

# Hydration Salvation:

## *The importance of Water & Electrolytes*



### Electrolytes

Electrolytes are essential minerals- like sodium, potassium, calcium, magnesium and chloride - that are important for cellular health and helping the body perform countless functions. Electrolytes also help us absorb water, which is why it is so important to drink more than just water alone when you are hydrating before, during or after your practices and games.

Have you ever had “salty” sweat or sweat stains after a workout? That’s because we are losing electrolytes, as well as water. In sweat, we lose mainly sodium and chloride than any other mineral. Other ways we lose electrolytes are in urine, vomiting and diarrhea. All the more reason to make sure we are staying hydrated. Electrolytes can be found in a variety of sports drinks and sport powders. You can also find them in a variety of whole foods that are rich in each of these electrolytes, as well as many other important nutrients!

## Hydration Myths VS Facts

Myth	Fact
Pure water alone is enough to rehydrate you before, during and after exercise.	If your workout causes you to sweat heavily, you will want to use a sports drink (Gatorade, Powerade, electrolyte powders, or try our homemade gatorade recipe) to replenish your electrolytes.
Coffee and tea are considered hydrating drinks because they are liquid and are made with water.	Coffee and tea contain caffeine, which acts as a diuretic. Diuretics cause you to lose water and electrolytes through your urine. This can cause dehydration.
You can't overhydrate.	Too much water can be dangerous because it will dilute the electrolytes in your body that are needed for proper hydration.

Electrolyte	Bodily Functions	Fruits/ Vegetables	Other Sources
Potassium	<ul style="list-style-type: none"> <li>• Maintenance of fluid and blood volume</li> <li>• Blood pressure regulation</li> <li>• Regulates heart beat</li> <li>• Nerve and muscle function</li> <li>• Carbohydrate metabolism</li> <li>• Protein synthesis</li> </ul>	<ul style="list-style-type: none"> <li>• Cantaloupe</li> <li>• Bananas</li> <li>• Apricots</li> <li>• Dried fruits</li> <li>• Avocado</li> <li>• Grapes</li> <li>• Honeydew melon</li> <li>• Peach</li> <li>• Artichoke</li> <li>• Brussels sprouts</li> <li>• Pumpkin</li> <li>• Spinach</li> <li>• Mushroom</li> <li>• Potato</li> <li>• Tomato/ tomato juice/ V8® juice</li> <li>• Grapefruit juice</li> <li>• Orange juice</li> </ul>	<ul style="list-style-type: none"> <li>• Legumes - lima/navy/pinto/ kidney beans and peas</li> <li>• Peanuts/Peanut butter</li> <li>• Hazelnuts</li> <li>• Almonds</li> <li>• Meat</li> <li>• Tuna</li> <li>• Poultry</li> <li>• Eggs</li> </ul>
Calcium	<ul style="list-style-type: none"> <li>• Bone health</li> <li>• Blood clotting</li> <li>• Heart function</li> <li>• Muscle contraction</li> <li>• Nerve signaling</li> <li>• Enables cellular communication</li> </ul>	<ul style="list-style-type: none"> <li>• Dairy products: milk, yogurt, cheese, cream, ice cream</li> <li>• Kale</li> <li>• Broccoli</li> <li>• Chinese cabbage</li> <li>• Fortified foods: whole grains, soy products, fruit juices, cereals</li> </ul>	<ul style="list-style-type: none"> <li>• Brown rice</li> <li>• Wheat germ</li> <li>• Oatmeal</li> <li>• Peanuts/ peanut butter</li> <li>• Almonds</li> <li>• Cashews</li> <li>• Pumpkin seeds</li> <li>• Lentils</li> <li>• Hummus</li> <li>• Pumpkin seeds</li> <li>• Tahini (sesame paste)</li> <li>• Halibut</li> <li>• Shrimp</li> <li>• Tuna</li> <li>• Crabmeat</li> <li>• Salmon</li> <li>• Bluefish</li> <li>• Cocoa</li> <li>• Chocolate</li> </ul>

