NUTRITION STRATEGIES FOR PRESSURE INJURY MANAGEMENT
MARY ELLEN POSTHAUER, RDN, LD, FAND
Objectives

1. Recognize the importance of screening and assessment to identify malnutrition and pressure injury risk

2. Examine the building block of nutrition (macronutrients and micronutrients) that dominate healing

3. Apply the 2014 NPUAP/EPUAP/Pan Pacific Pressure Injury Alliance nutrition guidelines into practice

4. Define practical nutrition and hydration strategies for healing pressure injuries
Strength of Recommendations (SOR)
Assists Health Professionals Prioritize Interventions

Strong positive recommendation: definitely do it

Weak positive recommendation: probably do it

No specific recommendation

Weak negative recommendation: probably don’t do it

Strong negative recommendation: definitely don’t do it

2014 Prevention and Treatment of Pressure Ulcers: Clinical Practice Guideline
Malnutrition: problem across all settings

- 2011 John Hopkins study indicated 53% of patients are malnourished
- 37% of patients hospitalized for 1-2 days experience LBM loss
- LTC- 21-51%
- Outpatient/home care 13-30%
Lean Body Mass is Essential for:

- Muscle Strength
- Immunity
- Wound Healing
- Organ function
- Skin Integrity
## Loss of Lean Body Mass Counts

<table>
<thead>
<tr>
<th>Loss of LBM</th>
<th>Complications</th>
<th>Associated Mortality</th>
</tr>
</thead>
<tbody>
<tr>
<td>10%</td>
<td>↓ immunity, ↑ infections</td>
<td>10%</td>
</tr>
<tr>
<td>20%</td>
<td>↓ healing, weakness, infection</td>
<td>30%</td>
</tr>
<tr>
<td>30%</td>
<td>too weak to sit, pressure ulcers, pneumonia, no healing</td>
<td>50%</td>
</tr>
<tr>
<td>40%</td>
<td><strong>DEATH,</strong> usually from pneumonia</td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>
Malnutrition

- Increases morbidity and mortality.
- Decreases function and quality of life.
- Increases frequency and length of hospital stay.
- Increases health care costs.

Inflammation and Malnutrition

- Inflammation (d/t infection, injury, surgery, etc.): an important underlying factor that increases risk for malnutrition.
- May contribute to suboptimal response to nutrition intervention and increased risk of mortality.

**Malnutrition**

- **Fry**
  - Pre-existing malnutrition/weight loss increased the odds of developing a PU 3.8 times. (2010)

- **Banks**
  - Australia, odds ration of having a pressure ulcer are higher with malnutrition in acute and LTC. (2010)

- **Iizaka**
  - Home care study in Japan: ≥ 65, rate of malnutrition 58.7% with pressure ulcers compared to 32.6% without them. (2010)

- **Rasero**
  - Acute care, LTC & home care study of older adults, 88% at PI risk had inadequate nutrition. (2013)
Medical Nutrition Therapy Protocol for Pressure Injury Management

• Does your organization have a MNT protocol for pressure injuries?
• Is it interprofessional?
• Does it result in positive outcomes for your patient?
Medical Nutrition Therapy Pressure Injury Guideline

Background:

• Medical nutrition therapy (MNT) is an integral part of the wound management plan. Without adequate nutrition and hydration, healing is prolonged and quality of life diminishes.

• Consumption of adequate calories and protein supports collagen and nitrogen synthesis, which is essential for healing. When it is not possible to achieve adequate levels of these essential nutrients through normal consumption of food, nutritional supplementation is necessary and has been clinically shown to promote wound healing.

• Pressure injuries remain a major healthcare problem despite the advances in medical treatment modalities and support surfaces, especially for older adults whose nutritional status is often compromised.

