

THE IMPACT OF NUTRITION

Nutrition has an enormous impact on a swimmers' performance. Without enough energy or calories coming in, you cannot expect your body to respond quickly to the high demand of our sport. Parents and athletes need to understand the relationship between what you eat and how well you perform.

For example, without sufficient protein, muscles cannot grow stronger. Without enough calcium, magnesium, potassium and other nutrients, muscles cannot contract and relax at the proper times. Lastly, if a swimmer eats too much sugar at the wrong time, their energy will quickly diminish resulting in weakness and fatigue.

Athletic progress is accomplished by continuously stressing your body and allowing it to recover. If you do not receive adequate nutrition from your diet, this recovery is not possible. For swimmers it is even more challenging because we are conflicted between staying lean but providing enough fuel for our body. I often hear swimmers say, "I can eat anything and I don't gain a pound." Just because the scale doesn't change, doesn't mean you can eat anything and everything. It is extremely important that swimmers give themselves the right kind of fuel, at the right times throughout the day.

CHOOSING THE RIGHT ENERGY

Training and competition require large amounts of energy, which comes from **carbohydrates**, fats and protein in your body. If you do not consume enough of these macronutrients from your diet, your body will not be able to perform at a peak level. The energy needs of an athlete differ if you are male or female. As you get older, your energy needs will change again as your body grows and you acquire more muscle. Changes in training, such as higher intensity and more volume, also requires more energy used by your body.

For example a 15 year old sprinter doing 5,000 yards might require **3,500-4,500** calories a day but if the same athlete was a distance swimmer doing 9,000 yards daily they will probably need closer to **5000-6000** calories a day.

If a 17 year old female did the same workouts, she may need **3,000 -3,750** calories or **4,200-5,200** calories respectively. Fueling for performance is specific to the individual. **It not only alters athletic performance but can also change your mental state, ability to**

focus, injury, school work, etc. It can often be beneficial to meet with a Sports Dietitian to assess your needs and come up with a game plan! In the meantime, here are some tools to support you.

SWIMMERS:

Pre workout meals

The ideal pre-workout fueling includes both a **full meal** 3-4 hours before practice and a snack or “**top-off**” about **45-60 minutes before**. If you have an afternoon workout, no problem! But for swimmers, it’s just that much more challenging to fuel ourselves because practice begins at 6am sometimes. If you have an early workout the best thing we can do is provide the body with quick energy as soon as we wake up for a workout. Sometimes this means waking up a few minutes early to make what we need. **Carbohydrates that provide quick, easily digested energy for pre workout meals are listed below.**

An ideal meal includes:

1. Mostly **starchy carbs** (bread, rice, pasta, potatoes)
2. **Carb** rich fruits and veggies of all colors (avoid salad and raw vegetables)
3. Small serving of lean protein – chicken, turkey, eggs, beans, low fat dairy
4. Fluids (water or sports drink with minimal caffeine)
5. **Salty foods** (pretzels, trail mix, etc)

Before practice or competition AVOID:

- Foods you haven’t tried before
- Cream based sauces and soups
- High fat meats
- Fried foods
- Spicy foods
- High sugar items such as soda or sweets

Pre-workout Fuel	
Breakfast Ideas:	Lunch and Dinner Ideas
<ul style="list-style-type: none"> ● Cereals (hot and cold) ● Fruit and fruit juice ● English muffins, toast, bagels ● Tortillas ● Granola or cereal bars ● Pancakes, waffles, French toast ● Smoothies ● Skim or low-fat milk ● Low-fat yogurt ● Sports drinks ● Energy bars, gels, chews 	<ul style="list-style-type: none"> ● Breads, bagels, English muffins, tortillas ● Baked potatoes or sweet potatoes ● Rice ● Spaghetti with tomato based sauce ● Macaroni and cheese ● Broth based soups (i.e. vegetable, chicken noodle) ● Fruit, fruit juice, frozen fruit pops ● Smoothies ● Sports drinks ● Energy bars, gels, chews
<p><i>Have smaller portions of:</i> Eggs; nuts and peanut butter; lean meats such as chicken, ham, or turkey; low fat breakfast sausage or bacon; supplements with >5g protein per svg.</p>	<p><i>Have smaller portions of:</i> Nuts and peanut butter; lean meats such as chicken, turkey, beef, or fish; tofu; soy; supplements with >5g protein per svg.</p>

During workout

Recovery begins the minute you start working out. ***During practice you are constantly burning fuel. In order to be at your best through a two hour long workout and especially when doing doubles, you need to be fueling carbohydrates during practice.***

You have to train your body to do this, its not always easy! Practice when you're in a workout using sports drinks, fruit, granola bars, crackers, bagels, fruit snacks, dry cereal, etc. to provide the necessary carbs.

