

Protein Malnutrition Nutritional Management in Various Patient Populations



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Presented by:
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July 24, 2014



A Historical Perspective

Malnutrition is not a new problem.

The "skeleton in the hospital closet" was brought to light in Butterworth's call for practices aimed at proper diagnosis and treatment of malnourished patients.



Butterworth C. The skeleton in the hospital closet. Nutrition Today 1974;9(2):4-6.



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What is Protein-Energy Undernutrition (PEU)?

- ➔ Formerly called Protein-Energy Malnutrition.
- ➔ Energy deficit due to chronic deficiency of all macronutrients



White J, et al. J Adam Nutr Diet 2012.



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ICD-9 Codes

Cause the resident to be coded on the MDS into at High Risk for PU Development:

ICD-9 Codes	Condition
260	Kwashiorkor
261	Nutritional marasmus (children)
262	Other severe, protein-calorie malnutrition
263.0	Malnutrition of moderate degree
263.1	Malnutrition of mild degree
263.2	Arrested development following protein-calorie malnutrition
263.8	Other protein-calorie malnutrition (specified, but not listed above 260-263.2)
263.9	Unspecified protein-calorie malnutrition Dystrophy due to malnutrition Malnutrition (calorie) NOS

This material was prepared by TMF Health Quality Institute, the Medicare Quality Improvement Organization for Texas, under contract with the Centers for Medicare & Medicaid Services (CMS), an agency of the U.S. Department of Health and Human Services. The contents presented do not necessarily reflect CMS policy. 850W-TX-PG-09-01



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Six Characteristics of PEU

1. Weight loss
2. Insufficient energy intake
3. Loss of subcutaneous fat
4. Loss of muscle mass
5. Localized or generalized fluid accumulation
6. Diminished functional status- measured by hand-grip strength



A minimum of two characteristics is recommended for diagnosis.



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Why this Information is Important



MESSAGE FROM MDS Coordinator:

"Mary- please determine if Don still has an active problem with Protein/calorie nutrition, as this is still on his active diagnosis list.

If this is to be considered, not a current active problem, please let Susie in medical records know that she can move this to his history on his diagnosis list."

Thanks,
Deb



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Values Commonly Used to Grade the Severity of Protein-Energy Undernutrition

Measurement	Normal	Mild Undernutrition	Moderate Undernutrition	Severe Undernutrition
Normal weight (%)	90-110	85-90	75-85	<75
Body mass index	19-24*	18-18.9	16-17.9	<16
Serum albumin (g/dL)	3.5-5.0	3.1-3.4	2.4-3.0	<2.4
Serum transferrin (mg/dL)	220-400	201-219	150-200	<150
Total lymphocyte count (per mm ³)	2000-3500	1501-1999	800-1500	<800
Delayed hypersensitivity index **	2	2	1	0

*In the elderly, BMI <21 may increase mortality risk.

**Delayed hypersensitivity index uses a common antigen (e.g., one derived from Candida sp or Trichophyton sp) to quantitate the amount of induration elicited by skin testing. Induration is graded: 0=<0.5 cm, 1=0.5-0.9 cm, 2>=> or equal to 1.0 cm.

Last full endorsement June 2007 by John D. Morley, MD, PhD. Content last modified June 2007. From The Marck Manual of Diagnosis and Therapy, Edition 15, edited by Robert Porter. Copyright 2007 by Marck & Co., Inc., Whitehouse Station, NJ. Available at: <http://www.marck.com/marck/bwcd/10802/080208.htm#B20HPLJ>. Accessed June 2007.



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From a Dietitian Listserv....

"We have a new administrator at one of my facilities. The corporate policy states to get an albumin & pre-albumin monthly until a wound is healed. She absolutely believes this is what is to be done to stay out trouble with the surveyors. I'm sure it could get us in more trouble, as the albumin/pre-albumin doesn't improve no matter what our interventions. I've addressed this with various personnel to no avail, so I thought I'd try with the new administrator. She actually said since labs were not in my scope of practice she wasn't included to change anything. She said the doctors were the ones for whom labs were important. Next time I'm in the facility, I'll take her a copy of Our scope of practice."