• The management of pressure injuries requires a collaborative, interdisciplinary team approach that includes the individual, family, and/or caregiver.
Guide for Pressure Injury Management

Trigger conditions: Nursing Assesses

• Braden Scale < 16
• MNA-SF ≤ 11 or validated screening tool indicates malnutrition risk
• Unintended wt. loss > 5% in 30 days, >10% in 180 day
• Poor oral intake
• Immobility, decline in ADLs
• Infections (UTI)
• Diagnosis of under-nutrition/malnutrition/hydration deficits
• Decline in ability to eat independently
• Chewing/swallowing problem/dysphagia
• Co-morbid conditions: end-stage renal disease, CHF, diabetes
• Cognitive impairments
• Skin exposure to urinary or fecal incontinence
• History of Pressure injury
Algorithm for Prevention of PIs

Trigger conditions: UWL poor oral intake, immobile, swallowing concerns, low PU risk assessment score, risk of malnutrition per validated nutrition screen

Screen & Assess: using validated screening tool & refer to registered dietitian or nutrition team to assess & document malnutrition & PU risk
Nutrition Screening

1. Screen nutritional status for each individual at risk of or with a pressure ulcer:
   • at admission to a health care setting;
   • with each significant change of clinical condition; and/or
   • when progress toward pressure ulcer closure is not observed. (SOE=C, SOR = Probably do it)

2. Use a valid and reliable nutrition screening tool to determine nutritional risk. (SOE = C, SOR= probably do it)

3. Refer individuals screened to be at risk of malnutrition and individuals with an existing pressure ulcer to a registered dietitian or an interprofessional nutrition team for a comprehensive nutrition assessment. (SOE = C; SOR=Probably do it.)

©2014 Prevention and Treatment of Pressure Ulcers: Clinical Practice Guideline
<table>
<thead>
<tr>
<th>Tool</th>
<th>Description</th>
<th>Validation Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>MST</td>
<td>Malnutrition Valid and reliable for use in <strong>acute care and ambulatory care</strong> to identify malnutrition</td>
<td>(Ferguson, M et al. 1999)</td>
</tr>
<tr>
<td>MNA</td>
<td>Mini-Nutritional Assessment Validated in <strong>individuals</strong>/Pus Langkamp-Henken et al. (2005)</td>
<td>Validated and easy to use in older adults (Paudlia 2012)</td>
</tr>
<tr>
<td>MUST</td>
<td>Malnutrition Universal Screening Tool To identify risk of undernutrition (Poulia et al. 2012)</td>
<td>Validated for use in <strong>older adults admitted to acute care</strong></td>
</tr>
<tr>
<td>SNAQ</td>
<td>Short Nutrition Assessment Questionnaire</td>
<td>Acute care, residential care and community adults</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Neelemant et al. (2008)</td>
</tr>
</tbody>
</table>
Mini Nutritional Assessment®

MNA®

Validated and easy to use in geriatric patients

Acute care, hospital based ambulatory care, LTC

http://www.mna-elderly.com
Recommendations for Intervention

- **MNA Score**
  - Normal Nutritional Status (12 – 14 points)
  - At Risk of Malnutrition (8 – 11 points)
  - Malnourished (0-7 points)

**Normal Nutritional Status (12 – 14 points)**
- Rescreen
  - After acute event or illness
  - Once per year in community dwelling elderly
  - Every 3 months in institutionalized patients

**At Risk of Malnutrition (8 – 11 points)**
- No Weight Loss
  - Close weight monitoring
  - Rescreen every 3 months
- Weight Loss
  - Nutrition intervention
    - Diet enhancement
    - Oral nutritional supplementation (400 kcal/d)¹
  - Close weight monitoring
  - Further in-depth nutrition assessment

**Malnourished (0-7 points)**
- Nutrition intervention
  - Oral nutritional supplementation (400-600 kcal/d)²
  - Diet enhancement
- Close weight monitoring
- Further in-depth nutrition assessment

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© Nestec S.A 2009
# Malnutrition Screening Tool (MST)

