Are Fluids And Water The Lost Nutrient?
by Kathleen Niedert, PhD, MBA, RD, CSG, LD, LNHA

As care givers of older adults, do we truly do our due diligence in making every attempt to encourage seniors to increase their overall fluid intake? Do we understand there are different types of dehydration and that the treatments differ? The goals of this article are to review dehydration and the symptoms that can be anticipated by the healthcare professional; determine common causes of volume depletion in the older adult; define the three fluid-electrolyte-volume deficit disorders and demonstrate how the registered dietitians in conjunction with other nutrition and healthcare professionals’ efforts may help prevent dehydration.

The importance of maintaining fluid homeostasis for older adults living in all types of senior housing from retirement communities to nursing facility is well known. In some older adults, as little as 500 cc of fluid can make the difference between fluid deficit and fluid overload. (1) Because of all the negative outcomes associated with dehydration, health care professionals must carefully assess hydration status, estimate fluid needs and ensure that the older adult gets adequate and appropriate fluids.

Dehydration occurs when the body loses more water than is taken in or replaced. (1) It is often accompanied by disturbances in the body’s mineral salt or electrolyte balance, especially disturbances in the concentrations of sodium and potassium. Under typical circumstances the body loses about 2.5 liters of water every day from insensible losses from perspiration, pulmonary evaporative losses, stool and urine. (2) If water is lost from the bloodstream, the body can compensate somewhat by shifting water from cells into the blood vessels, but this is a very short-term solution. If the lost water is not replenished, the body may suffer serious consequences.

Volume depletion is a reduction in extracellular fluid volume that occurs when salt and fluid losses exceed intake on a sustained basis. (3) It may result from renal losses (diuresis) or extra-renal losses (from the gastrointestinal tract, respiratory system, skin, fever, sepsis, or third-space sequestration). Without proper assessment and timely resuscitation, volume depletion can lead to circulatory collapse and shock.

Dehydration and volume depletion are not the same, although they can coexist in the older adult at the same time. Dehydration implies a total body water deficit, alone or in excess of sodium loss, with a subsequent increase in plasma osmolality that usually comes to clinical attention as hyponatremia. (3) Symptoms of pure water loss arise from the effects of increased osmolality and reflect the cellular responses to hypertonicity. These symptoms can include confusion, thirst, impaired sensorium and, in more extreme cases, coma or seizures. In contrast, clinical symptoms of volume depletion are...
a result of the hemodynamic effects of the reduction in intravascular volume and usually do not involve neurological changes. (4,1)

The consequences of dehydration are many and are often exacerbated in the older adult. (5) Continued due diligence by the healthcare practitioner is not an option but is mandatory and will become even more important in this era of Accountable Care Organizations, rehospitalization rates, and the 5-star ratings and quality measures in long term care (LTC). Think about what your facility is doing and what you can do to prevent dehydration amongst your residents.

Dehydration can occur easier than any of us consider in our busy day to day work settings. Mild dehydration is common and usually caused by not drinking enough fluids throughout the day. (5) This can be from just simply not wanting to drink or an inability to drink. OR it may be related to our residents depending on others to meet their fluids needs. When staffing is inadequate, older nursing-facility residents often just do NOT get enough fluids. Additionally older adults may not consume fluids for fear of incontinence or difficulty in toileting. (6,1) The use of thickened liquids, a result of swallowing difficulties, can also place residents at risk as many refuse the texture of these beverages. (1)

GI fluid losses due to vomiting, bleeding, nasogastric and fistula draining, laxative abuse, and diarrhea increase risk of dehydration. Unless additional fluid is given, high-protein diets can cause dehydration as they increase renal solute load, which increases fluid needed for urinary excretion of solute. Urine volume must parallel renal solute load. In adults, each gram of protein theoretically contributes approximately 5.7 mOsm to renal solute load.

Older adults are very sensitive to heat-related fluid losses especially in conditions of elevated ambient temperatures or low humidity. Other causes of evaporative fluid losses that may not be well recognized include use of dry oxygen and air-fluidized beds.

