One Piece of a Wellness Puzzle - Hydration

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In order to live well and prosper, human beings require hydration, fluid intake. Seventy-five percent of a baby's body weight is water, while it makes up only 55% of the body weight of an older adult. It is interesting, however that there is actually very little concrete data available on how much and what types of fluid are the best to maintain optimal hydration as aging takes place, chronic conditions take hold, or dementia happens. We do have evidence that water is essential for cellular health as well as human life itself, however, we know less than we would think about how and why it matters so much.

Common outcomes of **de**hydration (not enough water available internally) include:

- Postural hypotension (inadequate blood pressure to the brain when standing up – increased risk of falls) – blood pressure drops when moving from lying to sitting to standing
- Increased sense of fatigue – the primitive brain is trying to conserve energy and fluids by going into sleep state
- Increased irritability and global distress – the primitive brain is becoming concerned about survival, however, cannot determine how to fix it
- Increased constipation and impaction – taking the fluid out of bowel product to keep the organism alive
- Risk of kidney damage and failure – when urine becomes too concentrated the kidneys begin to shut down and malfunction
- Limited arousal and alertness resulting in decreased socialization, intake, mobility – when people are less alert, it turns out that they consume and drink less, and they are actually offered food and drink less often
- Diminished cognitive abilities – more confusion and disorientation to place, time, situation, and people – this can result in more refusals and less willingness to relax enough to eat or drink
- Increased risk for skin irritation and pressure sores– between drowsiness and more concentrated urine, the skin and layers under it are at increasing risk of necrosis and tissue death
- increased risk of an acute delirium – lack of adequate fluid in the system triggers acute confusion, including delusional thinking and hallucinations

Observable symptoms of dehydration, include:

- dryness around the lips and in the mouth
- sunken eyes
- skin that tents or has decreased elasticity
- concentrated urine – strong odor of urine, bright or dark color of urine
- less urination overall – less output and fewer episodes
- drowsiness
- worsening confusion and distress
- dizziness – when sitting or standing
- lower blood pressure
- new onset drop in blood pressure when moving from supine-sit-stand
- new onset or worsening of constipation episodes

Current recommendations are that older adults should consume 1 ½ to 2 quarts (>1600mL) of fluids a day to maintain adequate hydration according to multiple governmental sources in both the US and UK. Apparently, in the US we get about 20% of our fluid intake in food items, while the percent is higher in European countries.

What is less clear is whether or not the source of the fluid and method of delivery makes a difference in health or wellness. For example, is it better to get fluids in fruits and vegetables or as free water? Is there a difference in health value of the fluid is taken in smaller amounts more frequently or in large quantities less often? Several authorities [1, 2] indicate that we do not have adequate or very accurate ways in which to measure adequacy of hydration. The use of urine concentration is viewed as a mediocre measure, but the only one we currently have.

It turns out that maintenance of hydration is typically regulated by complicated connections and relationships among various brain centers, neurohormones, and end organs (kidneys/salivary glands/sweat glands). Additionally, humans drink fluids for PLEASURE as much or more than for survival-thirst reason, making study of thirst more complicated. Overall, however, it appears that as age increases the sense of thirst decreases. Adding in cognitive changes that happen when someone develops dementia is a high risk situation for most. One exception is found with some forms of frontal variant FTD. In this situation the drive to drink fluids becomes almost insatiable. The person must have fluids restricted or hyponatremia (inability to maintain the right sodium balance for cells) can result in severe acute illness or death.

What can help?
Offer the person what they like, when they like it, as they like it, where they like it, how they like it. In other words, limit the effort and challenge of getting fluids into the system. If the fluid contains a large amount of sugar (soda, juice, sweet tea, or sugared coffee) or caffeine (some sodas, coffee, some teas), it is important to note that those elements do negatively impact the retention of fluid in the venous system. If the fluid contains a high percent of sodium (salt) then fluid is retained in an unhealthy way and can affect BP, swelling in the tissues (especially in legs and feet) and the heart and lungs ability to work well.

Coloring and flavoring water, or adding water or carbonated water to juices to increase free water can result in significantly improved intake during a day for some people. Social drinking rather than drinking due to thirst is typically much more successful.
Consider carefully whether the person prefers cool or cold drinks rather than hot ones or vice versa. Provide what is preferred, even if it seems odd to heat or cool that type of beverage.

Consider the use of de-caffeinated beverages to increase fluid preservation.

It is also very useful to consider less traditional ways of getting hydration on board. I have provided a list of high fluid fruits and vegetables to consider. I have them in two tables. One for fruits and one for vegetables. Each table addresses both people who are still able to chew easily and well, and a second set of ideas for those who need less of an eating or chewing challenge.

As the condition progresses, as we notice the person is experiencing difficulty in swallowing or in managing any form or fluids, we may want to offer non-liquid items that are high in fluids, such a gelatin or smoothies. If the person is entering the final phases of the condition, then offering tastes and sips rather than attempting hydration may become our focus.

Finally, remember to look in the mirror and take stock of yourself. How well hydrated are you? Are you shorting yourself on fluids. Should you take a closer look at what you are drinking and how much? Care partners all too often forget to consider their own hydration. Just a hint, you are aging too!

Hydration Problematic

- Lack of thirst
- Lack of skill to fix
- Lack of awareness
- Limited opportunity
- Medications
- Fear of incontinence
- Types of drinks

How to Help with Hydration

- Cut fruit juices with ice or water
- Offer decaf coffee & teas
- Serve flavored & colored water
- Know your fruits & vegetables
- Offer soups & gelatins & frozen treats
- Be creative

Fruits

High Fluid – easy to eat

- Watermelon slices
- Applesauce
- Melon bites
- Tomato cubes
- Mandarin oranges
- Kiwi chunks
- Halved grapes
- Sliced strawberries
- Sliced peaches

High fluid – harder to eat

- Apples
- Blueberries & cranberries
- Pineapple
- Oranges
- Apricots
- Peaches & plums
- Whole grapes
- Grapefruit

Vegetables

High fluid – easy to chew

- Vegetable soup
- Stewed vegetables
- Vegetable juices
- Well steamed broccoli, cauliflower, onions
- Cooked spinach
- Vegetable casserole
- Baked/boiled yams sweet potatoes

High fluid - hard to chew

- Carrots
- Squash
- Cucumbers
- Broccoli & cauliflower florets
- Lettuce
- Cabbage
- Eggplant
- Spinach
- Celery & onions

Additional Resources:

Hydration and the Elderly an article from the H4HInitiative (Hydration for Health) website.

Water, Hydration and Health by Barry M. Popkin, Kristen E. D'Anci, and Irwin H. Rosenberg.

Total Water Intakes of Community-Living Middle-Old and Oldest-Old Adults by Claire A. Zizza, Kathy Jo Ellison, Catherine M. Wernette.

Changes in Hydration in the Final Days Hospice and Palliative Nurse Association Quick Information Sheet

Strategies for Ensuring Good Hydration in the Elderly by Ferry, Monique.