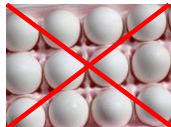


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Definition of Albumin

Not to be confused with Albumen: The white of an egg, the part of the egg from which meringues are made. 'Albus' in Latin means white.



"Albumin" is the main protein in human blood and the key to the regulation of the osmotic pressure of blood.



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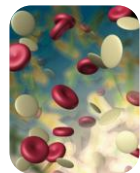


The Story of Serum Proteins

*Albumin is a serum protein with a large body pool

Key features

- Only 5% is synthesized by the liver daily
- Distributed between vascular & intestinal spaces
- 50%+ is extracellular
- Albumin pool not newly synthesized



Thus, protein intake has very little effect on the total albumin pool on a daily basis

➤ Serum proteins are affected by capillary permeability, impaired liver function, inflammation and a host of other factors

Albumin levels may be falsely high in dehydration due to decreased plasma

Recent Evidence Analysis Shows...

Serum proteins:

Albumin and Pre-albumin

➡ Do not define malnutrition

➡ Do not change in response to improved nutrient intake



ADA EAL 2009a; ADA EAL 2009b



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As one RD said...

"After All, for the Well-Ordered Mind, Serum Proteins Tell Us Nothing We Do Not Already Know"

Adapted from an RDN who reads a lot of Harry Potter



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From a Dietitian Listserv....

"I had a patient admitted for rehab from assisted living. She is dealing with multiple illnesses. She has a **NAS low protein diet order**. Her historical diagnoses are **cirrhosis** (non-alcoholic), **encephalopathy**, **CKD with anemia**, **metabolic acidosis**, depression and auto immune hepatitis. I know we don't use the albumin to determine nutritional status anymore, but it is 1.8; labs otherwise are unremarkable. I was wondering if I should get this diet changed."



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Goal: Quell the Inflammatory Process

Nutritional status cannot improve until this occurs

Body weight

Weight change

Appetite

AND Nutrition Care Manual



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Then What Could Happen?

Increased falls

Longer admit rates

Increased readmit rates

Increased treatment costs

Increased mortality

Tappenden, et al. J Acad Nutr Diet. 2013



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Continued Emerging Evidence-Based Science Clearly Defines Omega-3 Fatty Acids as a Prominent Player in the Anti-Inflammatory Process

Beneficial effects of Omega-3s:

- Cardiac
- Bone
- Joint
- Skin
- Liver
- Brain/cognition



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Nutrition Risk Identified

Compromised intake or loss of body mass

Inflammation present?

No

Mild to moderate

Yes

Starvation-related Malnutrition
(pure chronic starvation, anorexia nervosa)



Chronic Disease-related Malnutrition
(End Stage COPD, sarcopenia)



Acute Disease- or Injury-related Malnutrition
(major infection, burns, trauma, closed head injury)



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Pre-Admission Info for a Short-term Med-A Stay

Dr. Note: Hosp acquired Pneumonia. Unsure if this is a bacteria Pneumonia. Swallow eval indicates dysphagia. Pt is coughing & dyspneic. In Droplet Isolation (I believe this is standard protocol for Pneumonia). IV Zosyn, Vanco, Levo, to be tapered down to PO Levo only. Also - Hypovolemia (IV fluids & Lasix on hold), Anemia (rec'd Venofer & Transfused), ARF, Orthostatic Hypotension (better on Midodrine), Hypercalcemia, Severe Protein Malnutrition w/ poor app, lethargic. A&Ox2.

RN & PT Notes: c/o Back Pain. Oriented but Tired - requested to get back in bed after standing exercise.

SLP Note: Very poor-fitting dentures causing severe underbite. Aspirates thin liquids. Start Dysphagia II, Edentulous Diet with Nectar thick liquids. Recommends pt receive Dysphagia Therapy.