Excessive urinary losses or polyuria may be caused from diuretics, glycosuria, diabetes, and chronic renal failure all leading to dehydration. A number of medical conditions and therapies interfere with fluid homeostasis including stroke, diabetes, and congestive heart failure as examples. Inflammatory diseases of the skin impact hydration. Few of us should experience residents with burns but with burns dehydration occurs as water moves into the damaged skin—the reason for blisters. Other inflammatory diseases of the skin are also associated with fluid losses as are chronic or acute fever. Fever associated with infections increase insensible losses through perspiration, respiration, and increased metabolism. Water losses increase by 100 to 150 mL/day for each degree of temperature above 98.6°F or 37 degrees C. Stated another way, fluid needs increase by about 7% per degree of fever measured in F and by 12% per degree when measured in C. (7)

Monitoring those receiving tube feedings as well as those on fluid restrictions is key to preventing dehydration. Calculations should be monitored as well as actual physical signs to ensure adequate fluid intake for these residents.

Polypharmacy has also been associated with dehydration in older adults. (8) Some medications, such as caffeine formulations, laxatives, lithium, diuretics, theophylline preparations, ACE inhibitors and other cardiovascular agents, contribute directly to the risk of dehydration. The antiseizure medication phenytoin (Dilantin) interferes with the action of vasopressin. Other classes of medications, such as tricyclic antidepressants, SSRI's, anti-diabetic medications and hypnotics (1) indirectly contribute to dehydration risk. Sedatives and ethanol use in older adults, as well as conditions that depress the level of consciousness, can interfere with adequate intake of fluids.

Resident receiving renal dialysis must be closely monitored upon returning from routine dialysis for hypotension and other signs of dehydration.

Dehydration is often classified as mild, moderate or severe by the percentage of weight loss that has occurred in a short period of time. Older adults who are mildly dehydrated have lost fluid equivalent to <5% of body weight, those considered moderately dehydrated have lost about 10% and those with severe dehydration have lost >15%. (9) Severe dehydration requires immediate medical attention as without it this severity of fluid loss can lead to death.

When systems are disturbed due to loss of fluids, there will be several common symptoms shared by most bodies but there may also be unusual or unexpected responses depending on the particular person in question. The healthcare professional must remember that symptoms of dehydration will differ from person to person because the body is a complex network of systems and everyone's body is different. At 5% total fluid loss the body may exhibit the following symptoms:

- Increased heart beat
- Increased respirations
- Decreased sweating
- Decreased urination
Greetings DHCC Members,

As I began writing this last Chair’s Message for my term, I was listening to news coverage on those affected by Hurricane Sandy, the Boston Marathon bombing, the flooding in the Midwest and the fertilizer plant explosion in Texas. These and other events have touched us all in many ways in the past year. If you were directly impacted by any of these, I hope you are now safe and home. If you are experiencing a slow recovery process, I wish you the best in getting back to normal.

When I began my role as Chair, I noted that ‘everything is a process’ and that DHCC Executive Committee (EC) is a team working toward desired outcomes. The DHCC EC is an amazing team that has worked very hard this year to bring many desired outcomes to empower members to be the food and nutrition leaders.

DHCC has had year of growth thanks to our Professional Development, Communication, Membership, Public Policy and Sponsorship Coordinators, Corrections and Home Care Sub-units, DHCC Advisor, and the addition of the Sales and Marketing Coordinator this year. The fruit of their efforts has resulted in bringing you state-of-the-art resources including in depth articles in Connections and UPDATE!, many webinars, a new Emergency publication, the updated DHCC website (www.dhccdpg.org) and more.

This Connections includes a feature article on Dehydration, and a variety of articles on Survey and Nutrition Care Process, Public Policy, Preceptor Benefits in Corrections, the Supermarket Dietitian, the Student’s Corner and more. Don’t forget to complete the CPEU questions on the DHCC website in the Continuing Ed link.

I have many to thank for such an eventful year for DHCC:

- The DHCC Executive Committee, Nominating Committee, and Marla Carlson, DHCC’s Executive Director and Susan DuPraw, MPH, RD, Manager, DPG Relations. I am honored to be part of their team.
- The DHCC members who share their expertise in daily activities, the EML, through writing and volunteering.
- The Network Representatives who have brought DHCC presence to DHCC’s Network Organizations to influence the role of the RD in extended care settings.
- The DHCC sponsors for their support enabling DHCC to be the best!

