

# TRAINER TIPS | HYDRATION



WATER MAKES UP 60% OF THE AVERAGE PERSON'S BODYWEIGHT



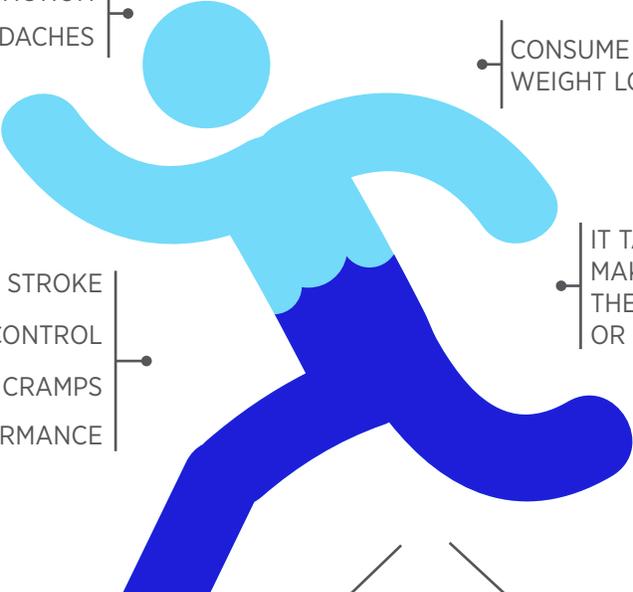
## BENEFITS OF HYDRATION



## HOW MUCH TO CONSUME

IMPROVES COGNITIVE FUNCTION  
REDUCE RISK OF HEADACHES

CONSUME 20 - 24OZ PER POUND OF WEIGHT LOSS POST-WORKOUT



REDUCE RISK OF HEAT STROKE  
IMPROVES CALORIE CONTROL  
REDUCES MUSCLE CRAMPS  
OPTIMUM PERFORMANCE

IT TAKES TIME TO **HYDRATE** AND **REHYDRATE**—MAKE HYDRATION A HABIT THROUGHOUT THE DAY AND NOT JUST BEFORE OR AFTER EXERCISE



## HYDRATION TIPS



### ARE YOU HYDRATED



### STAY HYDRATED

USE URINE COLOR AS A GUIDE



Adequate Hydration

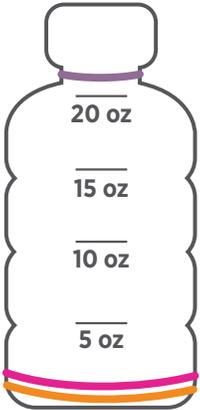
Inadequate Hydration

Water bottle labeled with volume measurements with rubber bands around the bottom. Every time you finish a bottle, you slide a rubber band to the top to help remind you to drink throughout the day.

### DRINKING WATER DURING EXERCISE:

< 60 minutes: Water is sufficient

> 60 - 90 minutes: Add a 6 - 8% carbohydrate drink



www.NSCA.com

FITNESS GOAL: \_\_\_\_\_

TRAINER NAME: \_\_\_\_\_

PHONE: \_\_\_\_\_

EMAIL: \_\_\_\_\_

Water makes up approximately 60% of the average person's bodyweight. Adequate water intake is essential for our health and physical performance. Insufficient water intake can lead to a myriad of negative outcomes ranging from headaches and reduced athletic performance to heat injury such as heat stroke or even death.

One of the most common recommendations regarding how much water a person should drink is 8 x 8 oz cups per day. However, there are no actual hard and fast guidelines, as the actual amount of water needed depends on a number of factors, such as heat and humidity levels and individual differences including sweat rate, level of acclimatization, body mass, and exercise intensity and duration, just to name a few.

Because individual differences account for large variations in hydration recommendations it's important to know your individual sweat rate and monitor your hydration status via urine color.

### TO DETERMINE YOUR SWEAT RATE [2]

Sweat rate refers to how much sweat you lose in a given workout. A good rule of thumb is to check your sweat rate every 3 months, or at the start of each season by following these steps:

- Step 1.** Weigh yourself naked before exercise (e.g., 180 lb).
- Step 2.** Exercise for 1 hour (drink normally during exercise but avoid eating) and track your fluid intake (e.g., 4 oz)
- Step 3.** Weigh yourself naked post-exercise (e.g., 178.5 lb).
- Step 4.** To calculate your sweat rate simply subtract your post-exercise weight from your pre-exercise weight then add the weight/volume of any fluids you consumed.

#### Using our example:

180 lb (pre-exercise) - 178.5 lb (post-exercise) = 1.5 lb (sweat loss) + 4 oz (fluids consumed during exercise) (0.25 lb) = 1.75 lb of sweat lost per hour

### TO MONITOR YOUR HYDRATION STATUS [1]

A quick and practical way to monitor hydration status is to look at urine color. Clear to light yellow (think of a light lemonade) color indicates adequate hydration, while darker, strong smelling urine indicates dehydration. Keep in mind that vitamins may cause a darker color not representative of actual hydration status.

