



# Nutrition and Fluids

They Go Hand in Hand

NUTRITION CONNECTION



FLUIDS ARE A SOURCE OF NUTRITION AND FOOD IS A  
SOURCE OF HYDRATION.

Most nutrition professionals will agree that proper assessment and diagnosis of nutritional status and hydration is challenging. Sometimes nutrition and hydration are addressed as separate diagnoses; however, in regards to provision of fluids, CMS responded to a comment in the Final Rule for LTC that *“fluids are a source of nutrition and food is a source of hydration.”* This support of the need to offer sufficient fluid is evident in the new regulations, as the wording now includes drinks being added to food in the F-tags and surveyor guidance.

This article will address why hydration and nutrition continue to be focus areas for the aging. Factors to consider in identification and treatment, along with some

practical applications, are offered to assist providers in reviewing current systems and programs for successful outcomes.

## CONTINUED FOCUS: INCIDENCE AND COST

It has long been recognized that dehydration is a common and costly disorder among older adults across all post-acute settings. There are many consequences of dehydration including constipation, hypotension, pneumonia, seizures, urinary tract infections, bladder cancer, kidney failure, heart disease, confusion, delirium, and development of pressure injuries. If left untreated, dehydration increases mortality risk. In 2011, more than



**Brenda Richardson, MA, RDN, LD, CD, FAND** is a lecturer, author, and consultant. She works with Dietary Consultants Inc. in business relations and development, and is president/owner of Brenda Richardson Associates, Inc.

100,000 adults aged  $\geq 65$  years were admitted to hospitals in the US with a primary diagnosis of dehydration. This resulted in an average length of stay of 3.6 days, and costs of approximately \$6 billion per year. Consequently, dehydration continues to be a key quality of care indicator.

### WHY DEHYDRATION OCCURS

Dehydration occurs when total body water (and electrolytes) is inadequate to maintain fluid balance and normal physiologic functions. Dehydration covers water-loss and also salt-loss which may have different causes, different symptoms, and different treatments. Water-loss dehydration is a nutrition-related deficiency, whereas salt-loss dehydration is usually the result of a medical condition.

So why do so many older adults have water-loss dehydration? It appears that as people age these basic feedback mechanisms that protect them against water-loss dehydration are weakened or lost. Thirst is no longer associated with raised serum osmolality in older adults, leaving them at high risk of dehydration without the normal physiologic responses.

Diabetes, renal function, dementia, and poor cognitive skills are associated with dehydration. As normal physiologic responses fade, it is likely that individuals become more dependent on routine, habit, and social interaction to ensure we drink enough to maintain hydration. Dementia and limited cognition disrupt routine and disturb social relationships so that drinking decreases without any conscious decision to reduce intake. With the forgetfulness of dementia, older adults lose awareness of when they last drank and eventually lose awareness of the need to drink. In the absence of thirst, the body does not prompt drinking when drinks are forgotten. In addition, dehydration itself can worsen cognitive function, creating a vicious cycle.

Regardless of body weight, several biological, physiological, and psychological factors contribute to increased risk for dehydration among older adults. One factor is the relative decrease in the proportion of lean soft tissue to fat mass that occurs with aging (i.e., age-related sarcopenia), which reduces total body water content. Secondly, age-related decline in kidney

function makes it more difficult to concentrate urine and conserve body water. Further complicating hydration status, reduced thirst sensation from impaired sensitivity decreases fluid consumption. Moreover, residents with cognitive impairment may be unaware of their needs and, thus, forget to drink or request beverages. In addition, residents who are incontinent may intentionally restrict their fluid intake due to fear of accidents. Others with physical disabilities may not have the manual dexterity or strength to lift or hold a cup. Staffing may be a factor as low staff to resident ratios in LTC facilities limit the assistance provided with food and beverage consumption. Finally, use of anorexigenic medications may contribute to inadequate food and beverage intake, while medications having high osmolality may increase body water losses.

