



# Low Salt Diets and Hyponatremia

Most Assisted Living Facilities for the Elderly Employ Low-Salt Diets

Long-term Low-Salt Diets Can Lead to Asymptomatic Hyponatremia

Major Dietician Associations & HHS Support Stance Against Low-Salt Diets

# The Shleser Letter - 2007

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The Editor  
Reader's Digest  
125 Stanley St.  
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Send  
to  
Dr. Shleser  
+Hannan

Feb. 18,

DR. ALDERMAN  
Dear Editor:

Please find enclosed my article on the relationship between increased hip fractures and low-salt diets. This association is frequently found in seniors' care facilities all over North America. This salt-reduced diet causes hyponatremia (low blood sodium level) often leading to other dangerous medical conditions such as confusion and decreased consciousness. The high number of falls in elderly people is an unfortunate outcome.

I believe, as a Canadian cardiologist who for 65 years has examined and treated elderly patients, that falls and subsequent fractures would dramatically decrease if seniors were given regular diets in place of the current low-salt regime.

Thank you,

Isaac Shleser  
Isaac Shleser  
MD, FRCPC(C), FACP

"I believe, as a Canadian cardiologist who for 65 years has examined and treated elderly patients, that falls and subsequent fractures would dramatically decrease if seniors were given regular diets in place of the current low-salt regime."

"After four or five months of living in the retirement residence (on a low salt diet), I gradually found that my appetite was diminished and I unknowingly become a case of chronic dehydration and hyponatremia (salt deficiency)."

"On January 23, 2003 I fell and broke my hip. After it was repaired the surgeon told me that I must use a walker.... It was six months later when I fell again, holding the walker, and broke my left shoulder." "From my practice I realized that this deterioration of my physical state was not a normal progression of old age...dehydration and hyponatremia produced all of these changes. Life is not possible without water or air, but a miserable existence can be had without salt."

"Spending your golden years in a retirement home with a low salt diet will convert your last years to a long chronic illness."

Spending your golden years in a retirement home with a low salt diet will convert your last years to a long chronic illness.

"No more and by a sleep to say we end. The heart aches and the thousand natural shocks the flesh is heir to - 'tis a consummation devoutly to be wished".

- William Shakespeare

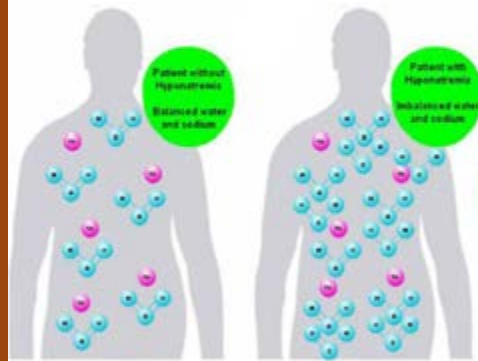
This is an autobiography. I was born on September 3, 1913 in Toronto. I moved into a retirement home in September of 1999. All of the above derangements began in September of 2000. I fell and broke my hip in January of 2003. I fell again and broke my left shoulder in May '03. My anemia appeared in February '04 and I was in the Mt. Sinai hospital and was transfused 4 units of blood. I have been using salt daily ever since I discovered its absence. There has been some return of my appetite and an improvement of somnolence and lethargy. By walking 30 minutes, three times daily with my walker, I have managed to avoid the wheelchair and being confined to a bed.

Salt is the spice of life!

All references from "The Merck Manual of Geriatric s", Third edition 2000.

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# What is Hyponatremia?



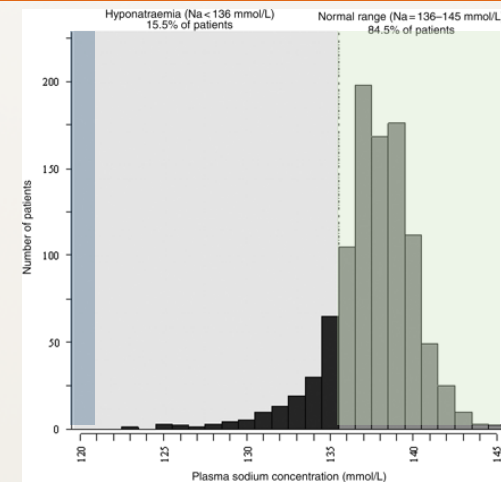
Normal plasma sodium levels: 136–145 mmol/l or 3 – 3.3 g sodium/l