## STEP 1: Screen with the MST

1. **Have you recently lost weight without trying?**
   - No: 0
   - Unsure: 2

2. **If yes, how much weight have you lost?**
   - 2-13 lb: 1
   - 14-23 lb: 2
   - 24-33 lb: 3
   - 34 lb or more: 4
   - Unsure: 2
   
   **Weight loss score:**

3. **Have you been eating poorly because of a decreased appetite?**
   - No: 0
   - Yes: 1

   **Appetite score:**

## STEP 2: Score to determine risk

- **MST = 0 OR 1**
  - **NOT AT RISK**
  - Eating well with little or no weight loss
  
  If length of stay exceeds 7 days, then rescreen, repeating weekly as needed.

- **MST = 2 OR MORE**
  - **AT RISK**
  - Eating poorly and/or recent weight loss
  
  Rapidly implement nutrition interventions. Perform nutrition consult within 24-72 hrs, depending on risk.

## STEP 3: Intervene with nutritional support for your patients at risk of malnutrition.

**Notes:**

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Self-MNA – 65 +

- Easy to use
- May help when staff is limited or busy
- Does raise awareness about possible nutrition-related problems

Donini LM. Validity of the self-mini nutritional assessment (Self-MNA) for the evaluation of nutritional risk. A cross-sectional study conducted in general practice; J of Nutrition, Health & Aging 2017.
<table>
<thead>
<tr>
<th>MEAL Scale for Malnutrition in Chronic Wound Patients in Outpatient Wound Center</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Multiple wounds</strong></td>
</tr>
<tr>
<td>Do you have open wounds?</td>
</tr>
<tr>
<td>0    No</td>
</tr>
<tr>
<td>1    Yes</td>
</tr>
<tr>
<td><strong>Eats&lt; 3 meals</strong></td>
</tr>
<tr>
<td>How many meals &amp; snacks do you eat on a typical day?</td>
</tr>
<tr>
<td>0   ≥ 3 meals</td>
</tr>
<tr>
<td>1   ≤ 3 meals</td>
</tr>
<tr>
<td><strong>Appetite loss</strong></td>
</tr>
<tr>
<td>Thinking about your normal food intake, how would you say you are eating, about the same, more or less than usual?</td>
</tr>
<tr>
<td>0   About the same or more</td>
</tr>
<tr>
<td>1   Less than usual</td>
</tr>
</tbody>
</table>
**MEAL Scale for Malnutrition in Chronic Wound Patients in Outpatient Wound Center**

**Level of Activity**

Thinking about your normal level of activity, how would you consider your activity level over the past month?

- 0    Normal
- 0    Not quite normal but able to do most things
- 1    Not feeling up to most things, in bed or chair less than half the day
- 1    Able to do little activity & spend most of the day in bed or chair
- 1    Pretty much bedridden, rarely out of bed.

**Total Points**

- 0-1   Not at risk
- 2-4   At risk

Wound Care Registry: Process Measure: Nutritional Screening & Intervention Plan in Patients with Chronic Wounds & Ulcers

**DESCRIPTION:** The % of patients aged 18 years and older with a diagnosis of a wound or ulcer of any type who undergo nutritional screening with a validated tool) within the 12 month reporting period, and for whom an appropriate nutritional intervention was ordered based on the results of the tool.

**CLINICAL RECOMMENDATION STATEMENTS:**
Because adequate nutrition and hydration are critical to healing wounds of all etiologies, routine screening of patients with wounds is advisable.

