**Managing Hydration in Long-Term Care**

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**Objectives**

- Understand the importance of hydration
- Evaluate risk factors of dehydration
- Examine treatment options for dehydration
- Explore strategies to prevent dehydration

**Importance of Hydration**

- Water = 60% of body weight in average adult
- Total body water = around 600 ml/kg
  - 155 pound person = 70kg
  - 42,000 ml water
  - 175 cups
  - 10.94 gallons

*That's a lot of liquid!*

**Dehydration**

- A complex condition resulting in a loss of total body water with or without salt at a rate greater than the body can replace it.
- Dehydration is one form of fluid/electrolyte imbalance. A fluid/electrolyte imbalance is defined as an insufficiency or excess of either water or electrolytes (sodium and potassium) in certain body areas.

**Dehydration**

- More simply, dehydration is a fluid imbalance caused by too little fluid taken in or too much lost, or both.

- How does this happen in long-term care?
What Puts People at Risk for Dehydration?

- Fasting before tests and procedures
- Acute illness leading to vomiting and diarrhea
- No access to fluids throughout the day
- No desire to consume fluids
- Distaste of thickened liquids
- Decreased awareness of thirst
- Dietary restrictions
- Fear of incontinence

Risk Factors Associated with Dehydration

- Constipation
- Falls
- Medication toxicity
- Urinary-tract infections
- Respiratory infections
- Delirium
- Renal failure/decreased kidney function
- Electrolyte imbalance
- Seizures
- Hyperthermia
- Longer time for wound healing
- Increased mortality rates in hospitalized older adults

Assessment

- Signs and symptoms
  - Not reliably or consistently diagnostic
  - Weight loss
  - Hypotension
  - Tachycardia
  - Volume overload (edema, rales)
  - Elevated body temperature
  - Postural dizziness
  - Orthostatic hypotension
  - Educate staff of proper measurement technique

- Intake and output
  - Not reliable due to documentation accuracy
- Change in urine
  - Not always reliable
    - Odor
    - Color
    - Amount
    - Urine specific gravity

Staff should watch for:

- Dry mouth, flushed skin, fatigue, headache
- Increased temp, breathing, and pulse rate
- Dizziness, weakness, and impaired breathing with activity
- Dark colored urine (apple juice)
What is a reliable diagnostic method?

- Laboratory testing is the gold standard for diagnosing and managing dehydration

Prevention Strategies

- Assess swallowing ability
  - Offer straws and cups that make drinking easier
- Manage urinary incontinence so that resident is less likely to refuse drinking to prevent incontinence

Prevention Strategies

- Communicate clinical changes effectively
  - Acute illnesses
- Promptly report changes in fluid intake and signs and symptoms of dehydration
  - Stop and Watch
  - Stand up meetings

Prevention Strategies

- Educate staff and families
  - Encourage families involvement in increasing fluid intake
    - Offer beverages of choice
    - Use beverage carts
    - Use frozen juice bars

Prevention Strategies

- Give verbal and physical prompts to drink fluids
  - The effects of systematic oral prompts to drink fluids and of offering a choice of beverages was tested in a three-phase study of 63 incontinent LTC residents

Three phase test

- Phase 1
  - 16 weeks
  - Residents prompted to drink fluids once every 2 hours four times a day during incontinence and mobility care sessions
Three phase test

- Phase 2
  - 8 weeks
  - Participants prompted twice every 2 hours (at the end of each incontinence and mobility care session) four times a day
  - Staff offered water and juice before offering coffee or tea (because of incontinence and diuretic properties)

- Phase 3
  - 8 weeks
  - 8 verbal prompts per day
  - Variety of beverages offered
    - Apple, cranberry, grape, orange, and tomato juices
    - Water
    - Milk

Results

- 80% increased average daily fluid intake
- 20% increased average daily fluid intake only when preferred beverage was offered
- 33% increased fluid intake less than 5 ounces daily
- 33% increased 5-20 ounces daily
- 25% decreased fluid intake

Practical strategies

- Increase amount of fluid offered with medications
- Include fluids in activities
- Install cup holders on wheelchairs
- Train all staff to offer fluids when entering and leaving resident rooms
- Model drinking behavior

Practical strategies

- Implement Frazier Water Protocol for those residents with dysphagia
  - Speech pathologist evaluation
  - Requires excellent oral hygiene

Water in Common Foods and Drinks

<table>
<thead>
<tr>
<th>Food item</th>
<th>Estimated water content</th>
</tr>
</thead>
<tbody>
<tr>
<td>Milk</td>
<td>90%</td>
</tr>
<tr>
<td>Yogurt</td>
<td>87%</td>
</tr>
<tr>
<td>Soup (broth based)</td>
<td>90%</td>
</tr>
<tr>
<td>Orange juice</td>
<td>88%</td>
</tr>
<tr>
<td>Tomato</td>
<td>95%</td>
</tr>
<tr>
<td>Cucumber</td>
<td>97%</td>
</tr>
<tr>
<td>Apple</td>
<td>86%</td>
</tr>
<tr>
<td>Cantaloupe</td>
<td>49%</td>
</tr>
<tr>
<td>Decaffeinated tea or coffee</td>
<td>90%</td>
</tr>
</tbody>
</table>

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Questions

- What ideas can you share that have worked in your home?