Determining how much total water older adults require to prevent becoming dehydrated is difficult because no standardized criterion of hydration status or tool to assess hydration exists for this population. Two

*Continued on page 20*



**Brenda Richardson will co-present two breakout sessions** at ANFP's Annual Conference & Expo this June in Las Vegas. Visit [www.ANFPonline.org/ACE17](http://www.ANFPonline.org/ACE17) for topics, descriptions, and to register.

commonly used formulas are derived from body weight. One is based on the amount of water needed per kilogram of body weight to compensate for normal daily water losses plus losses from vomiting, diarrhea, fever, and/or hemorrhage. The other adjusted formula was established to determine water needs for adults receiving enteral nutrition support (tube feeding) and provides at least 1,500 mL/day for those weighing more than 20 kg. It has not been determined whether these formulas are appropriate for individuals who have higher body mass (i.e., those who are overweight or obese). More recently, the Institute of Medicine (IOM) Food and Nutrition Board determined that total water intake of 2,700 mL/day for women and 3,700 mL/day for men is adequate to meet the needs of the general healthy adult population.

### PRACTICAL APPLICATION

Prevention and management of dehydration will continue to be a focus for CMS and state survey agencies. Effective November 2016, The Final Rule for LTC Requirements for Participation in Medicare and Medicaid programs incorporated hydration into new regulatory language

and includes the following specific language for §483.60 Food and nutrition services:

*§483.60 Food and nutrition services. The facility must provide each resident with a nourishing, palatable, well-balanced diet that meets his or her daily nutritional and special dietary needs, taking into consideration the preferences of each resident.*

*(d) Food and drink. Each resident receives and the facility provides— (1) Food prepared by methods that conserve nutritive value, flavor, and appearance; (2) Food and drink that is palatable, attractive, and at a safe and appetizing temperature; (3) Food prepared in a form designed to meet individual needs; (4) Food that accommodates resident allergies, intolerances, and preferences; (5) Appealing options of similar nutritive value to residents who choose not to eat food that is initially served or who request a different meal choice; and (6) Drinks, including water and other liquids consistent with resident needs and preferences and sufficient to maintain resident hydration.*

Guidance to the surveyors in F-tag 364 for food

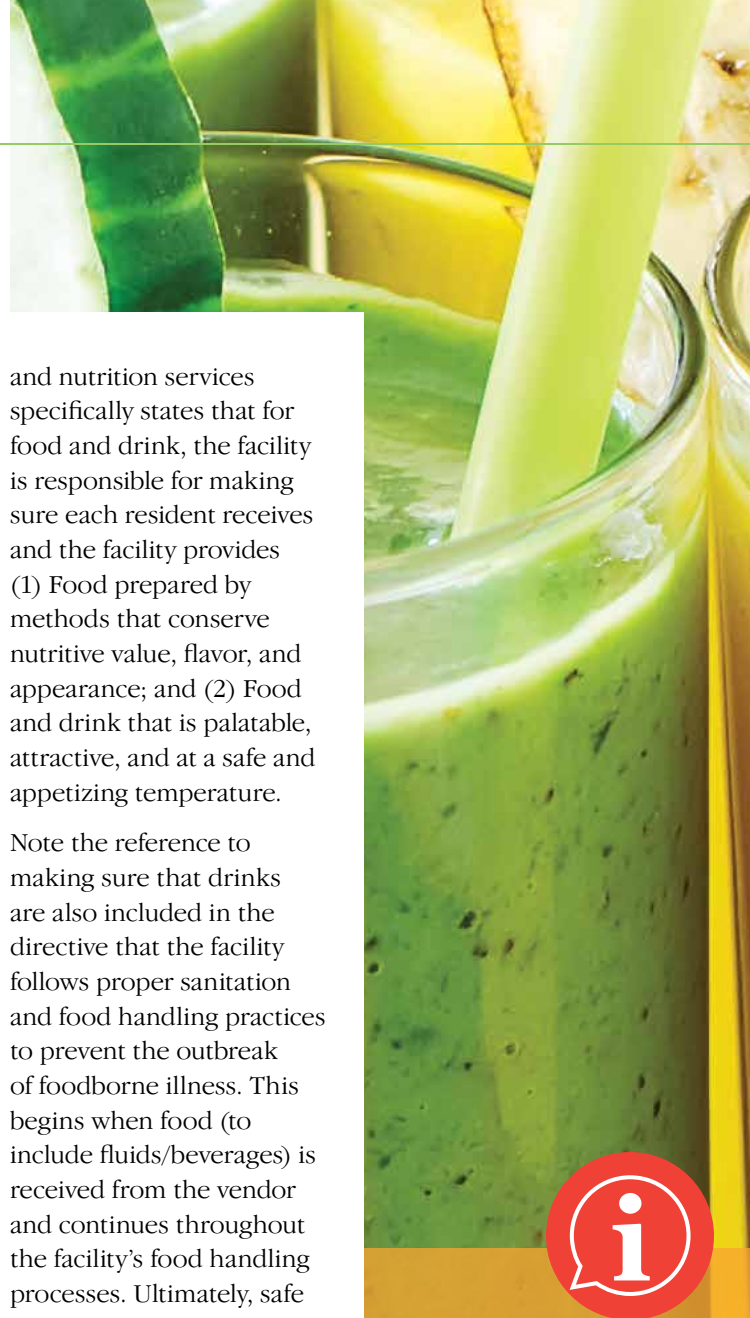
and nutrition services specifically states that for food and drink, the facility is responsible for making sure each resident receives and the facility provides (1) Food prepared by methods that conserve nutritive value, flavor, and appearance; and (2) Food and drink that is palatable, attractive, and at a safe and appetizing temperature.