Consensus: Alliance of Wound care & 16 organizations

http://uswoundregistry.com/Files/Approved/nonMIPS_US%20Wound%20Registry%202020.pdf
Guide for Management of Pressure Injuries: RDN trigger conditions

- Diagnosis/medical condition
- Skin condition per facility’s wound assessment
- Review of skin assessment & validated nutrition screening tools
- Current dietary intake
- Determine weight status, loss or gain
- Determine nutritional needs
- Medications/medical treatments
- Average food/ fluid intake, (% consumed)
- Interview individual

- Chewing/swallowing status/ability to eat independently
- Dehydration risk factors
- Nutrition related laboratory values: ie HgbA1C, BUN Note: serum hepatic protein values are affected by infection, inflammation, hydration and renal function and do not reflect nutritional status
- Renal and liver function for tolerance of protein
- Hydration status for elevated temperature, vomiting, profuse sweating or heavy draining wounds
What about labs

No lab test can specifically determine an individual’s nutritional status.

• Serum protein levels may be affected by metabolic stress, inflammation, renal function, hydration and other factors
Inflammation and Stress → Release of Cytokines

- Decreased appetite, ↑ energy expenditure
- Muscle Wasting, Loss of LBM
- Decreased nitrogen retention
- Decreased albumin synthesis
- Extravasation of albumin from intravascular spaces
- Increased protein breakdown, increased insulin resistance

Cytokines
- Interleukin – 1
- Interleukin – 2
- Interleukin – 6
- Tumor necrosis factor

Source: Council for Nutrition Clinical Strategies in LTC
1. Assess weight status for each individual to determine weight history and significant weight loss from usual body weight ($\geq 5\%$ change in 30 days or $\geq 10\%$ in 180 days). 
   SOE = C; SOR= Probably do it

2. Assess the individual’s ability to eat independently. 
   SOE = C; SOR= Definitely do it

3. Assess the adequacy of total nutrient intake (food, fluid, oral supplements, enteral/parenteral feedings). 
   SOE = C; SOR= Definitely do it

©2014 NPUAP-EPUAP PPIA Pressure Ulcer Prevention and Treatment Guidelines
Plan of Care for PI Treatment

UWL of >5% in 30 days, eats less than 50% of 2gm. sodium diet, MNA screen 7 indicates malnutrition, Stage 3 PI on coccyx

Refer to registered dietitian to reassess, document, & implement revised treatment plan
What Does the Evidence Suggest?

Energy Intake

Responsive increase in metabolic rate which increases caloric needs (triggered by PI, infection, severe illness, trauma, etc.)

Energy is essential for pressure injury healing

Need to provide adequate calories to promote anabolism, nitrogen and collagen synthesis

Creda 2011, Yamamoto 2009
Energy Intake

1. Provide individualized energy intake based on underlying medical condition and level of activity. (SOE = B, Probably do it)

2. Provide 30 to 35 kcalories/kg body weight for adults with a pressure ulcer who are assessed as being at risk of malnutrition. (SOE = C, SOR= Definitely do it)

3. Adjust energy intake based on weight change or level of obesity. Adults who are underweight or who have had significant unintended weight loss may need additional energy intake. (SOE = C, SOR= Definitely do it)
Energy Intake

4. Revise and modify/liberalize dietary restrictions when limitations result in decreased food and fluid intake. These adjustments should be made in consultation with a medical professional and managed by a registered dietitian whenever possible. (SOE = C, SOR= Probably do it)

5. Offer fortified foods and/or high calorie, high protein oral nutritional supplements between meals if nutritional requirements cannot be achieved by dietary intake. (SOE = B, SOR= Definitely do it)
Obese Individuals

- No evidence based guidelines available R/T the nutritional needs of the obese person with pressure injuries
- Adequate calories, protein, fluids & nutrients are needed for healing
  - General consensus- liberalize diet to promote healing
  - Consider Mifflin-St. Jeor formula to assess energy
  - Once the pressure injury is completely healed, caloric restrictions may be gradually implemented as needed
- Monitor skin integrity and coordinate with RDN (ongoing)
What Does the Evidence Suggest for Optimal Protein

• Increased protein linked to improved PI healing rates
• Provide adequate protein for positive nitrogen balance for an adult with a pressure ulcer. (SOE = B, SOR=Probably do it)
Protein Intake