References

- Mentes, Janet. Oral Hydration in Older Adults: Greater awareness is needed in preventing, recognizing, and treating dehydration. AJN, American Journal of Nursing 2006;106(6):40-49.
What Is Free Water Protocol?

For Providers

The free water protocol allows patients who are NPO or on thickened liquids to have ice chips/water between meals when following specific guidelines. The free water protocol is not appropriate for all patients. A speech language pathologist will determine if a patient is a good candidate for the protocol and will help implement the guidelines.

Research on the water protocol tells us:

- Good oral hygiene is a key ingredient of the water protocol.

- Aspiration of water poses little risk to the patient if the oral bacteria associated with aspiration pneumonia are minimized.

- Water that enters the lungs may be reabsorbed into the bloodstream.

- Allowing a patient free water
  - decreases the risk of dehydration.
  - increases patient compliance with swallowing precautions.
  - improves patient quality of life.

Guidelines

- Patient is allowed to drink water between meals and 30 minutes after meals.
- Oral care must be done prior to consuming water.
- Patient should sit upright and use appropriate swallowing strategies.

What are the risks of aspiration?

- Aspiration during water-drinking trials was a benign event in most cases (Feinberg, 1990).

- The risk of developing aspiration pneumonia is significantly greater if thick liquids or solid foods are aspirated (Holas, DePippo, and Reding, 1994).

- Patients who aspirated thin liquids did not have a significantly different incidence of aspiration pneumonia than those who did not aspirate (Feinberg, et al, 1996).

- Delayed swallow initiation and excess residue generally occur more often with pureed food than with liquids.

continued
Several factors predict the development of aspiration pneumonia:
- Dependence for feeding
- Dependence for oral care
- Decayed teeth
- Tube feeding
- Reduced activity level
- GERD.

Evidence Base

Garon, Engle, & Ormiston (1997) showed no difference in aspiration rate between those patients receiving thickened liquids and those on the free water protocol.

A chart review was carried out at Frazier rehab over 18 months: 234 patients received thickened liquids on free water protocol. Two of 234 developed aspiration pneumonia; both were suspected of aspirating solid food.

Water/Hydration

Getting started
1. Review the lesson plan before each session.
2. Copy all of the handouts:
   a. Water: Signs of Dehydration and Tips for Adding Water to Your Daily Routine
   b. Water in Common Foods and Drinks
   c. Water Questions
3. Supplies for activities.

Supplies Needed
1. Handouts.
2. Items for activity - one clear 8-ounce glass of lemonade, one clear 8-ounce glass of apple juice, one clear 8-ounce glass of water, one clear 8-ounce water bottle and 1 pitcher of water.
3. Paper cups for water sampling.

Beginning the Session
1. Introduce yourself by name and the organization you represent.
2. Summarize the lesson by going over the objectives. Let the group know that the session will be informal and that questions can be asked at any time.

Objectives – The participants will:
1. Understand the role water has in the body.
2. Understand the importance of getting enough water each day.
3. Recognize the risks and signs of dehydration.
4. Identify foods with high water content.
5. Identify practical ways to add water to their daily routine.
Script

Introduction
How many of you drank a glass of water today? *Wait for a show of hands.* Great – it looks like many of you are trying to drink plenty of water. Did you know that on average, over half of your body weight is water? Water plays a very important role in helping your body to work at its best, but not drinking enough water is a very common problem for older adults. Can you think of any reasons that keep you from drinking as much water as you should? *Have participants name some personal barriers to drinking water through the day.* Today we are going to talk about ways you can overcome some of these barriers to get plenty of water everyday. We’ll also find out why it’s so important that your body get enough water.

Role of Water
What are some important jobs water has in your body? Is its primary role to satisfy your thirst? That is important, but it’s not water’s most important job. Water is the most important nutrient to help keep your body’s cells, tissues, and organs running smoothly. Some of the ways water keeps your body working are by helping it to keep a constant internal temperature, preventing constipation, cushioning your joints, and protecting your body organs. Fluids are also important when you are sick and may be losing more water, such as when you have a fever, diarrhea, or are vomiting.

Getting Enough Water
Your body needs a continuous supply of water. If you always wait until your mouth is dry to drink some water, then you may be waiting too long. That’s why we should try to drink water throughout the day, even if we aren’t thirsty. If you do feel thirsty, you should drink until your thirst is satisfied. Do you know how much water we should try to drink everyday? *Wait for responses.* That’s right – at least eight 8-ounce glasses (2 quarts) of fluid everyday is a good rule to go by. *Show participants an example of an 8-ounce glass of water and an 8-ounce water bottle.* After our lesson today, it may be helpful to find some 8-ounce glasses or cups at home, and start using those to make sure you’re getting at least 64-ounces (2 quarts) of fluid a day.

