



# STAY HEALTHY ONBOARD GUIDE

AUGUST 2023

## Dehydration

*Signs, Symptoms and Prevention on Board*





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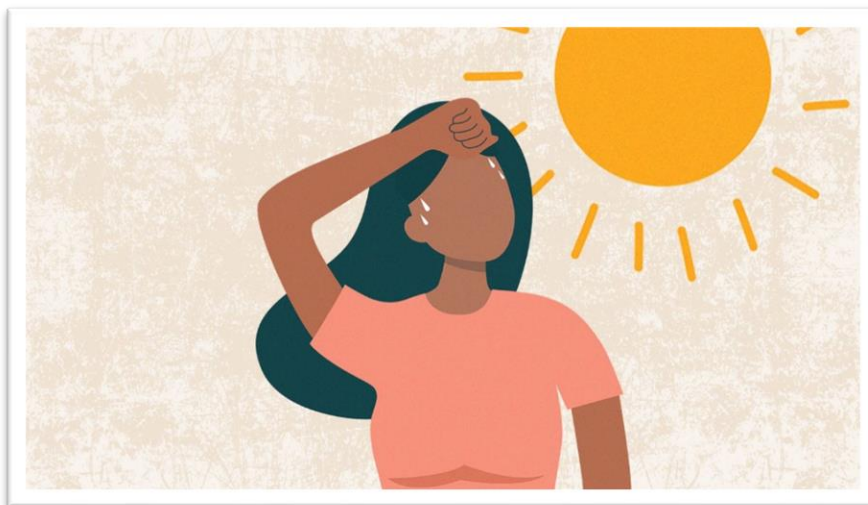
## INTRODUCTION

### *Overview*

Dehydration occurs when not drinking enough fluids or losing more fluids than the fluids you take in. Low levels of dehydration might cause headache, lethargy, and constipation.

### *Key Facts*

- ❖ The 75% of the human body is water.
- ❖ Early signs of dehydration include dry mouth, lethargy, and dizziness.
- ❖ Hydration is vital as it regulates the body temperature, lubricates the joints, prevents infections, transfers nutrients to cells, and helps organs functioning properly.
- ❖ Adequate hydration improves sleep, cognition, and mood,
- ❖ People with diabetes are at high risk for dehydration since diabetes is characterized by frequent urination.
- ❖ Despite the limited research on seafarers and dehydration, dehydration seems to be common while on board.
- ❖ Physically demanding job, hot environments, and inconvenient toilet brakes are all factors that might put seafarers at risk of dehydration.



## SIGNS & SYMPTOMS

### *Early Symptoms*

- Thirst
- Darker urine colour
- Decreased urine production

### *Moderate Dehydration Symptoms*

- Dry mouth
- Lethargy
- Muscles weakness
- Headache
- Dizziness

### *Severe Dehydration*

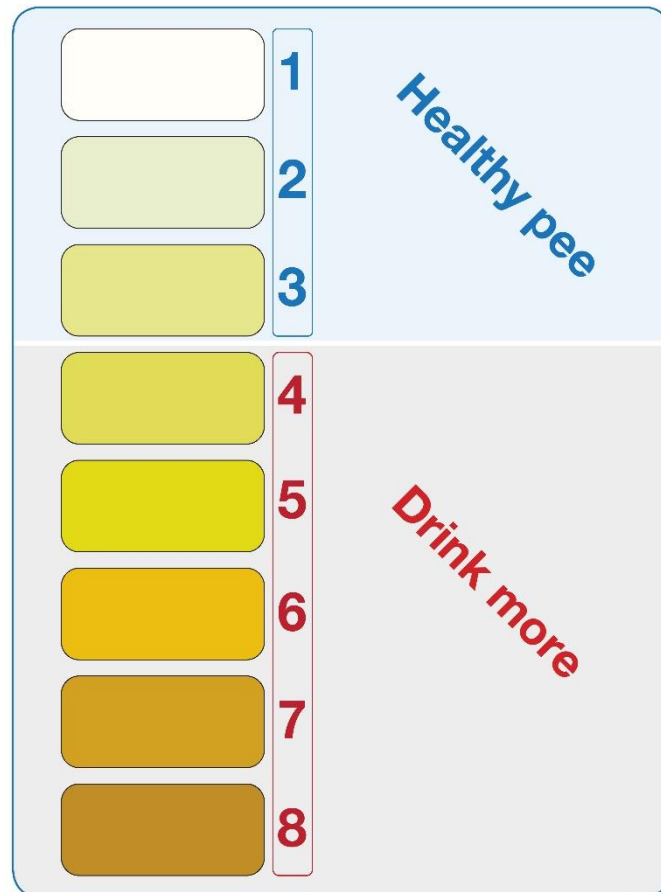
- Severe above symptoms
- Lack of sweating
- Sunken eyes
- Dry skin
- Low blood pressure
- Increased heart rate
- Fever
- Delirium
- Unconsciousness