• Offer 1.25 to 1.5 grams protein/kg body weight daily for adults with an existing pressure ulcer who is assessed to be at risk of malnutrition when compatible with goals of care, and reassess as condition changes. (SOE = C, SOR= Probably do it)

• Offer high calorie, high protein nutritional supplements in addition to the usual diet to adults with nutritional risk and pressure ulcer risk, if nutritional requirements cannot be achieved by dietary intake. (SOE A = SOR= Probably do it)

• Assess renal function to ensure that high levels of protein are appropriate for the individual. (SOE = C, SOR= Definitely do it)
Ensure Adequate Protein

15%-38% of older men & 27%-41% of older women eat less than the RDI for protein.
(Morley et al. 2012)

Protein spread equally between breakfast, lunch and dinner
(Paddon-Jones 2009)
Alternate Food Sources of Protein

- 8 oz. Greek yogurt
  - 140 cal
  - 14 gms pro

- Half sandwich
- 8 oz. 2% milk
  - 320 cal
  - 18 gm pro

- High protein bar
  - 210 cal
  - 12 gm pro
Micronutrients
Vitamins and Minerals

1. Provide/encourage an individual with a pressure ulcer to consume a balanced diet that includes good sources of vitamins and minerals. (SOE = B, SOR = Definitely do it)

1. Provide/encourage an individual with a pressure ulcer to take vitamin and mineral supplements when dietary intake is poor or deficiencies are confirmed or suspected. (SOE = B, SOR = Probably do it)
Key Recommendations

- Variety of vegetables, dark green, red & orange
- Fruits: whole fruits
- Protein: lean meat, fish, legumes, nuts, seeds
- Grain, focus-whole grains
- Dairy, yogurt, cheese, fortified soy
- Healthy fats, oils, olive, avocados,
Micronutrients

• Most nutrient needs can be met through a healthy diet
• Individuals with PIs may not be consuming an adequate diet
• No evidence to support vitamin C above the RDI unless a deficiency is diagnosed or suspected
Zinc

- No research to show zinc supplementation improves healing
- When clinical signs of zinc deficiency are present, zinc should be supplemented at ≤40 mg elemental zinc/day (UTL)
- Doses >40 mg/day can adversely affect copper status and possibly result in anemia
Plan of Care for PI Treatment

UWL of >5% in 30 days, current wt. 140#, eats less than 50% of 2gm. sodium diet, MNA screen 7 indicates malnutrition, Stage 3 PU on coccyx

Refer to registered dietitian or nutrition team to reassess, document malnutrition & implement treatment plan

Re-assess, interview individual, assess calorie 30-35 Kcal/kg ABW, protein 1.25-1.5 g/kg ABW, fluid 1 mL/cal, modify diet to reg, recommend multivitamin/mineral supplement, offer high protein oral supplement between meals
Plan of Care for Chronic Non-healing PI

- Slowing regaining wt., eats 75% of meals, 100% of supplement, stage 4 PI on coccyx & no progress toward healing plus draining wound
- Refer to registered dietitian to reassess, document & revise treatment plan
Protein Intake

7. Supplement with high protein, arginine and micronutrients for individuals with a pressure ulcer Category/Stage III or IV or multiple pressure ulcers when nutritional requirements cannot be met with traditional high calorie and protein supplements. 
(SO E = B, SOR= Probably do it)
A multi-country, randomized, placebo-controlled trial to demonstrate the efficacy of a specific ‘arg+ONS-spec.’ on pressure ulcer healing in non-malnourished patients with stage III-IV ulcers

Ready-to-drink, high-protein, arginine enriched nutritional supplement

Containing per 200-ml serving:
- 20 g protein
- 3 g L-arginine
- 250 kcal

Vitamins and micronutrients including:
- 250 mg vitamin C
- 38 mg vitamin E (α-TE)
- 9 mg zinc
- 1.5 mg carotenoids
With specific oral nutritional support a significant reduction in ulcer size was reached 2 weeks earlier compared to the control group.