### PRE-WORKOUT HYDRATION

It is important to start your workouts well hydrated to reduce the risk of heat injury, optimize performance, and maximize recovery. Use your urine color as a guide for how well hydrated you are. If your urine is a dark yellow or strong smelling, or your frequency of urination is low, it is generally recommended to consume 0.08-0.12 oz of fluid per pound of bodyweight 4 hours before exercise [3]. If this isn't adequate to turn your urine a light or pale yellow color, or you exercise early in the morning and do not have 4 hours available before your workout, consume 0.05-0.08 oz of fluid per pound of bodyweight in the 2 hours before exercise [3].

### DURING WORKOUT HYDRATION

The goal of fluid replacement during exercise is to prevent dehydration by matching sweat loss. As you become more dehydrated, performance decreases and body temperature rises, increasing risk of heat illness or injury. So, knowing your sweat rate is important.

Most individuals only replace about 2/3 of the water they lose in sweat during an exercise bout [2]. But while we used to say thirst is not a good indicator of hydration status, because by the time you feel thirsty you are already a little dehydrated, the latest research indicates this slight dehydration does not seem to have any negative effects on performance. Nonetheless, it is advised that heavy sweaters drink on a preplanned schedule based on their known sweat rate, as opposed to thirst-based.

### WHAT SHOULD WE DRINK DURING EXERCISE?

Plain water is sufficient to meet the needs of most individuals during a resistance training session of 1 hour or less. The exception might be those that are sweating excessively and/or those that did not start well hydrated. For a longer duration session or someone with high sweat rates, a fluid with added electrolytes is recommended. The primary electrolyte in sweat is sodium so any fluid intake should reflect this. The addition of carbohydrates at a maximum of 6-8% concentration will facilitate a greater absorption of sodium and subsequently water into the blood from the gastrointestinal system. Why 6-8%? The majority of research in this area indicates this is the maximum concentration to allow maximum absorption. The additional carbohydrates can also provide energy for prolonged activity (i.e., >60-90 minutes).

For clients who are monitoring body composition and calories, the addition of carbohydrates should be considered and weighed in the context of maintaining high-quality workouts and overall daily caloric intake.

### POST-WORKOUT HYDRATION

While starting an exercise session hydrated and maintaining adequate hydration during the session are good goals, the reality is many individuals finish a workout dehydrated to some degree. Once again, monitoring sweat loss by simple weighing pre- and post-exercise can provide clients with a simple means to determine their level of post-exercise dehydration and guide rehydration strategies. Similarly, use water bottles with measured volumes on them, or keep track of the number of cups of fluid consumed, so you are not leaving rehydration to chance.

It is recommended clients consume 20–24 ounces of fluid for every pound of bodyweight lost [3]. Remember though, that all foods have some amount of water in them, so if you are consuming a meal or snack post-exercise with your drink, your foods will contribute to overcoming your sweat loss. The addition of small amounts of sodium (e.g., a pinch) to foods consumed post-exercise or an electrolyte beverage after prolonged exercise or heavy sweating, will not only assist in restoring electrolyte balance but also increase your sense of thirst promoting greater hydration.

### Other Considerations

- Always carry a water bottle with volume markings so you can easily track intake
- Each time you drink your entire water bottle, place a rubber band around it. This is a simple way to track your fluid intake throughout the day.
  - This will also give you an idea of how much water you normally drink on days when you are exercising light or hard. When combined with monitoring your training and hydration status (i.e., urine color) you can work out how much fluid you need to stay hydrated
- Reassess your sweat rate every 3 months
  - The change of season means different temperature and humidity levels, which affect sweat rate
  - The better trained you are the higher your sweat rate (so you cool faster), so you need to adjust your fluid intake accordingly
- Factors that effect fluid intake include:
  - a. Taste
  - b. Temp [cooler than ambient (59–72°F)]
  - c. Color
  - d. Electrolyte composition (thirst drive)
  - e. Availability
  - f. Containers promoting consumption—wide mouth increases consumption

### REFERENCES

1. Lopez, R. Exercise and hydration: Individualizing fluid replacement guidelines. *Strength and Conditioning Journal* 34(4): 49-54, 2012.
2. Spano, M. Nutrition in the personal training setting. In: Coburn, JW, and Malek, MH (Eds.), *NSCA's Essentials of Personal Training*. (2nd ed.) Champaign, IL: Human Kinetics; 107-123, 2012.
3. Sawka, MN, et al. American College of Sports Medicine Position Stand: Exercise and Fluid Replacement. *Medicine and Science in Sports Exercise* 39(2): 377-390, 2007.
4. Shirreffs, SM, et al. Post-exercise rehydration in man: Effects of volume consumed and drink sodium content. *Medicine and Science in Sports Exercise* 28(10): 1260-1271, 1996.