			<ul style="list-style-type: none"> <li>• Molasses</li> </ul>
Magnesium	<ul style="list-style-type: none"> <li>• Muscle contraction</li> <li>• Nerve impulses</li> <li>• Heart &amp; blood pressure function</li> <li>• Builds strong bones</li> </ul>	<ul style="list-style-type: none"> <li>• Spinach</li> <li>• Squash</li> <li>• Swiss chard</li> <li>• Broccoli</li> <li>• Avocado</li> <li>• Artichoke</li> <li>• Bananas</li> <li>• Dried apricots</li> <li>• Raisins</li> <li>• Kiwi</li> <li>• Prunes</li> <li>• Watermelon</li> </ul>	
Chloride	<ul style="list-style-type: none"> <li>• Fluid balance</li> <li>• Acid-base (pH) balance</li> <li>• Blood circulation</li> <li>• Immune &amp; gut health</li> </ul>	<ul style="list-style-type: none"> <li>• Tomatoes</li> <li>• Lettuce</li> <li>• Celery</li> </ul>	<ul style="list-style-type: none"> <li>• Table salt (sodium-chloride)</li> <li>• Olives</li> <li>• Seafood &amp; seaweed</li> <li>• Whole-grains</li> <li>• Rye</li> </ul>
Sodium	<ul style="list-style-type: none"> <li>• Maintenance of fluid and blood volume</li> <li>• Blood pressure regulation</li> <li>• Muscle contraction</li> <li>• Nerve impulse</li> </ul>		<ul style="list-style-type: none"> <li>• Fast food</li> <li>• Processed food</li> <li>• Table salt</li> <li>• Breads and rolls</li> <li>• Pizza</li> <li>• Sandwiches</li> <li>• Cold cuts and cured meats</li> <li>• Soups</li> <li>• Burritos and tacos</li> <li>• Savory snacks: chips, popcorn, pretzels, snack mixes, crackers</li> <li>• Chicken</li> <li>• Cheese</li> <li>• Eggs and Omelets</li> </ul>



## Proper Hydration for Athletes

### ***Why should I care about my water intake?***

As athletes, you lose a significant amount of water and electrolytes through your sweat during exercise and training. Because of this, athletes are at risk for dehydration.

Dehydration has the potential to affect athletic performance, impact overall health and can be dangerous if left untreated. Be aware of the signs of dehydration such as thirst, less-frequent urination, dry skin, fatigue, light-headedness, dizziness, confusion, dry mouth, weakness, fatigue, muscle cramps, increased heart rate and breathing.

Factors that may cause dehydration include alcohol consumption, hot or humid environment, caffeine (coffee & tea), high-protein diet and high physical activity. Use the Urine Color Chart below to check your hydration status.

### ***General Fluid Recommendations:***

- Everyone's body is different, so we all have different water recommendations. This depends on how much you sweat, your current hydration status, environmental factors, and the concentration of electrolytes in your sweat. As a general rule, drink 4oz of water ( $\frac{1}{2}$  cup of water) every 15-20 minutes of exercise (1 cup of water every 20-40 minutes).

<b><i>Timing of Exercise</i></b>	<b><i>Hydration Recommendation</i></b>
<b>Before Exercise</b>	<p><i>8-12 hours or less since your last training session:</i></p> <ul style="list-style-type: none"> <li>❖ Aim to slowly consume between 2.5 to 7 water bottles worth of water leading up to training/competition (42.7 oz to 114.5 oz).</li> <li>❖ The recommendation will be different for everyone. Aim to slowly consume about 5 to 7 mL of fluid per 1 kg of body weight (a standard water bottle contains 500mL).</li> </ul>
<b>During Exercise</b>	<ul style="list-style-type: none"> <li>❖ Aim to consume 0.5 to 1 standard water bottle (8-16 oz) worth of water per hour of physical activity.</li> <li>❖ When exercising for more than one hour, it is beneficial to consume sports drinks (Gatorade and Powerade) because they contain electrolytes to keep you hydrated and carbohydrates to fuel you with energy.</li> </ul>
<b>After Exercise</b>	<ul style="list-style-type: none"> <li>❖ After the event, drink 1 water bottle worth of water (16 oz) for every pound of weight lost during the event.</li> </ul>

