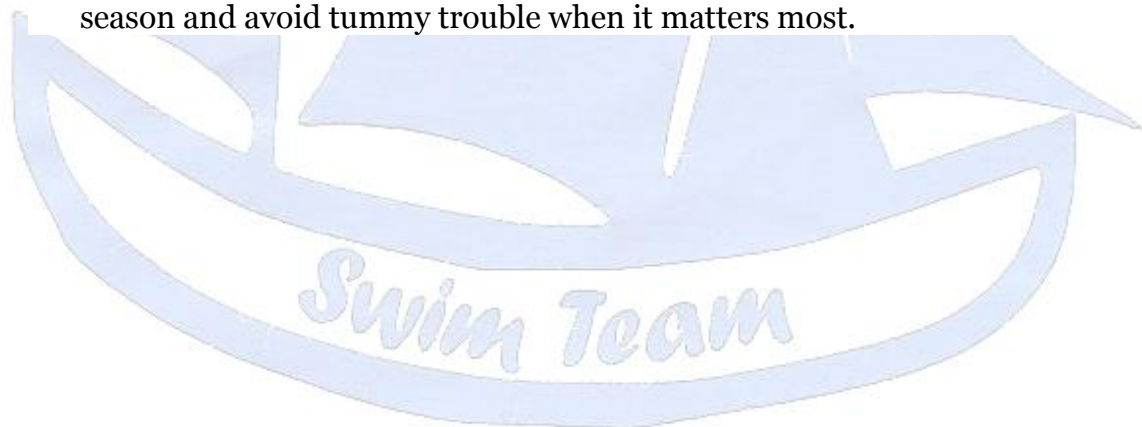
fruit, or veggie sticks. Don't forget the more complex carbohydrate foods too, such as crackers, unsweetened dry cereal, pita or other breads, pretzels and crackers. Stay away from refined sugars such as soda, candy and desserts on race day.

- Nosh or Nibble? Save “meals” or large quantities of food for big breaks between events. Nibble small amounts of food before and after events that are closely scheduled. At a minimum, you should be nibbling to stay energized and keep your muscles fuelled on race day.

- Drink your drink!! Water, 100% fruit juice and sports drinks are appropriate at a swim meet. Plain and flavored milk are great recovery drink choices after the meet; they provide protein for muscle repair and carbohydrate to re-fuel muscles.

- Know your eating style on race day. If it is counter-productive to racing, follow these guidelines as a strategy for optimal eating. Don't tempt yourself by packing foods or making concession purchases that you (really) don't want to be eating.

- Fiber Facts. Fiber can be a problem on race day, or not. Fiber is a food component to which each swimmer has an individual tolerance. Don't experiment with high fiber foods on race day; sort this out during training season and avoid tummy trouble when it matters most.



## **ENERGY DRINKS – NO NO!!**

*The USA Swimming Sports Medicine and Science Committee has recently reviewed the risks and benefits related to energy drinks and is providing information to call attention to the differences between energy drinks and "sports drinks" used for rehydration, to point out the risks associated with such drinks, and to provide suggested alternatives to use of these drinks.*

*In the coming weeks, the Sports Medicine and Science Committee will publish a series of articles on [usaswimming.org](http://usaswimming.org) on the risks of consuming energy drinks. This week, nutritionist Jill Castle covers the basic nutritional facts behind these drinks.*

### **BY JILL CASTLE, MS, RD**

Red Bull, Rock Star, Amp, Monster Energy or any energy drinks—enticing labels for a tired and thirsty swimmer. Energy drinks are one of the fastest growing segments of drink sales in America and worldwide and their popularity is growing, especially among youth. Athletes use energy drinks to rehydrate after a workout, boost attention and focus during school, “wake up,” or as a routine beverage at meals. Don’t be misled by something that sounds too good to be true—while an all-in-one drink is tempting, it carries some serious considerations for young athletes. According to the American Academy of Pediatrics (AAP), children and teens should avoid energy drinks.

**Confusion exists about the difference between a sports drink and an energy drink, so let’s clear this up. A sports drink contains a small amount of carbohydrate, minerals, electrolytes and flavourings and is designed to replace those nutrients lost through sweating after exercise. Gatorade is an example of a sports drink.**

Energy drinks contain stimulants including caffeine, guarana and yerba mate (herbal stimulants) and taurine (an amino acid). Ginseng, if present, enhances the effects of caffeine. Other elements may be added to energy drinks, but their benefits, safety and side effects are questionable.

An average energy drink contains 70-200 mg caffeine per 16 ounces. Some energy drinks can contain up to 500 mg of caffeine, the equivalent of 14 cans of soda. For children and teens, caffeine consumption should be limited to 1.25 mg per pound of body weight (for a 100-pound swimmer that’s 125 mg caffeine per day). More than 100 mg of caffeine per day in adolescents has been associated with higher blood pressures.

Growing children and teens should avoid excess caffeine consumption. Excess consumption of caffeine is associated with agitation, anxiety, poor sleep, rapid heart rate, increased blood pressure and altered mental states.

Too much caffeine can mask fatigue. Gauging fatigue is important to staying fit, healthy and in the pool. If jacked up on caffeine, swimmers may miss the body’s signal for rest.

Caffeine can alter mood and behaviour, resulting in physical dependence or addiction. How do you know if you're a caffeine-addict? Without caffeine, you experience withdrawal symptoms such as headache, tiredness, depressed mood and nausea.

If that's not enough to make you re-think your drink, here's some more food for thought.

Energy drinks contain sugar—up to 30 grams per cup (almost ¼ cup of sugar). Limiting sugar consumption is a healthy practice, for any growing child and teen, whether an athlete or not.