If severe dehydration left untreated it might cause Urinary Tract Infection (UTI) symptoms, such as E. coli bloodstream infection (i.e., sepsis), the body's extreme response to an infection which is life-threatening.

Note: Severe dehydration means there is already a 10–15% loss of the body's water.

## DEHYDRATION STATUS

Dehydration status can be determined by using the urine colour chart. This chart indicates how hydrated or dehydrated you are from your urine colour.



The darker and more odorous your urine is, the more dehydrated you are.

## DEHYDRATION AND HUMAN HEALTH

### *Causes*

The main cause of dehydration is either not taking enough water or losing a lot of water, or combination.

Other causes include:

- **Diarrhoea**  
In the occurrence of diarrhoea, water absorption from the large intestine is prevented. Hence, too much water is excreted from the body resulting in dehydration.
- **Vomiting**  
Vomiting causes water and electrolytes loss. Sodium, potassium, calcium, magnesium, bicarbonates, and chloride ions include essential electrolytes for the body's function.
- **Sweating**  
Sweating is the body's mechanism to lower its temperature by releasing water. Excessive sweating can lead to dehydration.
- **Diabetes**  
High blood sugar levels cause frequent urination and fluid loss which might lead to dehydration.
- **Frequent urination**  
Frequent urination might be a result of uncontrolled diabetes and/or medications such as diuretics or antihistamines.
- **Burns**  
Burns might lead to damage of the blood vessels which then result in fluid leakage to the nearby tissues.

## *Complications*

Dehydration leads to overall poor health.

- **Low blood volume**  
Lower blood volume could lead to lower blood pressure and lower oxygen amount reaching tissues. This condition is life-threatening.
- **Seizures**  
As dehydration causes an imbalance of electrolytes, this condition might cause seizures.
- **Kidney problems**  
Dehydration might cause kidney stones (i.e., nephrolithiasis), UTIs, and kidney failure.
- **Heat injuries**  
If exposed to very high temperatures, dehydration might lead to cramps, heat exhaustion, and heat stroke. Heat stroke is the most serious illness related to heat where body's temperature rises rapidly, sweating mechanism fails, and hence body is unable to lower its temperature resulting in stroke.
- **Constipation**  
Constipation is the condition where you are unable to pass stools regularly or completely empty your bowel. The severity of this condition differentiates from person to person, and it can be short-term or long-term, resulting in a lot of pain and discomfort.
- **Skin conditions**  
Pressure ulcers are caused by pressure on an area of the skin which results in the breakage of the skin and the underlying tissue.

## *Needs*

The National Academy of Medicine recommends an adequate intake of **2 litres (9 cups) and 3 litres (13 cups) per day** for healthy women and men, respectively.

People who are physically active or exposed to very warm climates should consume higher amounts of water.

Approximately 20% of the total daily water intake comes from water-rich foods such as lettuce or cucumber.

### **Caution if experiencing below situations - Seek urgent medical advice!**

- Extreme fever (above 39°C) for a long period of time
- Confusion
- Lethargy
- Intense headache
- Seizure
- Difficulty breathing
- Chest pains
- Fainting
- 12 hours without urine





## FOOD ITEMS THAT MIGHT BE AVAILABLE ON BOARD AND WATER CONTENT

Several food items that might be available on board contain water, and are indicated below:

