

FLUID FACTS

- 60-70% of the human body is made up of water.
- The body loses fluid through the skin as sweat, through the lungs while breathing, and through urination.
- Physical activity, heat, and humidity increase the amount of fluid your body needs to stay hydrated.
- While dehydration is a lot more common it is possible to over-hydrate the body causing imbalances in sodium levels resulting in serious health problems.

AM I HYDRATED?

Staying hydrated is one of the most important things an athlete can do to maintain performance. Hydration status is affected by temperature, intensity of exercise, humidity, and type of clothing. Intense exercise in hot and humid conditions and/or with pads on increases the amount of fluid your body loses and also increases the amount you need to drink to stay hydrated. Fluid losses are different for every athlete. Individualized needs can be determined by calculating sweat rates and figuring out hydration strategies that work for each athlete. There are also other methods that can be used to monitor hydration status to make sure you are optimally hydrated for your game.

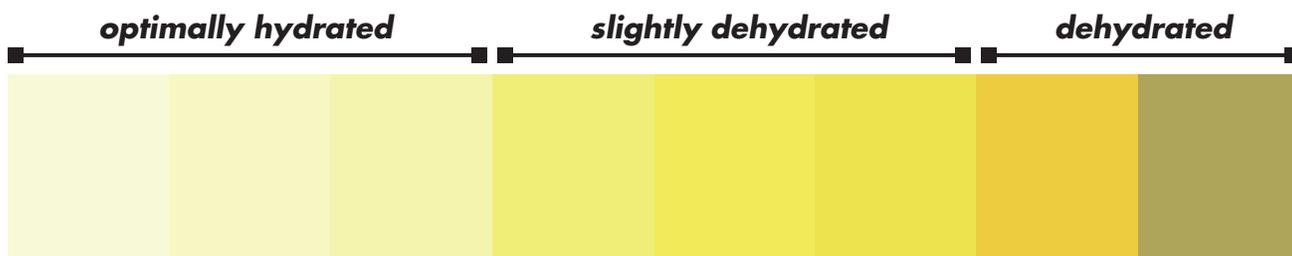
A quick and easy way to determine hydration status is to look at the color of your urine and compare it to this chart. Typically, the lighter the color of your urine the more hydrated you are. Some foods (e.g. beets) and dietary supplements (e.g. multivitamins) can alter the color of your urine making this method less accurate.

What is Dehydration?

Dehydration in athletes often occurs during practice and/or games when the body loses more fluid than is being taken in. Losing as little as 2% of your total body weight can lead to decreased athletic performance. Some common signs of dehydration include:

- *Headache*
- *Dizziness*
- *Dry mouth*
- *Thirst*
- *Decreased urine output*
- *Dark yellow urine*

If experiencing any of these symptoms stop exercising and drink fluids. In addition to decreasing mental and physical performance dehydration can also lead to serious heat illnesses. To stay healthy and optimize performance it is important to stay hydrated.





FLUID RECOMMENDATIONS

If you checked the color of your urine and it matches the slightly dehydrated to dehydrated colors on the chart then you need to drink more fluid right away. It is important to start exercise optimally hydrated. Fluid loss during exercise is different for every person so use the following recommendations as a guideline.

- For good hydration sip on water throughout the day. Carry a water bottle everywhere you go!
- Drink 8-16 ounces of water 4 hours before practice and games. If your urine is dark or you will be exercising in hot weather you may need an extra 8-16 ounces of water 15-30 minutes before exercise.
- During exercise, drink according to your sweat rate.
- After completing your practice or game replace lost fluids by drinking 16-24 ounces of fluid for every pound of body weight lost.

Monitoring Fluid Loss

In extreme conditions such as high heat and humidity fluid loss, due to sweat loss, will be higher. During these extreme times it may be useful to weigh yourself before and after practice and games to monitor fluid loss. It is important to replace fluid lost during exercise quickly so that the body is hydrated for the next activity. Keep track of your weight and drink 16-24 ounces of fluid for every pound lost.

Individualized fluid needs can be determined by calculating an athlete's sweat rate. Sweat rates vary based on gender, age, training state, intensity of exercise, and environmental conditions, so they should be calculated for different exercise conditions (e.g. summer and winter). Follow the steps in the black box to calculate your sweat rate. Every athlete's sweat rate is different. Sweat rates are measured in liters and can range from as little as 300ml to 2L. Former Olympic distance running athlete, Alberto Salazar, once recorded a sweat rate of 3.7L per hour (~8lbs)! Replacing all sweat loss may not be practical especially since large amounts of fluids can upset the stomach during exercise.

Carry a reusable water bottle with ounces or milliliters marked on the side to keep track of how much fluid you are drinking.



Calculate Your Sweat Rate

What you will need: accurate scale and water bottle with ounce or milliliter (ml) markings.

1. Weigh yourself in minimal clothing before and after a practice that is at least 1 hour in length. Towel dry your body after practice before weighing yourself.

Pre practice weight: _____ kg

Post practice weight: _____ kg

**To convert pounds to kilograms, divide pounds by 2.2*

2. Keep track of the amount of fluid you drink during practice.

Fluids consumed: _____ L

**To convert ounces to liters (L), divide ounces by 34*

3. Calculate change in body weight.

Pre practice weight - post practice weight
= _____ kg

4. Add the amount of fluid consumed during practice to the change in body weight.

Change in body weight (kg) +
fluid consumed (L) = _____

5. Divide above number by the length of practice (in hours) to get hourly sweat rate.

Sweat rate = _____ L/hr

Note: 2.2 pounds equals 1.0 kg and converts to a volume of 1.0 liter or 1,000 ml or 34 ounces of water.

** This calculation will not be accurate if you used the bathroom during practice.*