
Hydration and Heat-Related Problems in the Elderly

Hydration and Overheating

It is estimated that 60% of our body weight is from water. Most of the water (2/3) is in our cells and 1/3 both bathes our cells and is in the blood vessels. Our bodies carefully regulate our water composition. When we are dehydrated, we prioritize blood flow to vital organs like the brain, heart, and kidney and away from skin, muscle, bone, and digestion. Excess water is largely excreted in the urine by the kidneys with some being excreted by the lungs with exhalation and skin via sweating.

The biggest health problem caused by heatwaves and high ambient room temperature is dehydration. Other problems include overheating (heat stroke) and over-exposure to sun.

Dehydration

Excessive loss of water (e.g., from sweating in a hot environment) or inadequate intake can lead to dehydration. This can reduce our blood pressure (BP), impair kidney function, and cause serious health problems. The symptoms of dehydration may include:

- Mental slowing
- Dizziness
- Fatigue
- Weakness
- Muscle cramps
- Falling

Why are Elderly People at Higher Risk for Dehydration?

Seniors are at higher risk for dehydration for the following reasons:

- Reduced Thirst – For unknown reasons, seniors may not feel thirsty and drink more water when needed.
- Reduced Kidney Function – our capacity to conserve water in the kidneys diminishes with age. This is one of the reasons why people urinate more overnight and during the daytime.
- Reduced Muscle Mass- leads to a loss of a back-up reservoir for water when our stores are low.
- Reduced Skin Thickness – Together with reduced metabolism and circulation, thinner skin can lead to cold sensitivity. Older people may increase room temperature and layers of clothing, leading to overheating and water loss through sweating.
- Reduced mobility may make it difficult for people to get up and refill their glasses of water.
- Cognitive impairment may compound all these problems through impaired judgement and inadequate responses to dehydration.
- Increased prevalence of diseases and drugs that may impair our normal regulatory responses. BP pills and diuretics may cause further reduction in BP exacerbating dehydration.

Steps for Preventing Dehydration and Associated Problems During Heat Waves.

- Stay in a cool indoor environment. Check to make sure the thermostat is lowered and use a fan or air conditioning. Draw the blinds during the day and open the windows when it is cooler.
- Dress with less layers and light cotton clothing
- Avoid over exertion. Avoid exercising outdoors and over-exerting yourself to prevent worsening water loss through excess sweating and panting.
- Avoid alcohol which can further impair your kidney's ability to conserve water.
- Use a hat and umbrella, limit sun exposure and stay in the shade if you need to go outdoors.
- Use sunscreen or wear long sleeved light clothing when you go out.
- Talk to your doctor about omitting or lowering the dose of some of your BP medications during heat spells, particularly if your BP is less than 120 systolic (top number).

Hydration- Strategies to Improve Fluid Intake and Prevent Dehydration

1. Fill a 2-litre jug/thermos when you get up, to track your fluid intake. This is equivalent to 8 cups of water. Try to drink this by 4:00, **in addition** to your normal beverages with meals.
2. Many people find it difficult to drink plain water. Try adding ice and increase the flavour by adding any of the following: a herbal teabag, orange/lemon slices, watermelon, cucumber or mint leaves.
3. Set an alarm to remind yourself to drink. Try keeping a “shot glass” or small cup by your side and water pitcher. Smaller frequent volumes may be easier to drink.
4. Electrolyte and mineral replacements are generally not necessary except when there is prolonged exertion/sweating, vomiting, diarrhea or urinary losses from diuretics.

Monitor your Level of Hydration

- Check your urine output. You want to be voiding frequently. Colour of the urine is not always a sensitive test for dehydration.
- If you are not feeling well, check your BP, heart rate, temperature and even weight loss. Rapid day-to-day weight loss is usually related to inadequate fluids and dehydration.
- Increase your fluids more and consider adding salt to your food and sweetened drinks if your BP is less than 120 systolic and you feel unwell.
- Check in with family members and friends who may have cognitive impairment or frailty.
- Seek medical attention if there is confusion, problems walking, low BP, increased heart rate and increased body temperature.