Some DHCC EC members are transitioning into newly elected positions and some are leaving the EC. Lisa Eckstein, MS, RD, LD, and Lorie Stake MS, RD, LD, will be transitioning into newly elected positions. Bonnie Gunckel, RD, CD, Communication Coordinator will be taking a position in the state of Indiana. Joanne Zacharias, MS, MS, RD, LDN, Treasurer and Krista Jablonski, MS, RD, LDN, Home Care Sub-unit Chair have completed their terms. Thank you for your service to DHCC.

As we move into the 2013-2014 year, Pat Dahlstrom, RD LD, incoming Chair, has a very exciting year planned. Watch for updates on DHCC PreFNCE and FNCE events!

Looking forward to seeing you all in Houston!
Barbara Wakeen, MA, RD, LD
Chair 2012-2013

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- Increased body temperature
- Extreme fatigue
- Muscle cramps
- Headaches
- Nausea
- Tingling of the limbs

At 10% total fluid loss the symptoms become even more critical as can be seen in by the additional symptoms:
- Muscle spasms
- Vomiting
- Racing pulse
- Shriveled skin
- Dim vision
- Painful urination
- Confusion
- Difficulty breathing
- Seizures
- Chest and abdominal pain
- Unconsciousness

Be aware that these are not the only symptoms of severe dehydration that may manifest in response to dehydration - these are simply the most common and in some older adults, there may be NO symptoms at all.

It is well documented that adults over 85 years of age have a higher prevalence of dehydration than those under 65. (1) When intravascular water is lost, the body can compensate in the short-term by shifting water from cells into the blood vessels but signs and symptoms of dehydration will occur quickly if the water is not replenished. Signs and symptoms of dehydration will occur quickly if the water is not replenished. These can include lightheadedness, becoming dizzy or hypotensive, complaining of headache or fatigue and a loss of appetite. Other symptoms can include having a decrease in weight, notable dryness of the skin and oral cavity, decreases in urine and the ability to sweat, changes in facial features, and a change in the abilities to perform activities of daily living including requiring help with drinking and meal intakes.

Age plays a part in the manifestation of symptoms. Signs of dehydration in a child will not be the same as those experienced by an active adult or by the adult living in the nursing facility. It is important to use critical thinking when examining the clinical picture of the adult residing in the nursing facility.

A loss of body water equivalent to about 1% of body weight is normally compensated within 24 hours,(6) Thirst stimulates drinking, so intake is increased. There may also be a reduction in water loss by the kidneys. If losses are greater than 1%, reductions in physical and cognitive performance may occur and there may be some impairment of thermoregulation and cardiovascular function. (6)

As nutrition professionals we must remember that the majority of total body weight is from water. Water makes up 75% of muscle mass, but only 25% of fat mass. So the higher a person's body fat percent is, the lower their water percent will be. (2) Another way to examine total body weight is to remember that water makes up approximately 60% of the male body mass and 50% of the female body mass. (2,5)

Most of the water in the body is found within the cells of the body, the intracellular space. The rest is found in the extracellular space, which consists of the blood vessels or intravascular space, and the spaces between the cells or interstitial space. Extracellular fluid travels easily between the two spaces, regulated by blood pressure and colloid osmotic pressure. Sodium (Na), the major extracellular ion, is the primary osmotic particle maintaining total body water volume and the ratio between extracellular and intracellular fluid volume. (5)

Water balance is judged by the clinical assessment of extracellular fluid volume, which is much more subjective than the measure of serum sodium concentration. (4) Laboratory evaluation is the clinical gold standard for both diagnosing dehydration and monitoring hydration. (10) If dehydration is suspected, the American Medical Directors Association (AMDA) Guidelines suggest that at a minimum Blood Urea Nitrogen (BUN), serum bicarbonate, creatinine (Cr), glucose and sodium should be obtained. (1)

Be cautious when using the BUN/Cr ratio to assess hydration since this ratio is less useful in older adults due to the high incidence of renal disease in these populations. (1) Using BUN/Cr ratio greater than 20:1 produces high prevalence rates of dehydration. BUN can be low as a result of low protein intake, celiac, cirrhosis, hemodialysis, malnutrition, syndrome of inappropriate antidiuretic hormone or liver disease and serum creatinine may be low because of muscle wasting. (1,11) When unadjusted for other contributing causes, a BUN/Cr ratio should not be used as the sole criterion for diagnosing dehydration.