- First time-point with a significant reduction compared to baseline
- Arg+ONS-spec. = day 21, P=0.011
- Control group = day 35, P=0.019
- Means ± SEM; data adjusted for center
Oligo Element Trial Study Group

Study Group

- Multicenter, RCT to evaluate supplementation with calorie, protein formula + arginine, zinc & antioxidants
- 200 malnourished patients with stage II, III, and IV PrUs
- 8 week trial – LTC and home care in Italy
- Majority of PrUs on sacrum

Malnutrition Criteria

- UWL – 5\% (30 days) and 10\% (3 months)
- BMI < 20 age < 65 and < 21 > 65
- Food intake (<60\% of estimated total daily energy requirements in the week before the study)
- Both groups received a 400 mL high-calorie, high-protein formula (100 mL, 4x /day)
- Standard wound care for all
# Nutrition Supplement

**Intervention**
- Protein 10 grams
- Arginine-L 1.5
- Zinc 4.5 mg
- Copper 675 mcg
- Vitamin C 125 mg
- Vitamin E 19.0 mg

**Standard: Control**
- Protein 10 grams
- Arginine-0
- Zinc 2.3 mg.
- Copper 338 mcg
- Vitamin C 19mg
- Vitamin E 2.3 mg
Conclusion

• 69.9% in intervention formula group had 40% or greater reduction in PU size compared to 54.1% in control

• The efficacy of these nutrients in wound healing is likely synergistic because there is no evidence supporting an independent effect when given alone

• This nutritional intervention may be beneficial when added to optimized local wound care for the treatment of pressure ulcers in malnourished patients

What Does the Evidence suggest?

- Dehydration is a risk factor for pressure injury development
- Hydration needs must be met to assure proper prevention and healing
Hydration

1. Provide and encourage adequate daily fluid intake for hydration for an individual assessed to be at risk of or with a pressure ulcer. This must be consistent with the individual’s comorbid conditions and goals. (SOE = C, SOR= Definitely do it)
Hydration

2. Monitor individuals for S/S dehydration: changes in weight, skin turgor, urine output, elevated serum sodium and/or calculated serum osmolality. (SOE = C, SOR= Probably do it)

3. Provide additional fluid for individuals with dehydration, elevated temp, vomiting, profuse sweating, diarrhea or heavily draining wounds. (SOE = C, SOR= Definitely do it)
Fluids

Needs increase according to insensible water loss

Needs may decrease for CHF, renal failure
Consider Taps

- Turn
- Align
- Position
- Sips
Provide Hydration

• Add variety of beverages
• Glass of water with meals
• Hydration pass & juice machines with resident access
• Hydration in rehab department
Plan of Care for Chronic Non-healing PI

- Slowing regaining wt., eats 75% of meals, 100% of supplement, stage 4 PI on coccyx & no progress toward healing plus draining wound.

- Refer to registered dietitian to reassess, document & revise treatment plan.

- Interview individual, continue previous calorie & protein levels, ↑fluid offered between meals, discontinue multivitamin/mineral, offer high protein oral supplement fortified with arginine & micronutrients between meals.
Plan of Care for Condition Change

Recent stroke & dysphagia, NPO status, wound healing per PUSH score,

Refer to registered dietitian or nutrition team to reassess, document & revise treatment plan.
Nutrition Support

Consider nutritional support (enteral or parenteral nutrition) when oral intake is inadequate. This must be consistent with the individual’s goals. (SOE = C, SOR= Probably do it)

Individuals have the right to request or refuse nutrition & hydration as medical treatment

Hydration with IVs does not supply nutrients
Plan of Care for Condition Change

Recent stroke & dysphagia, NPO status, wound healing per PUSH score,

Refer to registered dietitian or nutrition team to reassess, document & revise treatment plan