- 30-60 grams of carbohydrate is recommended per hour for those exercising 60 minutes or more
- Small amounts of protein (5-10 grams) per hour during exercise along with the carbohydrate have also been shown to have positive effects on muscle recovery
- Drink 6-8 ounces of fluids every 15-20 minutes as tolerated
- KEY TO SUCCESS: Start out consuming something small or a **liquid form of carbohydrate** in order to allow your stomach a chance to adjust to consuming calories/energy while working out. Some people get an upset stomach when trying this, the challenge is to find the **right carb source** for you and stick with it to give your body a chance to see how much better it will feel with fuel available!!!!

During Workouts or Meets

Less than 1 hour:	More than 1 hour:
<ul style="list-style-type: none"> ● Focus on getting 8+ oz of fluid and carbs ● Small portions ● Familiar foods ● Examples include: water, carb drinks, apple slices, banana, berries, bagels, crackers, dry cereal, fruit juice 	<ul style="list-style-type: none"> ● Focus on getting 16+ oz of fluid and a carb/protein snack or meal ● Larger portions ● Familiar foods ● Examples include peanut butter crackers and a piece of fruit, ½ PB&J, yogurt parfait, trail mix and a piece of fruit,

Recovery tips to take with you

- **Plan ahead.** Keep a variety of nutritious ready-to-eat snacks in your swim bag or locker, such as whole-grain crackers, low-fat cheese sticks, fruit, PB&J, granola bars, etc.
- Begin recovery **within 30-45 minutes** after practice or competition followed by a meal within 2 hours. **Liquid carbohydrate or simple carbs can be utilized during workout or right after to speed up absorption and recovery.**
- Your post workout snack should include carbohydrate and protein in a 3:1 carb to protein ratio (3 grams of carbohydrate for every 1 gram of protein).
- Keep **portion control** in mind. Replace muscle fuel or carbohydrate utilized during practice along with the energy you need to support your body's normal functioning. The higher the volume and intensity of a workout the more fuel you need to recover with. That being said, you don't have to replace *every* calorie you burn.
- **Provide protein** to aid in repair of damaged muscle tissue and to stimulate development of new tissue. **More is not better**, so shoot for 20-40 grams of protein in your recovery snacks and meals.

Quality **Protein** Snack Options for after practice

Snack	Protein grams (g)
Peanut Butter (4 Tbsp)	20 g
Nuts (1 cup)	30 g
String Cheese	10 g
2 eggs	20 g
Chocolate Milk (8 oz)	25 g
Greek Yogurt (6 oz)	15-20 g
Hummus (1/2 cup)	10 g
Cottage Cheese (1 cup)	30 g