Serum osmolarity should be either directly measured or calculated (1) due to its sensitivity. This measurement can rise in dehydration with as little as a 1% change in body weight. Plasma sodium and osmolarity will be significantly elevated during dehydration caused by insufficient fluid intake. (5)
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Total water requirements vary by whether one is male or female. The Dietary Reference Intake (DRI) for water includes all water contained in food, beverages and drinking water. The electrolytes in our body include sodium, potassium, chloride, calcium, phosphorus and magnesium, but sodium is the substance of most concern when replacing fluids lost through exercising. Electrolytes are needed for electro-chemical reactions within cells. A lack of electrolytes in the body can interfere with chemical reactions needed for healthy cell operation.

Dehydration may be further defined by the type of fluid/electrolyte imbalance that exists. (9) Knowing which type of imbalance is present in moderate to severe cases of dehydration can ensure that appropriate replacement fluids restore the proper balance of fluids and electrolytes to the body. (4)

Failure to match intake and loss of water and minerals, especially sodium and potassium, may lead to dehydration. Depending on the ratio of water to electrolyte loss, dehydration can be classified as isotonic, hypertonic or hypotonic. (4)

- Water and sodium have close interrelationship. Water deficit and sodium deficit are not only a problem with older adults but are certainly concomitant in surgical practice. Water deficit may be divided into three types:
  - Isotonic dehydration
  - Hypotonic dehydration
  - Hypertonic dehydration

Isotonic Dehydration

Sodium concentration in isotonic dehydration is less than 130 mEq/L. (12) It is characterized by isotonic loss of both water and solutes from the extracellular fluid, in other words, when both water and sodium are lost in equivalent amounts. This may occur through vomiting or diarrhea or through inadequate intake. (13) There is no osmotic shift of water from the intracellular space to the extracellular space. It is often seen in people taking medications such as diuretics that increase urine output. This type of dehydration is sometimes referred to as isonatremic dehydration. Gastrointestinal (GI) fluid losses, through diarrhea, vomiting, or excessive GI ostomy output, put older adults at risk for isotonic dehydration. This risk is due to the fact that loss of GI fluids results in loss of water and electrolytes.

Isotonic dehydration manifests in numerous clinical ideologies. Healthcare professionals need to monitor residents who have any of these symptoms which may include nausea, anorexia, weakness, a decreased in urine output, no longer wanting to drink, having numerous physical signs such as dry tongue, sunken eyes, dry skin with poor skin turgor. Monitoring body weight when dehydration is suspected is extremely important. Daily weights can be time consuming for any of us working in LTC but should be completed in cases where dehydration is assumed to be the culprit.

Those with isotonic dehydration are diagnosed using the resident’s history, using clinical manifestations that are identified by the healthcare professional using critical thinking and laboratory values. This might include increases in red blood cells, hemoglobin (hgb) and hematocrit (hct), normal levels of sodium and chloride, changes in urine specific gravity, specifically an increase when dealing with isotonic dehydration and lastly arterial blood gases that show acidosis. Isotonic dehydration is treated by determining and then removing the causes. Often the person is provided Isotonic saline which contains 154mmol/L Na+ and 154mmol/L Cl-. One must remember that serum is 142mmo1/L Na+ and 103mmo1/L C1-. In isotonic saline, Chloride (Cl-) concentration is 50mmo1/L higher than that in serum, therefore, if the resident is given much isotonic saline without normal renal function it can cause hyperchloremic acidosis therefore giving a balanced salt fluid is often better for treating isotonic water deficit. (12)

After correcting isotonic dehydration the resident must be monitored for hypokalemia related to excessive excretion. Fluid replenishment decreases the concentration of exiting potassium. Potassium must be given if urine excretion is more than 40 ml/hour. (12)

A summary of what happens in isotonic dehydration is in Table A. Serum sodium levels, serum osmolality and specific gravity levels are within normal ranges. Again it occurs when the body loses equal amounts of sodium and water. It is often seen with food borne illness or severe bleeding or when residents experience extreme diarrhea, or frequent vomiting and the resident will often not be thirsty. The course of correction: Provide both fluid and Na to rehydrate.