Keep in mind, however, that water needs can vary widely among individuals, depending on how active you are and the climate that you live in. If you do any kind of physical activity, or if you are outside in the heat or cold for a long time during the day, your body may need even more water. In the summertime when it’s hot and often humid outside, your body will sweat more to keep your body temperature within a normal range. In the winter, having enough water helps to keep your body insulated.

It’s also important to remember that older adults are at greater risk for becoming dehydrated. With increasing age, older people may not be able to sense thirst as well as younger people, and the kidneys can become less efficient at conserving water. Some of the signs of dehydration are...
listed on the first handout with the box titled “Signs of Dehydration.” Review the signs of dehydration with participants. Remember that thirst is often a slow, weak signal to get more fluids. Your body may also become dehydrated before you know it in hot or cold weather. That’s why we should try to drink plenty of fluids throughout the day. What are some ways that we can know we’re getting enough water?

- One way is by checking the color of your urine. Hold up the glass of apple juice. Darker urine that’s a deep yellow or the color of apple juice may mean that you’re not getting enough water. Hold up the glass of lemonade. It’s better for it to be a light lemonade color. Be aware, though, that some vitamin supplements or medications can darken your urine even if you are hydrated.
- Another way to tell whether you are getting enough water is by paying attention to how often you need to go to the bathroom or how much urine you make. If you only have small amounts of urine, this could be a signal to get more fluids.

Try to make it a habit to drink at least eight 8-ounce glasses of fluid a day, and more if the situation calls for it, so you’ll know that you are helping your body to work at its best!

What should I drink?
Refer participants to the handout titled “Water in Common Foods and Drinks.” We’ve talked about how important water is to your body’s functioning, and it’s important to remember that water comes packaged in many different forms. For example, did you know that when you drink a glass of milk or a serving of juice, you’re actually drinking about 90% water? Some other foods that have high water content are fruits, vegetables, yogurt, and soups. Enjoying these foods regularly can contribute to your water intake, and provide you with many vitamins and minerals your body needs.

Fear of an accident
Many older adults may be hesitant to drink more water because they fear having an accident or needing to go to the bathroom more often. As you can see from what we have talked about today, drinking less water is not the best solution; so let’s talk about some suggestions for how you can prevent accidents.

- Try to drink more fluids when you’re at home or close to a restroom, so that you can go often if you need to.
- It’s also a good idea to take bathroom breaks when you have the chance to, even if the urge isn’t strong at that time.
- Choosing a time a few hours before you go to bed to drink less water may help you avoid an accident, too. Take a look at your daily routine to see what is best for you without cheating your body out of the water it needs. Also, follow the instructions of your doctor for specific fluid needs or medications that affect your fluid needs or frequency of urination.
We’ve learned today how important water is and what we can do to help prevent accidents, so now let’s talk about some easy ways that we can increase our fluid intake.  

Lead a group discussion by having participants refer to the handout with the “Tips for Adding Water to your Daily Routine” box. Have participants discuss additional ways that they’ve added water to their daily routine.

Now let's finish up with a few questions. Have participants refer to the handout titled “Water Questions.” Review the questions as a group.

Resources


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Water

Signs of Dehydration

- Dry mouth, flushed skin, fatigue and headache.
- Increased body temperature, breathing and pulse rate.
- Dizziness, weakness and impaired breathing with activity.
- Dark colored urine (the color of apple juice).

Tips for Adding Water to Your Daily Routine

- Have a glass of tea, milk, or juice with your meals.
- Drink a glass of water at regular times during the day, such as when you take your medicine.
- Place a glass of water beside your favorite chair for a “water break.”
- Take a sip of water as you pass a water fountain!
- Choose a cup of yogurt or a piece of fruit for an afternoon snack.
- Drink water before and after being outside on a hot or cold day.
- Add a lime or lemon to a tall glass of ice water for a flavor twist.
# Water in Common Foods and Drinks

**Food item**.................................**estimated water content**

- Milk...........................................................90%
- Yogurt..............................................................87%
- Soup (broth based).................................90%
- Juice (orange)........................................88%
- Tomato..............................................................95%
- Cucumber..............................................................97%
- Apple..............................................................86%
- Cantaloupe..............................................................90%
- Decaffeinated tea or coffee..............................99%

*Source: USDA National Nutrient Database for Standard Reference, Release 19*
Water Questions

Please circle your answers.

1. How many glasses of fluid are needed each day?
   1   2   3   4   5   6   7   8   9

2. I drink this many glasses of fluid each day:
   1   2   3   4   5   6   7   8   9

3. I will increase my fluids by eating or drinking more:
   Water   Vegetables   Milk   Juice
   Fruit   Other

4. When your urine is dark yellow it could mean that your body is dehydrated:
   No   Yes