Food Items	Water Content
Water	100%
Fat-free milk, cantaloupe, strawberries, watermelon, lettuce, cabbage, celery, spinach, pickles, cooked squash	90-99%
Fruit juice, yogurt, apples, grapes, oranges, carrots, cooked broccoli, pears, pineapple	80-89%
Bananas, avocados, cottage cheese, ricotta cheese, baked potato, cooked corn, shrimp	70-79%
Pasta, legumes, salmon, ice cream, chicken breast	60-69%
Ground beef, feta cheese, cooked tenderloin steak	50-59%
Pizza	40-49%
Cheddar cheese, bread	30-39%
Cake, biscuits	20-29%
Butter, margarine	10-19%
Walnuts, peanuts, crackers, cereals, peanut butter	1-9%
Oils, sugars	0%

(USDA National Nutrient Database for Standard Reference, Release 21, Altman)

\*\* If a food item is not available onboard your good vessel, you might order.

## TIPS TO INCREASE WATER CONSUMPTION

There are multiple ways to increase water intake throughout the day.

- ✓ Try to drink water frequently throughout the day, especially before and after exercise and if exposed to high temperatures.

\*Try to drink water every 10 to 15 minutes!

- ✓ Drink a glass of water immediately when you wake up.
- ✓ Prefer water with your meals.
- ✓ Check your urine colour (see page 5).
- ✓ Carry a container with water around the vessel.
- ✓ Try infused water!

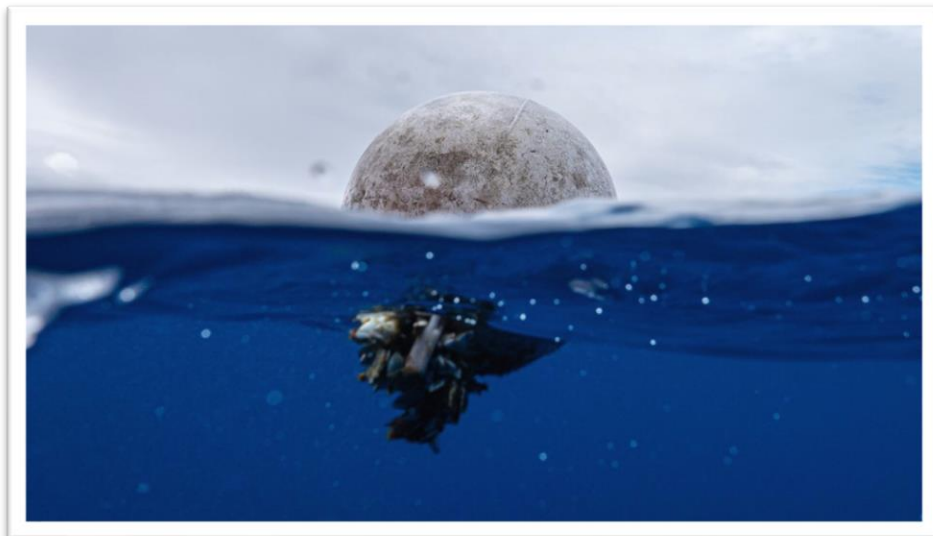
Filled your water container with:

- Sliced or zest of lemons, lime, orange, or grapefruit
  - Crushed fresh mint
  - Peeled sliced fresh ginger
  - Sliced fresh cucumber
  - Crushed berries
- ✓ Caution with certain conditions that might cause rapid fluid loss and dehydration:
    - Fever
    - Exercise
    - Diabetes
    - Vomiting/diarrhoea
    - Infections
    - Skin injuries (burns, skin disease, infections)

## ENVIRONMENTAL ASPECT

Billions of people rely on the oceans for either food or a way of life.

- ❖ Oceans are being polluted by a 'plastic smog' which is made of 171 trillion plastic particles that if assembled would weigh approximately 2.3 million tons. (Eriksen M. et al., 2023)
- ❖ Plastic that gets onto the ocean, does not decompose but breaks down into pieces (i.e., microplastics). Once it breaks down into pieces, it is hard to be cleaned up and therefore stays in the ocean.
- ❖ Plastic items take many years to be decomposed; a plastic bag takes 20 years, plastic bottles take up to 450 years, and fishing line 600 years. (Trash Travels Report)







### **Oceanic's Suggestions:**

- ✓ Ensure adequate hydration throughout the day!
- ✓ Carry a container with water around your vessel!
- ✓ Check your urine colour for assessing your hydration status!
- ✓ Put up the urine colour chart in the rest rooms of your vessel for easy access!



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