**Table A: Isotonic Dehydration**

<table>
<thead>
<tr>
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<th>Isotonic Dehydration</th>
</tr>
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<tbody>
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<td>WNL</td>
</tr>
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<td>Sodium, serum</td>
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<td>Albumin</td>
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Hypotonic Dehydration
In hypotonic dehydration more sodium than water is lost. (13) This can happen in some instances of high sweat or gastrointestinal water losses or when water and electrolyte deficits are treated with water replacement only. It is characterized by an osmotic shift of fluid from the extracellular area to the intracellular. (12) It also occurs with excessive intakes of plain water or other liquids with little or no sodium content. This complication can be life-threatening if swelling causes pressure on the brain known as cerebral edema.

Repeated vomiting and gastrointestinal suction over a long period causes continual loss of gastrointestinal juice and possible hypotonic dehydration. This type of dehydration can also be caused when there is a large wound area such as in burns or multiple pressure areas with exudates. In older adults, hypotonic dehydration can occur when diuretics are used especially, if used in conjunction with low sodium diets and or in those with kidney disease. It can also occur when excessive amounts of water are used as replacement fluids. Although rare, it can also occur due to drinking too much water, which excessively dilutes the level of sodium in the body and may cause the body’s cells to swell which is known as dilutional hyponatremia. (14)

Hypotonic dehydration manifests in numerous clinical ideologies just as isotonic dehydration did. As before, healthcare professionals need to monitor residents who have any of these symptoms including diminished thirst, GI disturbances, diminished vision, weakness, rapid pulse and orthostatic hypotension. In hypotonic dehydration the blood volume falls and there is subsequent decreased renal filtration. Because of this, metabolic product retention increases causing muscle spasm and changes in overall reflexes. In severe hypotonic dehydration coma may occur. (12)

Hypotonic dehydration is also known as water and electrolyte deficit, hyponatremic dehydration or volume and electrolyte depletion. Because of this, sodium deficit levels are also divided into mild, moderate, and severe each with its own signs, symptoms, and definitions.

In mild sodium deficit, the older adult demonstrates an increase in fatigue and may complain of numbness in their extremities. Sodium in the urine falls, and sodium blood levels are less than 135mEq/L. Sodium loss is about 0.5 g/kg.

In those older adults who are diagnosed with moderate sodium deficits, more clinical manifestations may be occurring. Certainly there are more significant side effects of this type of dehydration as conditions deteriorate. Nausea and vomiting are more prominently seen and pulse and blood pressures often are abnormal. In this group of residents they begin to complain of vision problems, may have fainting episodes related to orthostatic hypertension, there is a decrease in urine outputs with no sodium or chloride in the urine and serum blood levels of sodium are decreased even more to 130 mEq/L with 0.5-0.75 g/kg of sodium lost.

Severe sodium deficit in hypotonic dehydration produces symptoms ranging from mild non-specific complaints, such as malaise and apathy to marked central nervous system impairment. In these cases serum sodium is less than 120 mEq/L with sodium losses estimated at 0.75 to 1.25 g/kg. (15)

Those with hypotonic dehydration are diagnosed using the resident’s history, using clinical manifestations that are identified by the healthcare professional using critical thinking, and laboratory values such as increases in red blood cells, hgb and hct, low serum sodium and increases in both non-protein nitrogen and BUN.

Hypotonic dehydration is treated by determining and then removing the causes. Providing a hypertonic saline infusion is the treatment of choice providing both sodium chloride and protein solution. (15) By using hypertonic saline infusions, the goal is to treat the sodium deficit and acidosis. If the acidosis continues after the infusion is completed then sodium bicarbonate or a balanced salt solution may be tried. Potassium needs must also be monitored with supplement provided as needed. (15)

A summary of what happens in hypotonic dehydration can be seen in Table B. Again, it occurs when the body sodium loss exceeds water loss. It would be found in residents taking diuretics, on sodium restricted diets, experiencing diarrhea or vomiting, having excessive sweating, a renal sodium wasting syndrome or a combination. Treatment includes giving water-electrolyte solutions to rehydrate.

