



The Importance of Hydration and Nutrition for Competitive Runners and Track & Field Athletes

Page

② • The importance of Hydration

③ • The importance of Nutrition

⑤ • Food and Mood

⑥ • Brain Food and Neurotransmitters

⑦ • The 5-most Important Foods for Runners
and Track & Field Athletes



The Importance of Hydration

I. Importance of Hydration

- A. To maintain plasma volume so that circulation and sweating occur at optimal levels
- B. What is so important about circulation?
 - 1. Red blood cells transport oxygen to the muscles
 - 2. White blood cells carry supplies to fix our injuries
 - 3. Platelets play a major role in blood clotting and blood vessel repair
- C. What is so important about sweating?
 - 1. Temperature regulation
 - 2. Our bodies function best when we are at the normal 98.6 temperature, so sweating cools us down when we are hot
 - 3. Does a car with a broken radiator drive very far or fast? It needs to remain at a safe temperature too!
- D. So, hydration plays a major role in our performance because of its effects on circulation and sweating

II. How do we know if we are Hydrated?

- A. Thirst
 - 1. Thirst is not a good indicator of hydration needs during exercise
 - a. If you are thirsty, then you are already in the beginning stages of dehydration
- B. Urine Color, Volume, and Odor
 - 1. When you are hydrated you will observe a light color and normal to above normal volume
 - 2. When you are dehydrated and in need of more water you will observe a dark yellow color, smaller than normal volume, and a strong odor.
 - a. Some vitamins will create a dark yellow color in urine, so odor in these cases is the best indicator

III. Electrolytes

- A. Electrolytes are minerals that are dissolved in the body as electrically charged particles called ions
- B. Some examples are sodium, chloride, magnesium, and potassium
- C. Importance of Electrolytes
 - 1. Electrolytes regulate fluid balance, nerve conduction, and muscle contraction
 - 2. Simply and most importantly, they aid in the firing of your muscles

IV. So what is important to drink?

- A. Normally water is just fine
 - 1. Electrolytes are not lost as easily as water, but they do need to be replaced during activities that are long in duration

The Importance of Nutrition

I. Fuel for our Body's

- A. Muscles depend on a combination of three types of fuel
 - 1. Lipids or Fat
 - 2. Protein
 - 3. Carbohydrates: Sugars, Starches, and Fibers
 - a. Converted into glycogen and used as glucose
- B. The mixture of fuel depends on three variables
 - 1. Diet
 - a. How much carbohydrates a person eats influences how much is stored
 - b. Like a fuel in our car, when the glycogen tank is depleted, the muscles become fatigued
 - 2. Intensity of Training
 - a. As you increase intensity, you increase glycogen or carbohydrate use
 - b. Moderate intensity increases the use of lipids or fat as the fuel source
 - 3. Duration of Training
 - a. During the first twenty minutes of exercise, glycogen is used
 - b. After twenty minutes fat begins to be the main fuel source

II. Metabolism

- A. Intake versus Output
 - 1. If we eat more energy rich foods than we use in our daily activities, then excess is stored
 - 2. If we eat too little of important energy rich foods than we need to perform, then often there can be some serious health concerns
 - a. Not having enough energy will decrease our performance by:
 - 1) Making our bodies lethargic and weak
 - a) This is our bodies way of conserving energy
 - 2) Our ability to see and make good decision may be hindered
 - 3) Other symptoms are possible too
 - 3. Therefore, rule of thumb when training and performing is eat good size, well rounded meals to give you energy
 - 4. Secondly, if you feel weak, ask yourself what have I eaten and had to drink today? This may give you insight on how to feel better in the future

III. Endurance: Maximizing our Fuel tank

- A. In our cars we want to be able to get the best miles per gallon and go the furthest on one tank of gas
- B. As performance athletes, we want to do the same
 - 1. We want to have lots of energy for multiple races or one really long race as with cross country
- C. Tips to maximize our fuel (glucose or carbohydrate) supply
 - 1. Eat a high carbohydrate diet regularly especially during the season

2. Therefore, when events are long in duration, periodically drink an electrolyte sport drink such as Gatorade or Powerade or eat a well rounded meal

B. Is the temperature of the fluid important? Yes!

1. Cold fluids are pulled into your system quicker than warm fluids
2. Cold fluids help regulate temperature and decrease the body's need for sweating (Remember, the body wants to maintain ~98.6!)

V. What types of drinks should we avoid when we are trying to be hydrated for a competition or intense training?

A. Diuretics

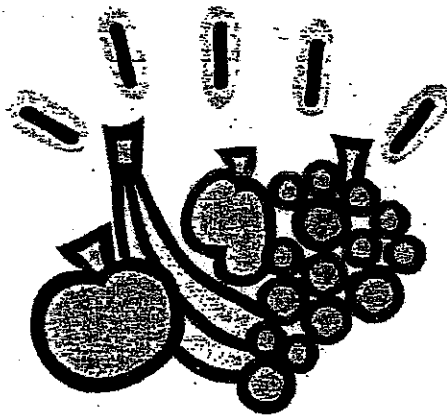
1. A Diuretic is a substance that promotes the excretion of urine and, therefore, increases the loss of water and the risk of dehydration
2. Examples of diuretics are
 - a. Soda
 - b. Tea
 - c. Coffee
 - d. And chocolate

Food & Mood

- ❖ Eating the right balance of foods each day makes a tremendous impact on how you feel: your moods and energy levels.
- ❖ If you feel tired, sad, despondent, irritable or moody, chances are you may not be eating the right balance of foods to fuel your brain.