# AM I HYDRATED?

## Urine Color Chart

1		
2		If your urine matches the colors 1, 2, or 3, you are properly hydrated.
3		Continue to consume fluids at the recommended amounts.
4		If your urine color is below the <b>RED</b> line, you are
5		<b>DEHYDRATED</b> and at risk for cramping and/or a heat illness!!
6		<b>YOU NEED TO DRINK MORE WATER!</b>
7		
8		

Retrieved from:

<http://nutrition.ilcreations.com/newsletters/hydrateyourplateforhealthyweightandwell-being>

- If you are currently between a 4 - 8 on the urine color chart, try to gradually increase your fluid intake.
  - Try increasing your water intake by  $\frac{1}{4}$  of a water bottle per day for the first week. For the second week, increase your water intake by an additional  $\frac{1}{4}$  of a water bottle per day. Continue this slow increase, and by week four you will be consuming 1 additional water bottle per week.
- One standard water bottle contains about 16 oz of water



# Homemade Sports Drink Recipe

This budget-friendly homemade sports drink is great for electrolyte replacement during and after practices, training and games, where exercise consists of 45+ minutes of high intensity or 90+ minutes of long and moderate intensity. It contains important electrolytes, such as sodium, chloride and potassium that can help combat dehydration and electrolyte imbalance. Instead of artificial flavors and dyes that are found in many sports drinks, this recipe contains fresh citrus from lemons and oranges (vitamin C, vitamin A and calcium source). You can also use reconstituted frozen orange and lemon juice to make it more convenient. Vitamin C supports our immune health, aids in connective tissue repair, and along with vitamin A, serves as an antioxidant. Natural calcium that is found in oranges also helps support nerve function, muscle contraction and aids in bone health. This thirst-quenching drink not only includes sodium, but also includes potassium chloride ([Nu-Salt](#)) - a convenient and budget-friendly way to save you a few bucks from buying other sports drinks.\* Adjust the sugar, sodium, and/or potassium levels to meet your specific hydration needs. Be sure to serve the finished beverage cold for optimal consumption and refreshing hydration. You can also freeze your sports mix and make it into ice-cubes or popsicles for the ultimate post-workout chill. Cheers!

*\*Please note that if you have hypertension (high blood pressure), heart disease, kidney disease, or other health issues this product is not safe or recommended. It is always important to check with your registered dietitian or health care provider before taking any new supplements.*

## **Recipe:**

Makes 2 quarts, 6 servings

1 serving: (~12 fl. oz. each)

- 1/2 tsp. salt
- 1/4 tsp. potassium chloride (Nu-Salt)
- 2/3 cup sugar (organic, if possible)
- 2 Tbsp. fresh lemon juice
- 12 fl. oz. (1-1/2 cups) orange juice
- 6-1/2 cups water



**Directions:**

1. Cut oranges and lemons and squeeze out juices. If using canned or frozen orange juice, open the container.
2. In a large container, combine all ingredients and mix. Adjust ingredients to flavor preference.
3. Hydrate and chill.

**Nutrition Facts:**

Nutrient	Homemade Sports Drink per serving (340 mL)	“Gatorade Thirst Quencher” per serving (355 mL)
Calories	82	80
Total Fat	0	0
Cholesterol	0	0
Sodium	200mg	160 mg
Potassium*	260mg	45 mg
Total Carbohydrate	23 g	21 g
Sugars	16 g	21 g
Dietary Fiber	0	0
Vitamin A	27 mcg	0
Vitamin C	28 mg	15 mg
Calcium	15 mg	0
Magnesium	10 mg	0
Iron	0	0
Folate	19 mcg	0

\*Note: Potassium level in “homemade sports drink” is 126 mg per 12-fl. oz. *without* addition of Nu-Salt salt substitute, which contains 530 mg potassium per 1/16 teaspoon.



The Cougar Pantry serves free food to all CSUSM students. Each Student may visit once per week, in addition to attending Fresh Market Mondays (every Monday in Chavez Plaza from 10am - 1pm) and Produce Truck Tuesdays (first tuesday of every month in front of Markstein Hall from 12-1 pm) for fresh produce. Cougar Pantry is located in **USU 3100A** and the hours are as follows:

**Mondays: closed for Fresh Market**  
**Mondays; Tuesday - Thursday: 9 AM - 5 PM**  
**Friday: 9 AM - 1 PM**

*Don't forget your reusable bag and student ID!*