



BUL 1103



# Water and Electrolytes

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### Contents

- 1 Introduction
- 1 Water
- 1 Calculate Your Water Needs
- 2 Electrolytes
- 2 Summary
- 2 Further Reading



## Introduction

MAINTAINING A WATER BALANCE (also called fluid balance) is important to our health. Drinking water and other unsweetened beverages and consuming foods with higher water content (like fruits and vegetables) contribute to its maintenance. Consuming appropriate amounts of electrolytes, such as sodium, chloride, and potassium, is also important. Too much or too little water/electrolyte intake can lead to poor health outcomes, like dehydration. This bulletin helps you to understand the importance of water and electrolytes in a healthy diet.

## Water

Drinking water supports life. It helps us to maintain our body temperature, get rid of waste, transport nutrients into our cells, and lubricate our joints. Without it we become dehydrated, which leads to headache, fatigue, dizziness, dry mouth, and low blood pressure with a high heart rate. In severe cases, dehydration can lead to death. Water is calorie- and sugar-free compared to juice, sugar-sweetened beverages, sweetened coffee drinks, and other consumer-produced beverages drunk in the United States. Therefore, prioritize water as your daily beverage. The aforementioned other frequently consumed beverages only provide significant calories and sugar to our bodies without giving us a sense of satiety or fullness. The latter often influences us to ingest too many calories and thus contributes to weight gain. Furthermore, the high sugar in these beverages causes dental problems, like cavities and weakened enamel. In order to avoid the complications resulting from their intake, drink water as your main beverage throughout the day and limit sugar-sweetened beverages to special occasions. To liven up the flavor of water, try sparkling water, either plain or in a variety of flavors, or add fresh fruit, vegetables, or herbs. Just make sure to choose unsweetened sparkling water.

## Calculate Your Water Needs

Most adults meet their needs for water by consuming 35 mL per kilogram (kg) of body weight. For example, a person

weighing 150 pounds needs approximately 2,380 mL/80.5 oz (or just over 2 L) of water. To calculate this, convert pounds to kg, using the following 2.2 conversion factor: 150 lb/2.2 = 68 kg. Then multiply, 68 kg x 35 mL = 2,380 mL.

To calculate your own water needs, use Figure 1. Write your weight in pounds in box 1 and divide it by 2.2. Enter the answer in box 2. Then, multiply box 2 by 35 mL to discover your water needs (box 3).

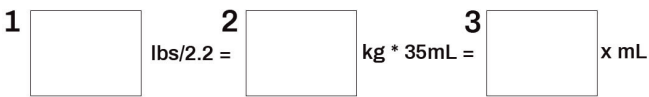


Figure 1. How to calculate your own water needs.

## Electrolytes

Electrolytes are elements that hold a charge, either negative or positive. This allows them to conduct electrical charges throughout our cells. They are also involved in **water balance** (maintaining the level of water our bodies hold and the level of water in our cells). Table 1 lists the electrolytes, their charges, and the dietary sources of these nutrients. Since electrolytes are found in foods that we commonly consume, deficiencies for most of them are rare. The exceptions to this are calcium, potassium, and magnesium, nutrients that have been identified as underconsumed. Increasing your intake of fruits, vegetables, dairy products, whole grains, and nuts helps to ensure that you are meeting your electrolyte needs. Many of these foods, fruit, vegetables, and milk for example, also contribute fluids to our water balance, so by eating them you consume both electrolytes and fluids in one food. In contrast, sodium is regarded as an overconsumed nutrient because of its prevalence in processed foods. To limit sodium intake, use fresh ingredients (i.e., not from a box) and cook most meals at home while limiting your intake of fast foods and other highly processed foods like chips, frozen foods, and canned soups.

Because we meet our needs for electrolytes from ingesting foods and beverages (or in the case of the electrolyte bicarbonate, we make it in our bodies), the average person does not need a supplemental source of electrolytes, including electrolyte drinks

Table 1. Electrolyte and food sources.

Sodium (+)	Salt, dairy products, processed foods
Chloride (-)	Salt, fruits, vegetables
Potassium (+)	Fruits, vegetables
Calcium (+)	Dairy products, dark leafy greens
Magnesium (+)	Dark leafy greens, nuts, whole grains
Phosphorous (-)	Dairy products, legumes, nuts, red meat, poultry
Bicarbonate (-)	Made by your body

like Gatorade and Pedialyte. The exception to this rule is when you have disproportionately lost electrolytes from sweating or vomiting, such as after vigorous physical activity, a fever, or the stomach flu (with diarrhea and/or vomiting). In these cases, replace both electrolytes and fluids to rehydrate. Alternately, drinking water or milk or having a snack like a banana or avocado also replaces fluids and electrolytes.

## Summary

Water and electrolytes are essential for our bodies to function properly. By drinking water as our beverage of choice and consuming a variety of fruits, vegetables, nuts, whole grains, dairy, and meat products you more easily meet your needs. Electrolyte drinks like Gatorade and Pedialyte are only appropriate after loss of electrolytes from vigorous activity (Gatorade after exercise-induced dehydration) or illness (Pedialyte for illness-induced dehydration). To add more flavor to your beverages, try sparkling water or infusing water with fruits, vegetables, and herbs.

## Further Reading

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