Eating Strategies to Sustain Your Energy and Moods:

1. **Eat enough:** when you eat too few calories, your metabolic rate drops by 10–20% (150–300 calories), which means you burn less calories; you are likely to feel fatigue and irritability.
2. **Eat every 3 to 5 hours:** eating regular meals will stabilize your blood sugar, as well as elevate mood and energy levels.
3. **Make breakfast a priority:** studies show that people who regularly eat breakfast within 2 hours of rising are more likely to maintain a healthy weight. Eating breakfast boosts your metabolism, and helps maintain the right neurotransmitter balance to ensure stable moods throughout the day.
4. **Include your favorite foods to reduce cravings:** nothing needs to be forbidden; give yourself permission to fully enjoy your favorite foods, and pay attention to how much it takes to feel satisfied. It may be less than you think.
5. **Focus on adding more fruits, vegetables and whole grains:** these are full of disease-fighting nutrients and are high in fiber. Find and eat healthy foods that you really truly enjoy.



* Brain Food and Neurotransmitters:

Serotonin:

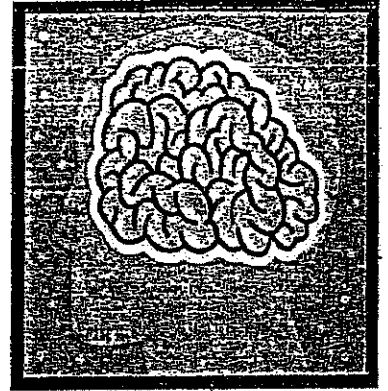
- ❖ Serotonin, a calming brain chemical, may reduce anxiety and may lead to drowsiness.
- ❖ It is the neurotransmitter most closely linked to our diet.
- ❖ Carbohydrate foods increase the production of serotonin in the brain.
- ❖ Choosing complex Carbohydrates help to stabilize the blood sugar levels and prolong the serotonin effect.
- ❖ Stress depletes levels of serotonin as do drugs and alcohol.
- ❖ Remember serotonin causes a feeling of physical satisfaction; low levels can cause one to feel unsatisfied and eat in response to that feeling.

Carbohydrate foods include: Eat 4-11 servings per day: (1/2 cup = 1 serving)

- Whole grains: barley, quinoa, oats
- Brown rice or white rice
- Pastas
- Beans
- Potatoes
- Corn
- Breads: 1 slice = 1 serving

What are Neurotransmitters?

- Neurotransmitters are the chemicals used to get messages from cell to cell in the brain.
- Three neurotransmitters: dopamine, norepinephrine and serotonin, are produced in the brain from parts of food we eat.
- Food increases or decreases the amount of these chemicals resulting in mood or performance changes.



Norepinephrine & Dopamine:

- ❖ Protein-rich foods increase the production of these neurotransmitters.
- ❖ They produce a feeling of alertness, increased ability to concentrate, and quick reflexes.
- ❖ Protein-rich foods include: fish, chicken, turkey, lean red meat, milk, cheese, yogurt, eggs, tofu, nuts and beans.
- ❖ Eat protein with every meal to balance blood sugar and reduce cravings.
- ❖ How much protein? Approximately 5-8 oz. per day.



THE 5 MOST IMPORTANT FOODS FOR RUNNERS and TRACK & FIELD ATHLETES

1. Whole grains- (slow-burning carbohydrates)

Whole grain food such as cereal, bagels, pasta, and bread give good, long-lasting energy to the whole body. (Look on the container of the food to make sure it says "100% Whole Wheat" or "100% Whole Grain". Items that just state "Grain" or "wheat" are usually white flour (fast-burning carbohydrates) with coloring.)

As the most important food group, athletes should eat many whole grain carbohydrates before an event.

2. Peanut butter-

Peanut butter is a good source of protein and essential fats, and it's easy to carry and eat on the go. Other protein sources will work as well, such as lean meat or dairy...

The important thing is to get adequate protein before and after a work out.

Protein helps the body in maintaining aerobic metabolism instead of anaerobic metabolism, which prevents the body from taking protein from lean tissue. Adequate protein speeds recovery and helps in actual performance situations.

3. Fresh fruits and Vegetables-

Fresh produce is a great way to get vitamins and minerals that help the body function as normal. They are usually fat-free and contain lots of energy for the body to use during exercise.

Some fruits, such as bananas, contain potassium, a mineral that regulates water levels in the body and stabilizes muscle contraction. Low potassium levels can lead to muscle cramps and fatigue, so eating potassium-rich foods is a good idea.

However, it is important to regulate potassium intake, because too much too quickly can lead to a heart attack.

Athletes should take in 435 milligrams of potassium for every hour they exercise.

While potassium does not aid in actual performance, it speeds recovery and should be considered as one of the most important supplements to an exercise program.

4. Calcium-Rich Foods-

Foods such as cheese, yogurt, and milk contain necessary calcium, which creates strong bones and protects athletes from injury.

These dairy products are also a good source of protein, but they should be eaten well before an event, as they take some time to process.

If the body does not tolerate dairy well, supplements should be included to ensure that athletes receive the recommended daily intake of 1000 milligrams.

As an example, a cup of skim milk provides about 300 milligrams of calcium.

5. Fiber-Rich Foods-

Fiber is the nutritional component that keeps athletes full and regulates the digestive tract.

Many of the foods already mentioned include fiber, but it is important for coaches to know which foods help athletes regulate fiber levels.

Examples of fiber-rich foods include whole grains, apples, berries, almonds, and legumes. A simple way to determine the necessary amount of fiber is to add 5 to the athlete's age. For example, a 10-year-old athlete needs about 15 grams of fiber daily.

After the age of 15, athletes need 20-25 grams of fiber a day.