Hyponatremia occurs when sodium drops below 135 mmol/l, (<3 g/l)

Mild “Asymptomatic” form occurs when Na runs between <125–135 mmol sodium/l or 2.9- 3.0 g/l

Severe Hyponatremia\* occurs when Na drops below 120 mmol/l, (<2.8 g/l)

\*A Medical Emergency



## Acute Hyponatremia and the Brain

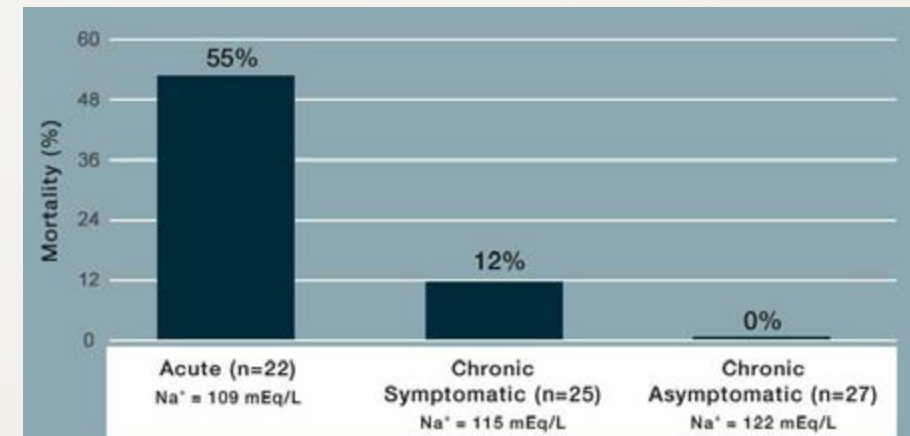
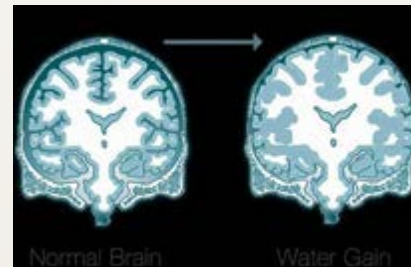
Blood-Brain Barrier Prevents Na Exchange