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Two Questions:

What is
the
nutritional
problem?

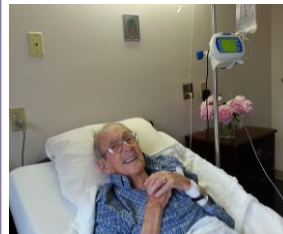
How can
I help
you?



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Meet Peter



Admitting Diagnosis:
Protein Calorie Malnutrition

ICD-9 Code

262: Other Severe Protein
Calorie Malnutrition

- *112 Pounds
- * Significant weight loss past 6 months
- *BMI 17
- *68 Inches
- *Albumin = 2.9
- *Total Protein 5.2
- *Serum transferrin 125
- *Total lymphocyte count 700



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Two Questions:

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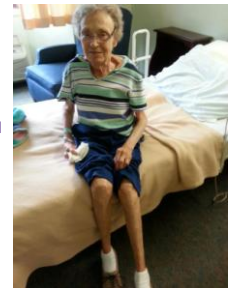


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Meet Mary: What You See is NOT What You Get

- 60 inches
- 81 pounds
- Multiple co-morbidities
- Albumin = 4.1 (3.5-5.2)
- Total protein = 7.4 (6.1-8.2)
- Dehydrated meeting 25% of Fluid needs
- BMI=16
- Severe PEU



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Two Questions:

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Meet Paul

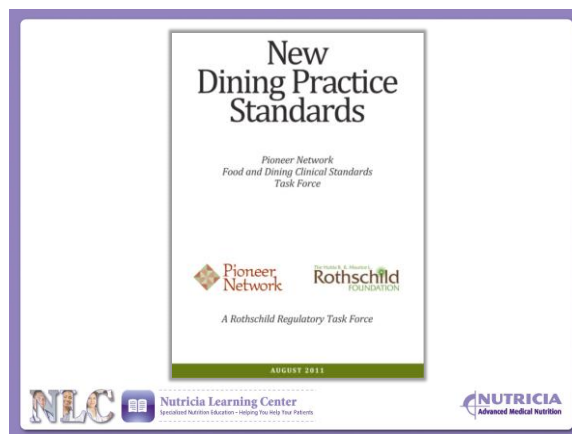
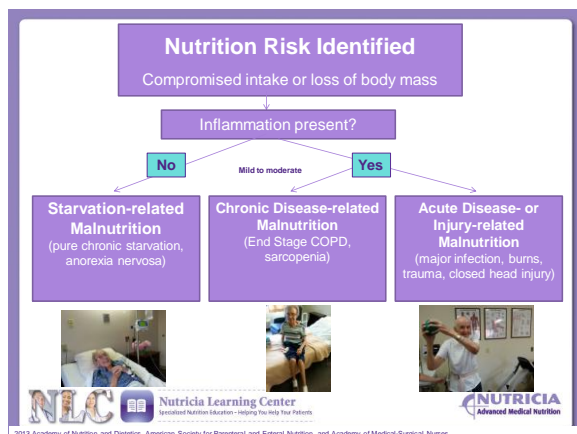


- 148#s
- 74 Inches
- Albumin = 3.4
- Total Protein 5.8
- BMI:18.9



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F-Tag 325 Nutrition

Current Thinking

- Most nursing home residents are at risk for malnutrition
- They may need a targeted solution diet

Liberalized Diet

- Can enhance the quality of life
- Improve nutritional status
- It's no longer the exception, it's the rule!

AND Position Paper on Liberalized Diets in Long-term Care.

Niedert, KC. Position of the American Dietetic Association: Liberalization of the diet prescription improves quality of life for older adults in long-term care. J Am Diet Assoc. 2005.

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NUTRICIA
Advanced Medical Nutrition

"JUST FEED THEM CINDY" - Chef

"This can be a very simple business, but that does not mean it's easy"

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NUTRICIA
Advanced Medical Nutrition

"But honey, how can I eat when I can't eat?"

