



# Self-Testing Program for Optimal Hydration



from *Proper Hydration for Distance Running – Identifying Individual Fluid Needs*, by Douglas J. Casa, PhD, ATC, FACSM.

Any time a runner hits the road, track, or trail to perform in a race or training session, the need to properly hydrate becomes an issue. It has long been preached to runners (and all athletes) that you should consume “as much fluid as possible” to ward off the demons of dehydration. More recently, runners and medical staff have been told to limit hydration due to the potential dangers associated with overhydrating that can occur when running for an extended period of time. So what does the runner do to address the issues related to hydration?

In USATF's new hydration guidelines, long-distance runners are instructed to consume 1 liter of fluid for every liter lost during a race. Runners should determine their fluid needs well before any race longer than an hour, by using the following procedure during a 1-hour training run. If possible, do this session in climatic conditions similar to those at the race.

1. Make sure you are properly hydrated BEFORE the workout – your urine should be clear.
2. Do a warm-up run to the point where perspiration is generated, then stop. Urinate if necessary
3. Weigh yourself naked on an accurate scale
4. Run for one hour at an intensity similar to your targeted race.
5. Drink a measured amount of a beverage of your choice during the run if and when you are thirsty. It is important that you keep track of exactly how much fluid you take in during the run.
6. Do not urinate during the run.
7. Weigh yourself naked again on the same scale you used in Step 3.
8. You may now urinate and drink more fluids as needed. Calculate your fluid needs using the following formula:

A. Enter your body weight from Step 3 in Kilograms* <i>(To convert from pounds to kilograms, divide pounds by 2.2)</i>	–	_____
B. Enter your body weight from Step 7 in Kilograms* <i>(To convert from pounds to kilograms, divide pounds by 2.2)</i>	–	_____
C. Subtract B from A	=	_____
	x	1000
D. Convert your total in C to grams by multiplying by 1000	=	_____
E. Enter the amount of fluid you consumed during the run in milliliters + <i>(To convert from ounces to milliliters, multiply ounces by 30)</i>	+	_____
F. Add E to D	=	_____
This final figure is the number of milliliters (ml) that you need to consume per hour to remain well-hydrated. If you want to convert milliliters back to ounces, simply divide by 30.		

Now you know how much you need to drink per hour in order to stay properly hydrated during a race or a long hard training run. Keep in mind that as you get in better shape over time, you may need to perform this test again to make sure that your fluid needs have not changed. By the same token, if you reduce or change your training significantly, you may also need to perform the test again.

If the expected climatic conditions for your race or long training runs change, you will also need to perform the test again in as close to the new climatic conditions as possible. Keep in mind that we now know that when conditions get hot, drinking sufficient water will not be enough to prevent heat-related illness. As the temperature rises, you simply have to slow down.

Of additional importance is determining the type of fluids to drink. In many situations, athletes can benefit from including carbohydrates and electrolytes (especially sodium) in their rehydration beverages. However, just as individual differences exist in sweat lost during exercise, individuals also can differ in the types of beverages that are most suitable. Once you have determined how much fluid you need to consume, you should begin incorporating this fluid consumption into your training runs. It is during these practice sessions that you can find out what type(s) of beverage will work best for you.

More information on hydration, including the full paper by Dr. Douglas Casa and other important information on fluid intake from Dr. Lewis Maharam, can be found at [www.usatf.org](http://www.usatf.org).