Quality **Carbohydrate** Snack Options for after practice

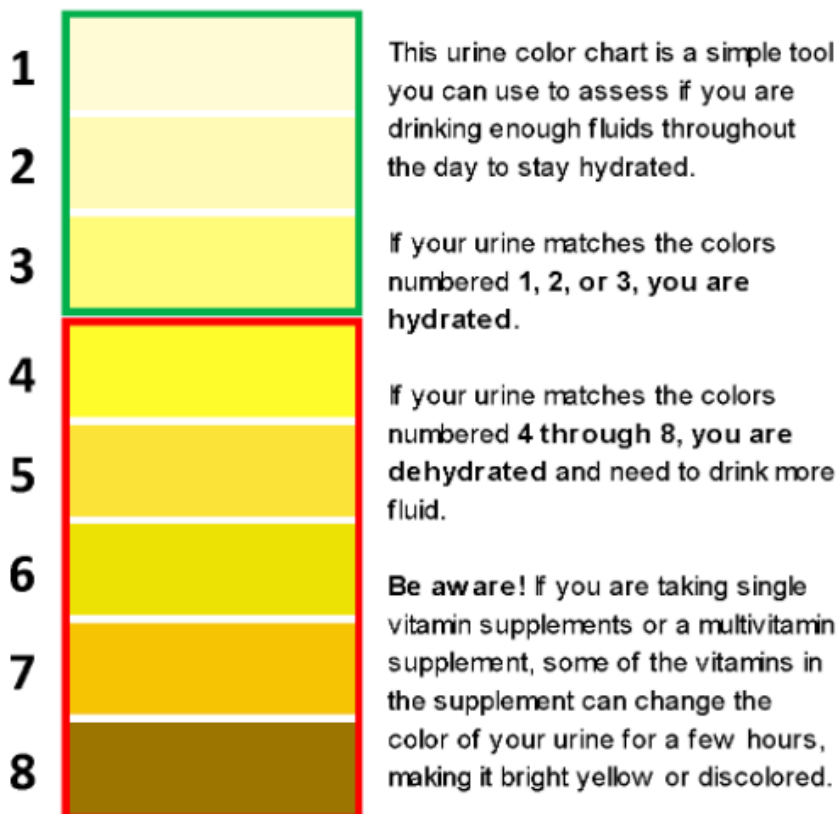
Snack	Carbohydrate grams (g)
Raisin Bran (1 cup dry)	45 g
Bagel (whole)	40 g
English Muffin	25 g
Instant Oatmeal	30 g
Chocolate Milk (8 oz)	25 g
Raisins (1/3 cup)	40 g
Apple/Banana/Orange	20-25 g
Gatorade (8 oz)	10 g

6 Steps to Being Well Hydrated

1. Begin exercise well hydrated. Drink 16 oz about 2 hours before practice and another 8-16 oz about 15-20 minutes before practice.
 2. Weigh yourself before you get in the pool.
 3. During exercise
 - If less than 60 minutes, drink 6-12 oz of water every 20 minutes
 - If more than 60 minutes drink 6-12 oz every 20 mins of a 6-8% Carb solution drink (ie Gatorade)
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1. Weigh yourself after to calculate sweat rate. For every pound you lose, drink 16-24 oz of fluid.
 2. Drink water with every meal to ensure pale yellow colored urine to indicate you are hydrated (check out the hydration chart).
 3. After exercise, **drink water with carbohydrates** to speed up the recovery process. Thirst lags behind the body's need. Prevent yourself from becoming thirsty because if you're thirsty, then you are already dehydrated.

Am I Hydrated?

Urine Color Chart



PARENTS:

Recommendations to assist your athlete in planning for competition:

1. Be prepared- send your swimmers to practice and meets with food, or, figure out where you will be eating in advance if you're away from home!
2. Constant intake of energy. Make sure snacks are available in their bags, lockers, cars, etc.
3. **Carbohydrates are key**. It is fast, available energy. **Athletes need carbs**, *so do not let the latest diet craze influence the way your athlete is fueled. You are dealing with an athlete. Not just a normal person non athletic. Teach them to understand this.*
4. If your swimmers don't eat or drink it before, during or after practice, they shouldn't consume it during a meet. A meet is not the time to try something new.
5. A meet is a good time for "supplements" such as energy bars, gels, **carbohydrate solutions**, etc.
6. Choose foods that do not cause GI distress. **High fat, high protein foods cause GI distress**. As well they are slow to empty from the stomach **unlike carbohydrates which empty quickly and supply glycogen to the body**
7. Research the area you will travel to ahead of time and determine food availability. Identify restaurants you know who offer good options, grocery stores close to the hotel, and if it is possible to prepare food in your hotel.
8. Create a timeline with your swimmer for consuming food and fluids throughout the day. This will help ensure you don't overeat or skip meals, snacks, or hydrating opportunities. The timeline should be based on their race schedule and should be practiced prior to race day.
9. When competing in multiple sessions, it is important that an athlete consume a post-race snack immediately to recover and prepare for their next race..