

UW Medicine

SPORTS, SPINE &
ORTHOPEDIC HEALTH

Race Day Hydration: How Much is Enough?

Having a plan for staying hydrated during a marathon is important for your race performance and your health. Dehydration and over hydration can have a detrimental effect on both, thus understanding your individual hydration needs is imperative. Just as a good training plan is necessary to get you successfully across the finish line, so is a personal hydration plan.

CALCULATE YOUR INDIVIDUAL NEEDS

Sweat Rate: Sweat rates are not uniform. They vary according to genetics, conditioning (what shape you are in), and the ambient environment (how hot or cold it is). They can range from very slow rates of sweat loss to losses up to 3 liters/hour when exercising in very hot conditions; thus, you need to calculate your own sweat rate in conditions that match the day of the race. To do this, just before a one-hour training run (preferably at marathon pace), weigh yourself unclothed. When you return from your run, disrobe, dry yourself off, and weigh yourself again. The weight difference is the amount of fluid lost. (Rapid weight loss is an indicator of fluid loss, not fat loss). If you lost one pound (16 ounces) during that one hour run, you thus need to drink 4 ounces every 15 minutes to replace your losses.

Salt Loss: Just as sweat rates are not uniform, the amount of salt in sweat is not either. Thus, salty sweaters need to consider increased salt replacement with sports drinks or even with pretzels or soup when nearing the end of the race. To estimate your salt loss in sweat, compare yourself to your training partners. Those who have a higher salt concentration in sweat are the ones with more white stains on their clothing and skin after a hard run.

HOW MUCH TO DRINK

These are general guidelines with a range given. The smaller amount should be used for a petite female and the larger amount for a heavier male. However, remember to individualize your hydration strategy as above.

Everyday:

Drink 2 Liters of fluid (68 ounces or 8-9 eight ounce glasses)
plus replace any losses related to daily exercise.

Before:

Drink 10-20 ounces 2-3 hours before exercise.
Drink another 4-10 ounces about 10 minutes before.

During:

Base this on your calculated sweat rate (above).
An estimated amount is 400-800mL/hour (15-30 ounces/hour).

After:

Drink 16-24 ounces for every pound of body weight lost.

WHAT TO DRINK

For exercise lasting less than one hour, water is adequate. When exercising more than that, it is important to have carbohydrates (sugars) and electrolytes in your fluid replacement solution, and thus a sports drink (with 6-8% carbohydrate) is appropriate.

THE PROBLEM OF OVERHYDRATION

Drinking too much fluid can dilute the sodium level in your blood and cause a potentially dangerous condition called hyponatremia (low blood sodium). Those at greater risk for developing hyponatremia include runners who drink too much before or during a race, slower-paced runners (thus a longer period when fluids can be consumed), and potentially runners who have high sodium concentration in their sweat. Thus, on race day, remember to only drink enough fluids to replace your sweat losses.

SUMMARY

Dehydration has well known effects on performance and health (slower speeds and increased risk of heat illness to name a few). Overhydration can have similar detrimental effects; thus, creating a race day hydration strategy is important. Fluid replacement schedules need to be individualized as global recommendations for fluid replacement may not be optimal for individual runners of differing body types and with varying degrees of training and heat acclimatization. Remember to create a race day hydration strategy and stick to it.

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