Table B: Hypotonic dehydration

<table>
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Hypertonic Dehydration
In hypertonic dehydration water loss exceeds salt loss, that is, when more water than sodium is lost. This may occur as a result of inadequate water intake, excessive sweating, osmotic diuresis and diuretic drugs. It is characterized by an osmotic shift of water from the intracellular fluid to the extracellular fluid. This type of dehydration is more common in people not getting enough nutrients including fluids through their diet due to diuretic use, infection or fever, watery diarrhea, and excessive vomiting, and is often seen in those with a diagnosis of diabetes.

Water intake for whatever reason decreases. An example when this may occur is in the resident with throat or esophageal cancer resulting in dysphasia. In some, it may be that staff has just not provided adequate fluids and the resident is unable to obtain them independently. In others it may be the infusion of solutions without proper hydration, especially in those receiving saline solutions or enteral/parenteral feedings. And lastly it may be because of high fever, perspiration, burns or even uncontrolled diabetes.

In mild hypertonic deficit, residents may experience a water deficit of 2-4% of body weight. Thirst is associated with this type of dehydration but unfortunately may not be identified by the older adult.

Those identified with moderate hypertonic deficit often can be seen having fatigue. They have lower urine output, dry tongue, decreased elasticity of the skin, sunken eyes, and restlessness. In these cases water deficit is around 4-6% of body weight.

Finally in severe hypertonic water deficit all the symptoms identified for those with mild and moderate hypertonic water deficit are usually identified plus changes in cognitive function is identified such as mania, hallucinations, delirium and in worse case scenarios even coma. Water loss is more than 6% of body weight.

Those with hypertonic dehydration are diagnosed using the resident’s history, using clinical manifestations that are identified by the healthcare professional using critical thinking, and laboratory values such as increases in urine specific gravity, increased levels of red blood cells (RBC), Hgb, and Hct, and a serum sodium level that is more than 150 mEq/L.

Hypertonic dehydration is treated by determining and then removing the causes. Often it is a matter of using an intravenous infusion of glucose or sodium chloride replenishing fluid volume based on the sodium concentration and fluid needs.

Fluid is replenished by providing the daily requirement plus ½ of the calculated volume. Potassium supplementation should be provided when urine output is more than 40 ml/h and sodium bicarbonate would again be provided in acidosis. A summary of what happens in hypertonic dehydration is in Table C. Again it occurs when body water losses are greater than sodium losses due to reduced oral intake of foods and fluids, excessive losses from sweating or prolonged high fever and losses from diabetes.

Table C: Hypertonic Dehydration

<table>
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Preventing Dehydration
Observing the resident during a mealtime and collecting information from staff involved with daily meals is a useful and an inexpensive evaluative tool to aid in avoiding dehydration. All staff, no matter what department or at what professional level must work together to avoid dehydration. Even housekeeping can be cognizant of urine color in catheter bags when in resident rooms and encourage residents to have a drink.

How can we be proactive in promoting hydration? Easy—we can make sure that we minimize the length of time that our residents have to fast. If it’s midnight to 8 a.m. then staff need to be aware that this resident will require some type of fluid or food having a high fluid content as a late night snack. Has the consultant pharmacist worked with nursing service and the resident’s physician to discontinue or reduce dosages of medications that may increase the potential for fluid imbalances? Have nursing assistants completed oral cares which are so very important and so often neglected?

Residents must be reminded that hydration is important and that actually increasing fluid intake may in fact decrease toileting needs. Urine will not be as concentrated thus decreasing the feeling of need to use the toilet.

The amount of fluids needed is specific for each resident, and fluctuates as the resident’s condition changes—fever, wound, etc. These needs should be calculated by the registered
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dietitian whenever conditions change as part of the assessment.