H<sub>2</sub>O Crosses BBB, Enters Brain Cells to Equilibrate Tonicity

Brain Swells Up Against Limiting Skull Case

Emergency Treatment Required to Shrink Brain to Normal

Neurological Damage and Death Common



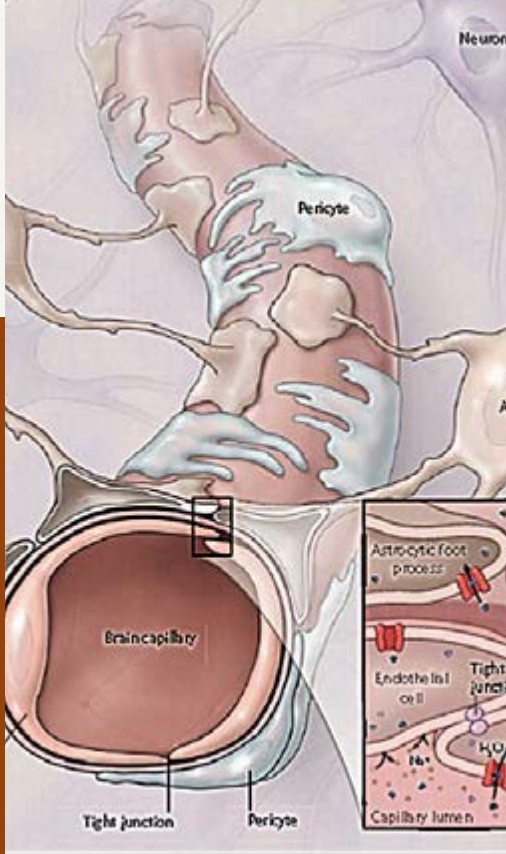




# A Form of Starvation

Asymptomatic hyponatremia is an *inevitable* accompaniment of *long periods on a low salt diet*. Although this disease may seem capricious with regard to the speed of its onset and the symptoms of its presence, *no one can avoid it who lives on a low salt diet for several months*. We store the bulk of our sodium in skin and bone tissue and that may act as a reservoir for some time, but it does not last forever. Despite what many believe, asymptomatic hyponatremia is not a disease someone catches, such as pneumonia or yellow fever or typhus. *It comes about when the essential nutrient, sodium, ceases to be supplied to the body in sufficient quantities.*

*By its very nature, it is a form of essential nutrient starvation.*



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## Is There Such a Thing as Asymptomatic Hyponatremia?

Mild or “Asymptomatic” Hyponatremia is not as Evident as Acute Hyponatremia

Osmotic Differences Represent a Continuum and Abnormally Low Plasma Na Concentration Will Always Cause H<sub>2</sub>O to Enter Brain Tissue to Attempt Osmotic Equilibration

Symptoms May be More Subtle and Take Longer to Be Evident than the Acute form, but Asymptomatic Hyponatremia is not Asymptomatic



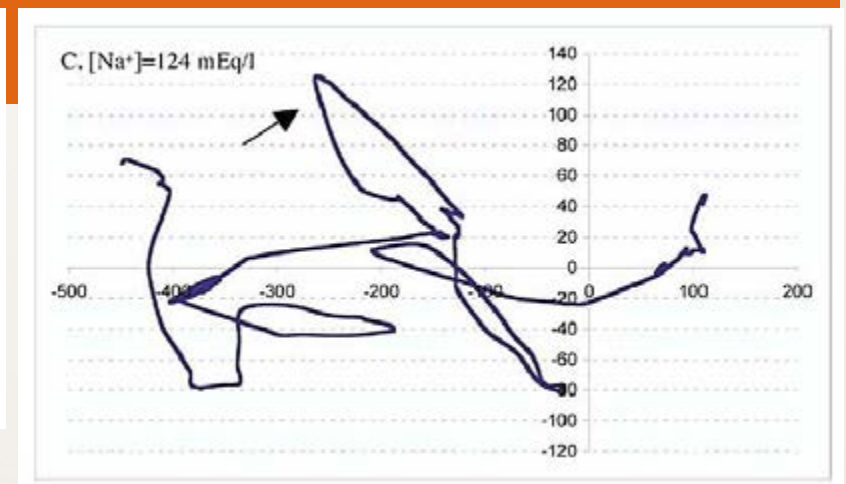
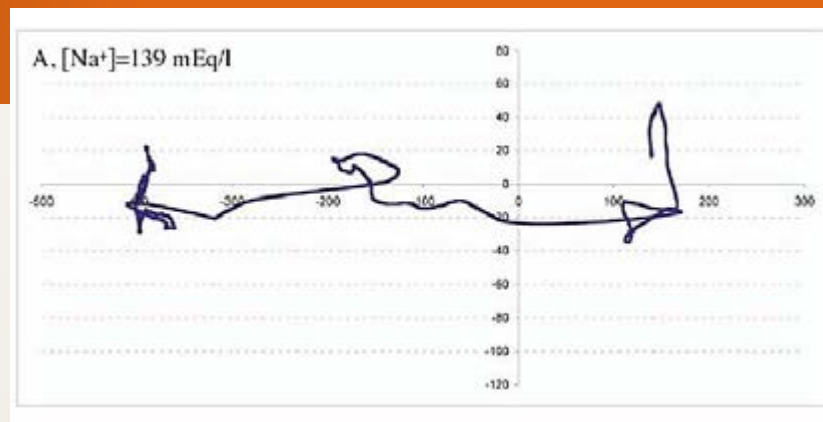
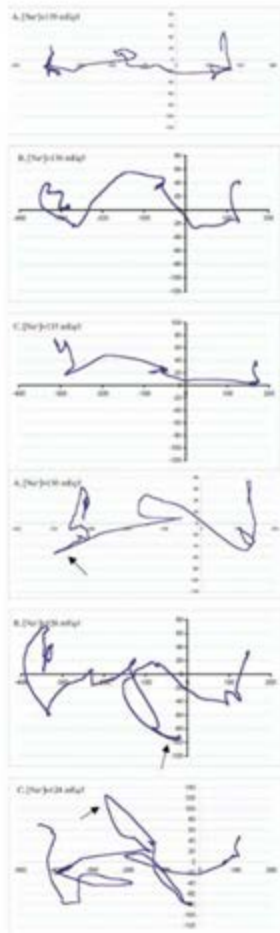
# Symptoms of Asymptomatic Hyponatremia