Note the reference to making sure that drinks are also included in the directive that the facility follows proper sanitation and food handling practices to prevent the outbreak of foodborne illness. This begins when food (to include fluids/beverages) is received from the vendor and continues throughout the facility's food handling processes. Ultimately, safe food handling practices are carried out all the way to the actual consumption of the food and/or beverage.

So how do we prevent dehydration and support older adults to drink well?

Some suggestions include:

- Estimate the fluid needs of the individual as part of the overall nutritional assessment that includes fluid requirement calculations, biochemical assessment, anthropometry, resident history, and a physical exam.



### HAVE A VARIETY OF FLUID SOURCES AVAILABLE:

water, milk, fruit juices, fruit drinks, coffee, tea, and be sure to include food sources (especially fruits and vegetables having high water content such as watermelon or tomatoes), gelatin, and popsicles.





- Observe the resident during mealtimes and throughout the day from all facility staff to gather information about beverage preferences and intake.
- Review medications with the facility pharmacist, nursing services, and physician for any medications that may increase the potential for fluid imbalances.
- Review the oral care procedures and provide education to staff as needed for completion of proper oral care.
- Have a variety of fluid sources available: water, milk, fruit juices, fruit drinks, coffee, tea, and be sure to include foods sources (especially fruits and vegetables having high water content such as watermelon or tomatoes), gelatin, and popsicles.
- Keep water fresh and make it available and accessible to residents. Consider adding a cup holder to their wheelchair or walker.
- Assist with lifting and pouring of beverages as appropriate. Sometimes water pitchers may be a little heavy or help is needed with pouring the beverage into a glass. Does the resident prefer a straw?
- Offer beverages frequently and have fluids openly available and in plain sight in common areas. Remember “out of sight, out of mind.” Consider using a mobile cart for hydration.
- Periodically check for changes in beverage or fluid preferences.
- Promote drinking even when there is decline in cognitive function by supporting social relationships, routine, and the enjoyment of drinking.

## CONCLUSION AND RECOMMENDATIONS

Effective prevention and management of dehydration with the aging is challenging in regards to diagnosis, and may result when we are treating other problems or symptoms. There may be disease processes and end-of-life situations that create hurdles for maintaining hydration. It is important to remember that older adults are more at risk for dehydration and do not rehydrate as quickly to baseline levels as younger individuals. That being said, then proper attention to the importance of hydration—along with doing all we can to prevent dehydration—is critical to improve the overall quality of care and life for older adults. Nutrition and hydration truly do go “hand in hand.” **E**

## REFERENCES

- *The Final Rule was published in the Federal Register/Vol. 81, No. 192/Tuesday, October 4, 2016/Rules and Regulations and is available at: <https://www.gpo.gov/fdsys/pkg/FR-2016-10-04/pdf/2016-23503.pdf>*
- *Advance Copy of SOM Appendix PP: <https://www.cms.gov/Medicare/Provider-Enrollment-and-Certification/SURveyCertificationGenInfo/Policy-and-Memos-to-States-and-Regions.html> Then scroll down to - Advance Copy - Revisions to State Operations Manual (SOM), Appendix PP-Revised Regulations and Tags 17-07-NH 2016-11-09 2017*
- *Nutritional Care of the Older Adult, 3rd Ed. Kathleen Niedert, Ed., Academy of Nutrition and Dietetics, 2016.*
- *Diet and Nutrition Care Manual, Becky Dorner & Associates, Inc., 2014.*
- *Increasing fluid intake and reducing dehydration risk in older people living in long-term care: a systematic review., Bunn D, Jimoh F, Wilsher SH, J Am Med Dir Assoc. 2015 Feb;16(2):101-13.*
- *Why, Oh Why, Are So Many Older Adults Not Drinking Enough Fluid?, Hooper, Lee, Journal of the Academy of Nutrition and Dietetics, Volume 116, Issue 5, 774-778.*

