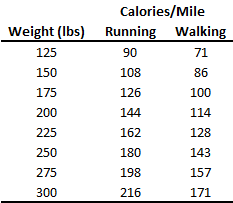
**Beginner Running Tips: Nutrition and Hydration**

1. **Pre- and Post-Workout Fueling**
   1. Fueling prior to workouts
      1. Go by personal preference, consider workout intensity/duration.
         1. With experience, you will come to learn when fueling is necessary, and when you don’t have to worry about it.
         2. We’re all a bit different, get to know your own body and let it guide you.
      2. For shorter workouts, fueling is not as critical.
         1. Some people like to have some food prior to a workout, others find that eating prior to a workout can upset the stomach.
      3. For longer, harder workouts it makes sense to have some fuel in the body.
         1. Again, you will learn with time when fueling helps and when you don’t need to worry about it.
            1. I typically only make a conscious effort to fuel before races and for long runs over about 15 miles.
      4. There is some evidence that training in a fasted state improves the ability of the body to burn fat while exercising, but improving fat burning capability probably has more impact in longer races than a 5K
   2. Fueling after workouts
      1. It’s generally good to eat and drink something after a workout.
      2. A mix of carbs and protein is best after a hard workout, but don’t overdo it.
      3. You can wipe out the calorie burn from a shorter workout with a single bottle of Gatorade or Power Bar – think before you drink!
         1. Calorie burn for running depends on body weight, below is a table with some estimates for running and walking:



1. **Race Day Fueling and Hydration**
   1. Avoid eating anything unusual the day before or the morning of a race.
      1. Foods that don’t agree with you can cause bowel issues, especially since running tends to stir up/jostle the intestines.
      2. Practice makes perfect – practice what you plan to eat/drink on race day beforehand to be certain that it agrees with you.
   2. Avoid eating within an hour before a race.
      1. I usually aim for a meal or snack about 2 hours prior to a race.
      2. Again, this helps avoid digestive issues which can ruin a race.
   3. Hydrate, but don’t overdo it.
      1. I usually stop drinking about an hour before race.
         1. Maybe have a few sips just before the race starts to top off.
      2. Drinking too much pre-race might require a bathroom break during the race.
         1. All races will have bathroom access or porta-potties, but lines can get long.
2. **Nutritional Approaches for the 5K vs. Longer Distance Races**
   1. Fueling is not necessary during a 5K.
      1. Your body has more than enough fuel stored to get you through 3.1 miles of running.
   2. Drinking during a 5K is also typically unnecessary, but not a problem if you feel you need it.
      1. Not really necessary unless it’s a hot day and you did not pre-hydrate; also likely depends on how long it takes you to finish a 5K.
   3. Fueling becomes more important as you go beyond 13.1 miles
      1. Body starts to run low on glycogen (stored carbs) around ~18-20 miles, which is why marathons are so challenging and you need a fueling plan for that distance.
      2. Managing pace is also critical in longer races so you don’t burn through your glycogen stores too quickly.
         1. You burn through your carb stores faster at faster paces.
3. **General Hydration Advice**
   1. Drink to Thirst
      1. Overdoing hydration can be just as bad (or worse) than underhydration.
         1. Drinking too much can lead to hyponatremia, a dangerous condition in which sodium concentration in blood drops too low.
            1. I learned this the hard way in the 2011 Boston Marathon – a case of mild hyponatremia landed me in the medical tent at the end of the race.
      2. Let your body tell you when to drink, it’s smarter than any general rule of thumb.
         1. If you’re thirsty, drink.
         2. Water works.
      3. I typically only use sugar sports drinks at water stops in a marathon, rarely ever in training.
   2. Summer vs. Winter – hydration approaches vary.
      1. In winter, you can get away with hydrating less.
         1. I rarely carry water with me in winter unless I’m planning to run for longer than about an hour and a half.
      2. In summer, be more careful about water intake.
         1. Having water on hand on a hot day also can help to cool you down if you pour it over your head.
         2. Cramps – popular notion is that cramps result from dehydration or electrolyte imbalance, reality is that fatigue plays a bigger role here.