67-Fold Higher Risk of Hip Fractures <sup>1</sup>

Gait Disturbances and Decreased Response Time, Mimicking Effects of Alcoholic Excess <sup>1</sup>

Increased Risk of Bone Fractures in Ambulatory Elderly Patients <sup>2, 3</sup>

Osteoporosis in elderly women with borderline hyponatremia<sup>4</sup>



<sup>1</sup>Renneboog B, Musch W, Vandemergel X, Manto MU, Decaux G. Mild Chronic Hyponatremia is Associated with Falls, Unsteadiness, and Attention Deficits. Am J Med. 2006;119(1):71.e1-8.

<sup>2</sup>Gankam Kengne F, Andres C, Sattar L, Melot C, Decaux G. Mild hyponatremia and risk of fracture in the ambulatory elderly. QJM. 2008 Jul;101(7):583-8. doi: 10.1093/qjmed/hcn061. Epub 2008 May 13.

<sup>3</sup>Hoorn EJ, et al. Mild hyponatremia as a risk factor for fractures: the Rotterdam Study. J Bone Miner Res. 2011 Aug;26(8):1822-8. doi: 10.1002/jbmr.380.

<sup>4</sup>Carbone L, Johnson KC, Huang Y, Pettinger M, Thomas F, Cauley J, Crandall C, Tinker L, LeBoff MS, Wactawski-Wende J, Bethel M, Li W, Prentice R. Sodium Intake and Osteoporosis. Findings From the Women's Health Initiative. J Clin Endocrinol Metab. 2016; 101(4):1414-21. doi: 10.1210/jc.2015-4017. Epub 2016 Feb 10.





## Assisted Living/Nursing Home Stats

- More than 2 million adults over the age of 65 living in assisted living/nursing home facilities
- 50 - 75 % of elder patients suffer ~ 2.6 falls each year. This rate is more than double the rate of falls which occur for elders living in the general community
- CDC estimates >5 % of elders, 65 and older, are assisted living residents. But these patients make up > 20 percent of the deaths resulting from falls.
- >2,000 elderly patients DIE each year as a result of nursing home falls!



And much of this results from the practice of implementing a low-salt diet policy!



# New Dining Practice Standards

*Pioneer Network  
Food and Dining Clinical Standards  
Task Force*



The Hulda B. & Maurice L.  
**Rothschild**  
FOUNDATION

*A Rothschild Regulatory Task Force*

AUGUST 2011

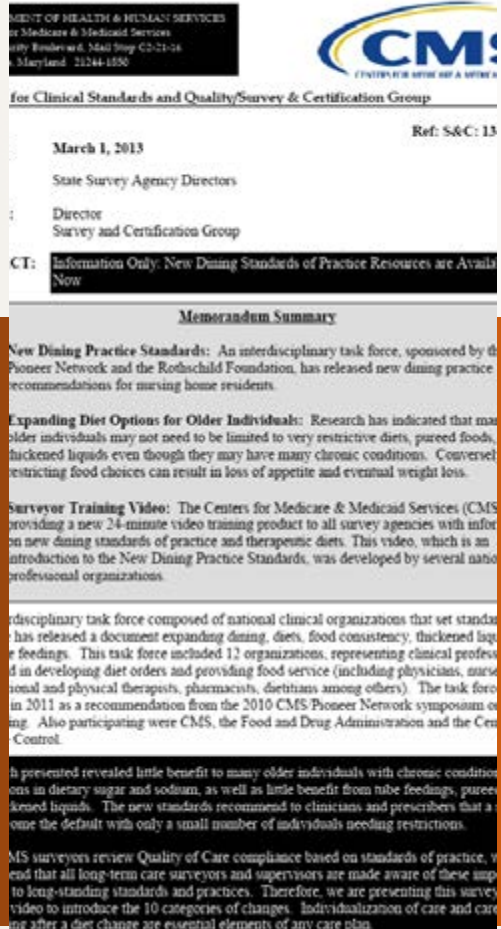
## Is there a Standard Practice for Diets in Assisted Living Facilities?