— Ellen, 101 years old

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Real Food First

ADA/AND: Research suggests the goal of food service is to create a meal situation as natural and independent as possible, comparable with eating at home.

Stringent diet restrictions limiting familiar foods and eliminating or modifying seasonings may contribute to poor appetite; decreased food intake, increased risk of illness, infection and weight loss.

CMS:
With any nutrition program, improving intake via wholesome foods is generally preferable to adding nutritional supplements.

Niedert, KC. Position of the American Dietetic Association: Liberalization of the diet prescription improves quality of life for older adults in long-term care. J Am Diet Assoc. 2005.

CMS SOM Appendix PP-4B3.25(i) Tag 325 Nutrition 2008 Revised Guidance

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A Wound Can Look Like an Iceberg

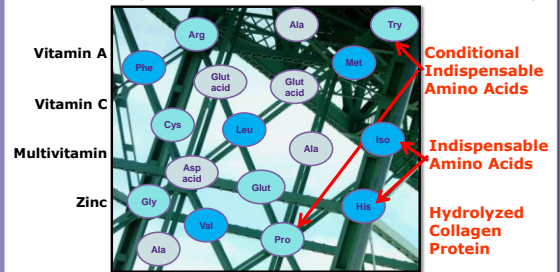


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The Scaffolding Effect and the Power of Nutrition

The scaffolding protein structure necessary for wound healing



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Stage 3: The power of hydrolyzed modular proteins



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Protein Hydrolyzation

Defined: Complete breakdown of protein molecules.

Breaks the protein down to its elemental absorbing unit (di-peptides and tri-peptides). By doing this, the protein is not denuded or degraded in the stomach.

Proteins which are pre-digested, have the large protein molecules already hydrolyzed (broken down) to increase absorption and assimilation.



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Medical Foods

Foods that are specially formulated & processed for the patient/resident who is seriously ill or who requires the product as a major treatment modality

Criteria:

- Oral or tube feeding
- Labeled for the dietary management of a specific medical disorder, disease, or condition for which there are distinctive nutritional requirements
- Intended to be used under medical supervision

<http://www.fda.gov/cdr/dms/medfood.html>

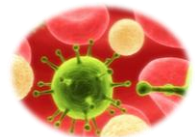


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Heavy burden of PEU on the patient & HCPs

- Impaired wound healing
- Immune suppression
- Increased infection rate
- Muscle wasting
- Functional loss



Journal of the Academy of Nutrition and Dietetics Volume 113, Issue 9, Pages 1210-1227, September 2013



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Rehospitalization

Defined: Readmission within the first 30 days after discharge

Loss of weight and decreased blood albumin levels after discharge are strong predictors of readmission within 30 days

Largest study of greater than 10,000 consecutive admissions reported a readmission rate of 17%



Probstner, JM, Jensen, GL, Orlicky-Davis, H, McCann, SM. Predicting early, intensive hospital readmission in nutritionally compromised older adults. Am J Clin Nutr. 1997;65(1):114-120. Journal of the Academy of Nutrition and Dietetics Volume 113, Issue 9 Page 1219-1227, September 2013



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Readmissions

In a large single study of 1,442 patients with a readmit rate of 11%, the most common reasons for readmission were:

28% GI problems / complications

22% Surgical infections

10% Failure to thrive / malnutrition

Journal of the Academy of Nutrition and Dietetics Volume 113, Issue 9 Page 1219-1227, September 2013



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What is Post Hospital Syndrome?

Defined: An acquired condition of vulnerability or wear and tear on the body just by being in the hospital

Poor nutrition can contribute to post hospital syndrome.



Krumholz, HM N. Engl J. Med. 2013;368(2): 100-102.



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Factors Associated with Post Hospital Syndrome

- New medications
- Cognition changes
- Immobility
- GI Upset
- Constipation
- Mental Health Changes
- Increased Level of Stress



Dramatically increases the risk of a 30 day readmit; Often for reasons other than the original diagnosis

Krumholz, HM N. Engl J. Med. 2013;368(2): 100-102.