Re-assess, interview individual & caregivers, enteral nutrition discussed & initiated, protein requirement not met with formula & modular protein added BID
<table>
<thead>
<tr>
<th>Nutrient</th>
<th>Function</th>
<th>Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calories</td>
<td>Energy source to preserve lean body mass</td>
<td>30-35 kca/kg BW &amp; adjust per client, level of obesity</td>
</tr>
<tr>
<td>Protein</td>
<td>Tissue maintenance Collagen synthesis, build LBM</td>
<td>1.25- 1.5 g/kg BW adjust per condition, monitor renal status</td>
</tr>
<tr>
<td>Fluid</td>
<td>Normal cell function &amp; tissue integrity</td>
<td>1 mL/kcal consumed, monitor hydration status</td>
</tr>
<tr>
<td>Vitamin C</td>
<td>Collagen synthesis ,supports formation of new blood vessels</td>
<td>Mega doses not recommended</td>
</tr>
<tr>
<td>Zinc</td>
<td>Protein synthesis; cellular growth; deficiency impairs healing</td>
<td>RDA 11mg/day males,8mg/day females, mega doses not recommended, UTL 40 mg/day</td>
</tr>
<tr>
<td>Arginine</td>
<td>Biological precursor to nitric oxid,increases blood flow which can support collagen in wounds</td>
<td>Supplemental arginine in high cal. high protein  supplement with micronutrients maybe beneficial</td>
</tr>
</tbody>
</table>
Effective pressure injury treatment: multidisciplinary & holistic

- **Support Surfaces**
  - Mattresses, cushions, protection, etc.

- **Wound Care**
  - Dressings, cleaning, drainage, etc.

- **Nutrition**
  - Delivery of nutrients to stimulate healing

- **Nursing Care**
  - Turning regimes, hygiene, etc.
## Guide for Management of Pressure Injuries

### Implement PI Protocol/POC

**Estimate Nutrient Needs:**
- Calories: 30-35 kcalories/kg/body weight (adjust per clinical condition)
- Protein: 1.2-1.5 gms/kg/body weight (adjust per clinical condition)
- Fluid: 1 mL per day per kcalorie consumed, unless contraindicated & monitor hydration status
- Provide oral nutritional supplement with medication pass
- Offer preferred food/beverage at appropriate texture
- Liberalize restrictive diets
- Offer vitamin/mineral supplement with 100% of RDI’s if intake is poor
- Weigh weekly or per facility policy

### Monitor Per Facility Policy

**Monitor:**
- Skin condition and/or wound status weekly or per facility policy
- Acceptance and tolerance of oral supplement
- Caloric, protein, fluid adequacy compared to estimated requirement
- Ability to meet nutrient needs orally
- Weight status
- Laboratory values, if applicable
- Oral intake and if inadequate, consider enteral feeding consistent with individual’s wishes
Desired Outcome

Outcomes:

• Intact skin or progress toward healing
• Improved and/or stable nutritional status
• Intake meets estimated caloric, protein and fluid requirements
• Effectiveness of intervention in collaboration with interdisciplinary team and adjust, if condition changes, improves or declines
• Document and re-assess per policy
Implement Facility MNT Protocol for Successful Nutrition Care

1. Implement MNT protocol & use validated screening tool, refer to RDN to assess nutrition status
   - Collaborate with interprofessional team
   - Individualize interventions and develop POC

2. Provide diet based on estimated needs, consider fortified foods
   - Offer supplements between meals if intake is inadequate
   - Monitor POC and reassess as needed

3. Consider ONS fortified with arginine, vitamin or minerals if needs not met with high calorie/protein supplement
   - Consider EN/PN based on resident's wishes, when needs cannot be met orally
Questions
2015 Roberta Abruzzese Publishing Award

The Role of Nutrition for Pressure Ulcer Management: National Pressure Ulcer Advisory Panel, European Pressure Ulcer Advisory Panel, and Pan Pacific Pressure Injury Alliance White Paper

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- March 2015
References


References


