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# Fuel for Running

## Breakfast: the most important meal before the run

- After a long fast during sleep it's important to refuel your glucose for energy. The latest fad is to exercise on an empty stomach in the hopes of promoting fat burning which will eventually aid in losing fat. This only happens if you have a total calorie deficit at the end of the day. Bottom line: Carbohydrates will help with endurance and speed.
  - One hour before run eat 200-300 calories and about .5g of Carbohydrates per body weight
  - Focus on lower fat to prevent GI complications
  - Focus on low to moderate fiber to prevent GI complications
  - Focus on lean protein

Ex: 1 average bowl of cereal with skim milk and a banana OR 2 pieces of whole wheat bread with a Banana and light margarine OR 1 English Muffin with 1 T Peanut butter & 1 T Honey

- Any exercise over 60 minutes you must eat 100-250 cal/hour or 25 to 65 grams of carbohydrate. The goal is to maintain normal blood sugar to feed your brain which helps concentration, focus, and mental stamina.

## Refueling

- When running 45-60 minutes or under it is not always necessary to refuel yourself after your run. You are most likely nourished enough to get you through your next snack.
- When running 60 minutes or longer at a moderate to high intensity you should refuel within 30-45 minutes. You only need about 100-200 calories focusing on a carbohydrate and lean protein (only need a product that has 10 grams of protein or less) try 8-10 oz of chocolate milk



## Hydration

- Sweat Test: Weigh yourself prior to an hour run when you think you are adequately hydrated. Weigh yourself after. Each pound lost needs to be rehydrated with 16 oz of water. If you drink water during your run you also add this to the rehydration equation.
- Keep in mind the sweat test is not accurate if you are already dehydrated. Choose to do this test on a day you are adequately hydrated.
- Drink 7-10 oz one hour prior to run, about 4-6 oz (individualized) every 15-20 minutes during run. Monitor how you feel to avoid dehydration as well as hyponatremia.
- If you are eating something that has electrolyte replacements then drink water for hydration. Drinking an electrolyte replacement drink with something like a GU can cause GI distress.
- When running for longer than an hour focus on electrolyte replacement.

## Weight Management

- Muscle weighs more than fat. It is completely normal for runners to stay the same weight on the scale when training but to shift body fat, size etc as muscle composition increases. Try not to focus on scale.
- Water retention plays a role in the number on the scale. (Remember sweat test).
- If you are not fueling yourself appropriately your body will enter the “starvation zone.” At this point it is impossible to lose weight. You must fuel appropriately to encourage weight loss.

## Carbohydrate Loading

- Long distance runners should be carb loading DAILY. Carbohydrate intake should be 4-10 grams per kilogram of weight per day (kilograms = lb/2.2 recommendation depends on distance/duration). This is proven to prevent glycogen depletion which promotes the BONK.
- Maintain same intake during taper. Since you will not be burning 600-1000 calories a day you will double your glycogen stores which will help you run harder 3 hours in
- You are carb loading correctly if you see a 2-4# weight gain during training. For every 1 oz of carb you eat you absorb 3 oz of water, this also helps prevent dehydration.
- Eat enough protein. You need about .6 g of protein per pound of weight. Focus on at least 2-3 3oz servings of protein throughout the day PLUS an additional 2-3 from dairy.
- Do not fat load
- Increase fiber to prevent constipation. At times people feel bloated when carb loading. It helps to provide relief if bowel movements are regular.



## Natural Carbohydrate Choices

ITEM	CARBOHYDRATE GRAMS	CALORIES
1/3 CUP OF RAISINS	40	150
1 MEDIUM BANANA	25	105
10 DRIED APRICOT HALVES	20	85
CORN ½ CUP	15	70
PEAS ½ CUP	10	60
GRAPE NUTS ½ CUP	48	210
RAISIN BRAN 1 CUP	45	190
LOW FAT GRANOLA ½ CUP	40	190
MILK 1 CUP	12	120
LOW FAT CHOCOLATE MILK 1 CUP	26	157
FIG NEWTON 2	22	110
HONEY 1 T	15	60
YOGURT 6 OZ	26	150
ALL NATURAL FRUIT SNACKS (1 POUCH)	19	80
BERRIES 1 CUP	12	60
APPLESAUCE ½ CUP	14	60
GRAPES 1 CUP	28	120

## Foods to Incorporate plus the Why and the How

- **Almonds** – Great source of protein plus vitamin E which is an antioxidant. Training for a marathon can put your body under oxidative stress which can affect your immune system. Add almonds to salads, yogurt, cereals and more to incorporate into daily diet.
- **Eggs** – The highest biological value of proteins, eggs provide all amino acids plus they have a good amount of vitamin K which is needed for healthy bones. Add eggs to sandwiches, burritos, salads or more. A hardboiled egg is always a great snack paired with a complex carbohydrate.
- **Oranges, Sweet Potatoes, and Grapefruit** – All provide vitamin C as well as carbohydrates. Vitamin C is proven to help with muscle soreness. It is also another antioxidant which can help with oxidative stress. All are great for a snack or as an addition to complete a meal.
- **Beans** – A great source of protein and fiber, beans also have lots of the B vitamins which are proven to help with heart health and circulation. Add Beans to your salads, rice, burritos or more. Beans also make great dips for snacks.
- **Salmon**- A great source of Vitamin D and Omega 3's. More research indicates that endurance athletes are at more risk of being deficient with Vitamin D (an important immunosuppressant). Omega 3's also decrease inflammation. Salmon is easy to cook for dinner but also tastes great on a salad or even as lox on your morning bagel.
- **Dairy**- The best source of calcium, needed for bone strength and also Vitamin D. Choose dairy that has probiotic strains included. Probiotics are proven to increase good bacteria which decrease inflammation. You should have at least 3 servings of dairy a day. Add yogurt for a quick snack or drink milk at meals or for recovery.



- **Dark Chocolate** – As a great treat, dark chocolate is high in flavonols which boost heart health. Flavonols are also an antioxidant which helps ease inflammation and prevents blood from being “sticky.” Dark Chocolate can be a treat. Focus on portions. Moderation is best. You can add dark chocolate as a boost to muffins and breads and utilize as a breakfast before your long run.

\*\*Please note the information above is generalized. All individuals have a different nutrition prescription that depends on caloric needs, lifestyle, activity factors, genetics, and co-morbidities. For specific concerns or side effect please consult your dietitian or doctor.\*\*