**Yes!**

One has been in place since 2011, endorsed by the following organizations:

- American Association for Long Term Care Nursing (AALTCN)
- American Association of Nurse Assessment Coordination (AANAC)
- American Dietetic Association (ADA)
- American Medical Directors Association (AMDA)
- American Occupational Therapy Association (AOTA)
- American Society of Consultant Pharmacists
- American Speech-Language-Hearing Association (ASHA)
- Dietary Managers Association (DMA)
- Gerontological Advanced Practice Nurses Association (GAPNA)
- Hartford Institute for Geriatric Nursing (HIGN)
- National Association of Directors of Nursing Administration in Long Term Care (NADONA/LTC)
- National Gerontological Nursing Association (NGNA)



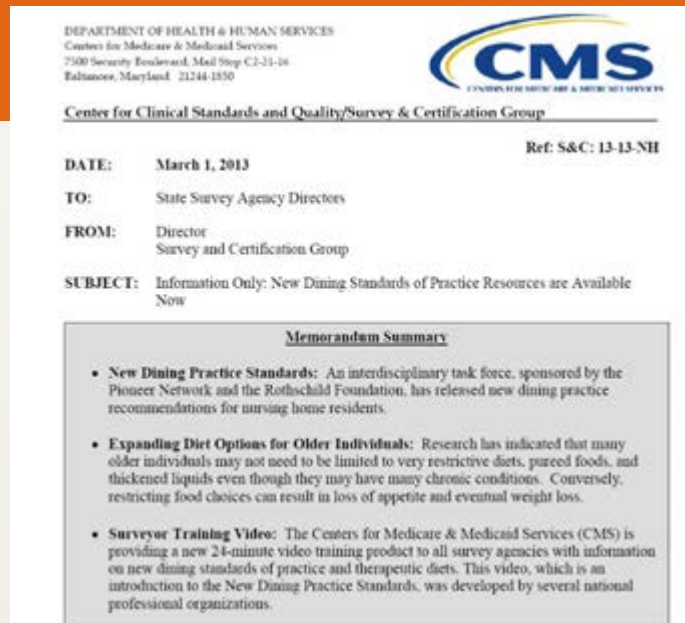


## What about Government Endorsement?

The New Dining Standards have been endorsed by the Center for Clinical Standards and Quality/Survey & Certification Group. Department of Health & Human Services, Centers for Medicare & Medicaid Services in 2013.

These Dining Standards for Nursing home/ assisted Living Facilities are now fully in place.

Low-salt diets for those that don't need them may be Medical Malpractice.





### Heart-Healthy Cooking Tips

January is American Heart Month. Here are 25 meal-preparing tips to lower your risk of heart disease or to manage your existing disease.

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## What was the main comment of the Largest Dietary Organization?

American Dietetic Association (ADA) now the Academy of Nutrition and Dietetics - largest organization of food and nutrition professionals, over 100,000 credentialed practitioners

“The relationship between congestive heart failure, blood pressure, and sodium intake in the elderly population has not been well studied. The American Heart Association recommends that older adults attempt to control blood pressure through diet and lifestyle changes and recommends a sodium intake of 2 to 3 g/day for patients with congestive heart failure. However, a randomized trial of adults aged 55 to 83 years found that a normal-sodium diet improved congestive heart failure outcomes. **A liberal approach to sodium in diets may be needed to maintain adequate nutritional status, especially in frail older adults.**”





## Where do we go from here?

The goal of a liberal approach to diet is to prevent the elderly from:  
“Spending their golden years in a retirement home with a low salt diet that will convert their last years to a long chronic illness”



# The Elderly Should Savor Life



Thank You