Energy drinks are dehydrating. Due to the concentration of caffeine, energy drinks encourage frequent urination, and energy drinks with higher sugar content can compound the dehydrating effects of caffeine.

Feeling tired, losing focus and struggling with low energy? Rethink your nutrition, hydration and sleep program. No magic bullet replaces a nutritious diet of real, wholesome food, adequate water and other healthy liquids, or a good night's sleep. And that's no (red) bull.

*Jill Castle is a registered dietitian and child nutrition expert. She is the owner of Pediatric Nutrition of Green Hills and creator of Just The Right Byte, a child and family nutrition blog. Jill lives with her husband and four children (one swimmer!) in Nashville, Tenn.*



## **DEHYDRATION – DRINK YOUR DRINK!!**

After 30 minutes of swimming, dehydration can occur. Environmental factors contribute to a swimmer's dehydration—warm water temperature and warm, humid air around the pool can increase the need for fluids. The National Association of Athletic Trainers recommends drinking about 2 cups (16 ounces) of water 2 to 3 hours before a workout or swim meet with another 1 cup (8 ounces) 10 to 20 minutes before diving into the pool. Most workouts are long and strenuous, so drink about 1 cup of fluid every 10 to 20 minutes during your workout. Keep a sports bottle filled with water at poolside so it is in easy reach.

What should you drink? Try these 5 choices and switch up your drinks for variety.

1. Water is best for most athletes. If you don't like the taste of plain water, ask mom or dad to slice up lemons or limes to drop into your water bottle for a fresh taste.
2. Sports drinks are a good choice when you have long, hard workouts or have to race many times during a meet. Stick to the basic tried and true sports drinks....like Gatorade or Powerade because they provide a good balance of carbs, sodium and potassium to replace losses.
3. Light sports drinks or zero-calorie sports drinks. These beverages, like G2 or Powerade Zero provide the same amount of sodium and potassium as regular sports drinks. These are good choices when you are trying to get lean or when injured and you are not able to train as hard or as long. These drinks contain artificial sweeteners, so drink them in moderation (1-2 servings per day).
4. Diluted fruit juice. Why dilute fruit juice? Fruit juice is too high in natural sugars to be a good fluid replacement. Fluids that have more than 6 to 7% carbohydrate (fruit juice has about 10% and some fruit juices even more) takes longer to leave the stomach so fluids don't reach your working muscles as quickly.
5. Low-fat milk is a good pre-workout and post-workout drink because it provides carbs, sodium, potassium (like sports drinks) with the added benefit of protein for muscle recovery and calcium for strong bones. Choose fat-free or 1% milk to lower the fat content; and it is OK to choose low-fat flavoured milk like strawberry or chocolate if you prefer the taste.

Staying hydrated can help improve your performance and keep you healthy. Develop an individualized fluid plan and don't wait until you are thirsty to drink...stay ahead of thirst so you don't get dehydrated.

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## PROTEIN

Do you believe protein is the “magic pill” of sports nutrition, or are you just making ends meet, trying to get enough protein in your diet? Boasting benefits like enhanced sports performance, muscle gain and improved post-event recovery, protein seems to have magical powers, and swimmers are looking for more.

Protein is a necessary part of every child’s diet. It is fundamental for organ function, new tissue development and the repair of muscle damage. Children need protein to stay healthy and grow.

The average child, aged 9-13 years, needs about 0.5 grams of protein per pound of body weight. Youth swimmers and other young athletes have a slightly higher protein requirement and need about 0.5-0.7 grams per pound of body weight, depending on age and gender.

Most Americans meet or exceed their protein needs without trouble and few are lacking this nutrient. In fact, if a young swimmer’s energy needs are met throughout the day with a balanced diet, it’s most likely that protein requirements will be met as well.

Food sources of protein include meats such as poultry and red meats; fish; eggs; dairy products such as milk, yogurt, yogurt drinks, cheese and cottage cheese, black, kidney, white, pinto and garbanzo beans; nuts and nut butters; and high protein grains such as quinoa.

Small amounts of protein are also found in cereal, crackers, bread and bread products, and other processed foods.

Some young swimmers are consuming extra protein sources such as protein-enhanced energy drinks, energy bars and supplemental powders to build more muscle tissue, and/or enhance recovery from training. According to the American Academy of Pediatrics (AAP), the regular use of these protein-enhanced foods and beverages is not recommended for young athletes. Also, the US Anti-Doping Agency (USADA) and USA Swimming considers dietary supplements “take at your own risk,” placing full responsibility for any effects and repercussions on the athlete. Eating real food sources of protein in a well-balanced diet throughout the day is optimum. The AAP also promotes the use of natural protein foods for recovery from prolonged vigorous exercise, such as low fat milk.

Are there negative effects of getting too much protein? Excess protein intake can be potentially dangerous for the young swimmer, resulting in dehydration, calcium losses in the urine, weight gain, and stress on the liver and kidneys. Also, if the focus is on eating a high protein diet, the swimmer may lack the preferred fuel source for training and racing: carbohydrates.

Tips for getting “real food” protein in the young swimmer’s diet:

Eat protein sources at each meal. An egg and milk for breakfast; peanut butter on a sandwich and yogurt at lunch; and lean meat and milk at dinner are ways to add natural protein to the diet.

Eat protein with snacks. Fruit and cheese kabobs; peanut butter crackers; nuts and dried fruit; and hummus with pita chips are all healthy snacks for the swimmer. Including protein at snack-time will keep blood sugars normal, help meet overall nutrition needs and reign in excess hunger before meals.

Eat food to recover from training sessions. Plain or flavored low-fat milk, low fat yogurt and nut-based trail mix are examples of good protein-rich choices.