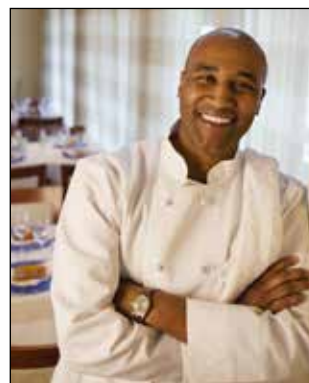
**Southeast community college**

## Dietary Manager Online Certificate

**-Earn college credit  
-SCC provides the preceptors  
-Classes meet ANFP's requirements**

**Food Service/  
Hospitality Program  
Lincoln, Nebraska**

**800-642-4075 ext. 2528  
or 402-437-2528  
[vrethmeier@southeast.edu](mailto:vrethmeier@southeast.edu)**



Association of  
Nutrition & Foodservice  
Professionals

**To view or download a current brochure:**

**[www.southeast.edu/FoodService](http://www.southeast.edu/FoodService)**

Click on the Dietary Manager Online Certificate link

## NUTRITION CONNECTION

Reading *Nutrition and Fluids: They Go Hand in Hand* and successfully completing these questions online has been approved for 1 hour of continuing education for CDM, CFPPs. CE credit is available ONLINE ONLY. To earn 1 CE hour, purchase the online CE quiz in the ANFP Marketplace. Visit [www.ANFPonline.org/market](http://www.ANFPonline.org/market), select “**Publication**,” then select “**CE article**” at left, then search the title “*Nutrition and Fluids: They Go Hand in Hand*” and purchase the article.

- In 2011, more than \_\_\_\_\_ adults aged  $\geq 65$  years were admitted to hospitals in the US with a primary diagnosis of dehydration.
  - 50,000
  - 80,000
  - 100,000
- In 2011, adults aged  $\geq 65$  years were admitted to hospitals in the US with a primary diagnosis of dehydration resulting in costs of approximately \$\_\_\_\_\_ billion per year.
  - 6
  - 8
  - 10
- \_\_\_\_\_ occurs when total body water (and electrolytes) is inadequate to maintain fluid balance and normal physiologic functions.
  - Hypoglycemia
  - Dehydration
  - Chronic kidney disease
- Determining how much total water older adults require to prevent becoming dehydrated is difficult because \_\_\_\_\_ hydration exists for this population.
  - Various metric measurement units used with
  - Physical layout of facilities for
  - No standardized criterion of hydration status or tool to assess
- Ultimately, safe food handling practices are carried out all the way to the actual consumption of the food and/or \_\_\_\_\_ item.
  - Adaptive device
  - Beverage
  - Disposal
- Estimate the fluid needs of the individual as part of the overall \_\_\_\_\_ assessment that includes fluid requirement calculations, biochemical assessment, anthropometry, resident history, and a physical exam.
  - Significant change
  - Metabolic
  - Nutritional
- In the regulation §483.60 Food and Nutrition Services, the facility must provide each resident with drinks, including water and other liquids consistent with resident needs and \_\_\_\_\_ and sufficient to maintain resident hydration.
  - Preferences
  - Difficulty in purchasing needed items
  - Glassware

## CE MONTHLY SPECIAL



**Save 20%  
in March!**

Special members-only  
pricing valid through  
March 31, 2017

### Certificate of Advanced Learning: Building on MNT Basics

ONLINE COURSE | 30 CE Hrs.

The 30-hour online course, **Certificate of Advanced Learning: Building on MNT Basics**, provides CDMs with a more in-depth foundation on the science supporting medical nutrition therapy. Participants will learn pertinent data and gain a better understanding with this 18-section course and competency exam.

ONLINE COURSE: \$200 (regularly \$250)



Order at: [www.ANFPonline.org/market](http://www.ANFPonline.org/market)