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Post Hospital Syndrome is at the Heart of High Readmission Rates

Fact:

Nearly 1/5 of Medicare patients (over 65y) who discharge from the hospital develop post hospital syndrome.

Krumholz, HM N. Engl J. Med. 2013;368(2): 100-102.



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Organizational strategies for the use of medical foods in your facility:

Evidence based organizational practices have a greater potential to affect numerous residents than implementing anecdotal strategies implemented by a single clinician.

Dyck MJ, Schumacher JR. Using evidence-based organizational strategies to prevent weight loss in frail elders. Annals of Long-Term Care. Clinical Care and Aging. 2015;21(6):24-30



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TOOLS TO USE



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New Screening Tool Detects Appetite Problems in Senior Adults

Council on Nutrition Appetite Questionnaire

A. My appetite is
1. Very poor
2. Poor
3. Average
4. Good
5. Very good

C. I feel hungry
1. Never
2. Occasionally
3. Some of the time
4. Most of the time
5. All of the time

E. Compared to what I would like to eat
1. Much worse
2. Worse
3. Just as good
4. Better
5. Much better

G. I feel sick or nauseous when I eat
1. Most times
2. Often
3. Sometimes
4. Rarely
5. Never

B. When I eat, I feel full after
1. Eating only a few mouthfuls
2. Eating about a third of a plate/meal
3. Eating about half of a plate/meal
4. Eating most of the food
5. Hardly ever

A. My appetite is
1. Very poor
2. Poor
3. Average
4. Good
5. Very good

C. I feel hungry
1. Never
2. Occasionally
3. Some of the time
4. Most of the time
5. All of the time

D. Food tastes
1. Very bad
2. Bad
3. Average
4. Good
5. Very good

Reprinted from Australian Family Physician Vol. 33, No. 10, October 2004



Suggestions For Increasing Calories and Protein

Used with permission from *Dining Skills: Practical Interventions for the Caregivers of Older Adults with Eating Problems*

- ✓ Enhance Dining skills and Environment
- ✓ Liberalize Diet

Other Resources:

- www.Nutrition411.com
- www.BeckyDorner.com



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FINAL THOUGHTS ON DIETITIANS AND LEADERSHIP



Leadership in Nutrition and Dietetics. Today's Wisdom for Tomorrow's Leaders May 2014 Supplement 1 Journal of the Academy of Nutrition and Dietetics



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“LEADERSHIP DOESN'T SOLELY COME FROM THE TOP DOWN, IT IS A SHARED RESPONSIBILITY”

-Sylvia Escott-Stump, MA, RD, LD
2011 ADA president



Leadership in Nutrition and Dietetics. Today's Wisdom for Tomorrow's Leaders May 2014 Supplement 1 Journal of the Academy of Nutrition and Dietetics



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RDN'S DO NOT STAND ALONE (LIKE A SILO) AS A MEMBER OF THE HEALTHCARE TEAM



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“KEY LEADERSHIP ATTRIBUTES ARE **COMPETENCE, CONFIDENCE, RISK-TAKING, AND NOT JUST COMPETENT, ACCURATE, AND SAFE PRACTITIONERS, BUT LEADERS.”**

-Carol Porter, Ph.D, RD, FADA
Director of Department of Nutrition and Food Service,
UCSF Medical Center



The Future Needs of the Public

Dietetic professionals are challenged daily and we have a unique opportunity to meet it.



Thank you and Questions



CEU code next slide



CEU/CPE Instructions

To receive your CEU Certificate:

1. Go to NutriciaLearningCenter.com
2. Click on "CEU Certificates"
3. Enter code: **EWPEM1**

→ Certificate will arrive via email in about 2-3 business days.

To ensure delivery of certificate, use a personal email. (ie. Yahoo, gmail)

*This webinar was recorded and will be available on
NutriciaLearningCenter.com*