Dehydration within residents is an issue of concern to those completing the Minimum Data Set (MDS), especially MDS Coordinators. The Resident Assessment Instrument (RAI) Manual (16) states that the intent of J1550: Problem Conditions is to provide an opportunity for screening in the areas of fever, vomiting, fluid deficits/dehydration, and internal bleeding. The RAI manual lists specific definitions that the dietetics professional should become familiar. The current recommendation for fluids is now 1,500 ml of fluids daily (includes water or liquids in beverages and water in foods with high fluid content, such as gelatin and soups). The recommended intake level has been changed from 2,500 ml to 1,500 ml to reflect current practice standards and includes fluids in foods. (16)

For those residents who trigger dehydration, the MDS assessment process includes the completion of Dehydration and Fluid Maintenance Care Area Assessments (CAA). Information requested in the CAA is to be used to further assess care areas triggered from the MDS 3.0 resident assessment instrument. The most recent changes to the MDS 3.0 RAI Manual v1.10 were made in May 2013, but did not include any new changes involving hydration status. Changes were however, made in April 2012 in the Dehydration and Fluid Maintenance CAA specifically within the areas of diseases and conditions that predispose the resident to limitations in maintaining normal fluid intake and the section labeled oral intake.

Although the CAA is not a required assessment form, caregivers will still need to review indicators and supporting documentation and use critical thinking to draw conclusions. This documentation of a problem concerning the hydration of the resident should include the description of the problem, causes and contributing factors and risk factors related to the care area.

And last but certainly not least the nutrition professional must examine the implications that residents who have fluid intake deficits have on the facility’s annual survey. Dehydration has been at the forefront of survey compliance for a number of years even becoming one of the sentinel events when the MDS 2.0 was initiated. Numerous F-tags can be sited for not identifying dehydration and acting on it. These tags may be sited independently or in combination when facilities have not assessed the resident appropriately or on an ongoing basis. With those states already under the QIS survey process, residents whose MDS has dehydration marked come into the survey process in Stage 2 for review, purely based on the MDS data. The care area pathway will be followed to make sure all components were done correctly—assessment, care planning and provision of care.

Water is always the best source of hydration but milk and juice are also composed mostly of water. Coffee, tea, soda or pop can contribute but should not be the major portion of fluid intake. Many fruits and vegetables such as watermelon and tomatoes are 90-100% water by weight with all other foods providing 20% of total water intake.

To encourage staff and remind them of the importance of hydration to certain residents, visual cues such as raindrops or other pictures may be used on resident bedroom doors. When using these make sure that the picture doesn’t look like tears but make sure that the picture doesn’t look like tear drops as families visiting may think there has been a death when they walk by.

Color coding napkins is used by some facilities. One example is to use a blue napkin for those requiring additional fluids at meals. Some have even used this for weight changes, using red for those needing encouragement for meal consumptions, and for residents who may have signs and symptoms of weight changes and dehydration, a checkered or green napkin has been used. This is especially easy to do when also using colored chins as residents don’t see this as being “pointed out.”

Keeping water fresh is also a great way to increase hydration but make sure that the resident is able to lift the pitcher when full. Sometimes we all forget that many of our residents are frail and suffer weakness in upper extremities.

Many residents do not want water in their pitcher so ask residents if they would drink something else if it was in that bedside pitcher. Also having fluids openly available in dens and living rooms of our facilities encourage residents, resident families and staff to offer fluids. Remember the phrase “Out of sight out of mind”, so make sure fluids are readily in sight.

Ideas for successful programs are seldom complex. They are simple, homelike actions that focus on the resident and what will work for that resident. Asking the resident for their input and choice may sound silly to many but it is surprising how many residents have not been given the opportunity to state what they would prefer. It is so easy to offer what has always been provided.

Having a strong interdisciplinary team whether in the medical model of LTC or in neighborhoods is the key to success. This group working with the family can identify changes in behaviors and develop successful interventions with positive outcomes as the end result.
In conclusion, realizing that older adults when deprived of fluids over a period of time will not rehydrate to baseline levels even when provided access to fluids as would occur in younger adults should be at the forefront of care. Effectively preventing, recognizing and managing dehydration in the older adult population, no matter the care setting can be challenging for many reasons. The diagnosis can be difficult since no reliable physical signs and symptoms of dehydration exist. Risk for dehydration can also occur as a consequence of treating another problem or symptom such as modifying fluid or diet consistency to manage dysphagia or treating hypertension or heart disease with diuretics. Disease process at end of life may also undermine attempts to maintain fluid and electrolytes. Yet we all know that when dehydration is a correctible or more importantly a preventable condition, teamwork is critical to improve quality of life for each and every one of our residents.

References