Nutrition in Older Adults

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Disclosure

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- No additional financial disclosures
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Objectives

- Discuss overarching concepts related to nutrition in older adults
- Correlate the 4Ms of Age Friendly Health Care with nutritional concepts in older adults
- List poor health outcomes associated with weight loss in older adults
- Identify older adults at risk for weight loss using the SNAQ assessment tool, infer meaning from the results, and recommend weight loss interventions
- Recommend evidence-based foods and eating strategies for PWD
- Recommend a healthy diet for multi-morbid older adults

Audience Participation – Show Me Summit on Aging & Health 2023

Join SLIDO #3560997
How to Provide Age-Friendly Care

**What Matters**
Know and align care with each older adult’s specific health outcome goals and care preferences including, but not limited to, end-of-life care, and across settings of care.

**Medication**
If medication is necessary, use Age-Friendly medication that does not interfere with What Matters to the older adult, Mobility, or Mentation across settings of care.

**Mentation**
Prevent, identify, treat, and manage dementia, depression, and delirium across settings of care.

**Mobility**
Ensure that older adults move safely every day in order to maintain function and do What Matters.

For related work, this graphic may be used in its entirety without requesting permission. Graphic files and guidance at ih.org/AgeFriendly

John A Harford Foundation, IHI (2023)
Preference Above All Else (CMS, 2023)

• In a NH, a resident might need a prescribed (restricted) diet to maintain nutrition, but CANNOT be made to eat one against their will which can lead to weight loss

• Rx Diets: diabetic, low salt, mechanically altered (mech ground, puree, thickened liquids)

• Failure to incorporate resident food preferences resulting in weight loss is “actual harm”
High sodium intake (4.7-14.3g/d) has an increased risk of mortality (HR 1.74 [95%CI, 1.03-2.95], p = .04) as compared to normal intake (3.6-4.7 g/d).

Low sodium intake (0.7-2.8 g/d or 2.8-3.6 g/d) has an increased risk of mortality (HR 2.05 [95% CI 1.16-3.62], p = .01) and HR 1.85 [95% CI 1.08-3.20], p = .03 respectively as compared to normal intake (3.6-4.7 g/d).

Mortality risk highest among those with low sodium with low protein intake.

Mortality risk is lowest among those with low sodium with high protein intake.
Munshi et al. (2016) ADA Position Statement on Diabetes Management in LTC
1. Liberalized diets are associated with improved food and beverage intake
2. Recommendation: Restrictive diets should be minimized – Grade B evidence

Fang et al. (2016)
Intensive glucose lowering is associated with fewer MACE (RR 0.92 [CI 95% 0.85-1.00], p = 0.042 and MI (RR 0.90 [95% CI 0.82-0.98], p = 0.020 but do not reduce total mortality, cardiac death, stroke, CHF
Polypharmacy includes supplements

SR and MA (Leelakanok & D'Cunha, 2019):
- Polypharmacy (≥ 5 meds) in >50% of patients, and excessive polypharmacy (≥ 10 meds) strongly associated with increased risk of dementia – aRR 1.30 (95% CI: 1.16-1.46), p < 0.0001 and aRR 1.52 (95% CI: 1.39-1.67), p < 0.0001

Deprescribing associated with increased nutritional and protein intake in poly-medicated, hospitalized stroke rehab patients (Matsumoto et al., 2022)
Large prospective US study including more than 8,000 participants on Vit A, D, E, C, B9, B12 (Cui et al., 2022)

- Both low and high exposure groups on Vit A, E, C, B9, and B12 significantly associated with all cause mortality risk
- Vit D only supplement to significantly correlate with reduced all cause and cancer related mortality risk

Insufficient evidence to recommend Multivitamin (USPSTF, 2022)
NIH (n.d.) Health Professionals Fact Sheet

Summary

USPSTF insufficient evidence to screen asymptomatic adults

• D3 more effectively raises and maintains levels

• 51-70yo: 600IU and 800IU in those >70yo: 800IU – not to exceed 4000IU in most

• skin ability to synthesize D declines with age, and older adults spend less time outdoors – darker skin less able to absorb

• Mostly from foods: fatty fish, beef, liver, egg yolks, fortified milk and grains

Sun: 5-30m face, arms, hands, legs

• ≥spf 8 not blocks transmission

• window light not effective
1. Extra Virgin Olive Oil (EVOO) contains polyphenols from crushing ripe olives (cold-pressed) which are neuroprotective and associated with improved short-term cognition and less mild cognitive impairment -- other benefits suggested by the evidence include: antioxidant, anti-inflammatory, anti-atherogenic, anti-cancer, anti-microbial, anti-viral
Kaddourmi et al. (2022)
RCT evaluating EVOO vs Refined Olive Oil (ROO)
– extracted vs pressed on MCI and BBB permeability (thought impaired in AD)
• Both EVOO and refined olive oil significantly improved clinical dementia rating and behavioral scores
• Both reduced blood brain amyloid and p tau/t tau ratios
• Only EVOO significantly reduced BBB permeability and enhanced function connectivity thought 2/2 biophenols
4Ms and Nutrition: Mentation – MIND & MeDi Diets

Agarwal et al., (2023) & Devranis et al. (2023)

- MIND Diet: Reduced dementia incidence and increased resilience to cognitive decline despite underlying brain pathology; fewer brain plaques with higher compliance scores
- Mediterranean Diet (MeDi): studied extensively with most RCTs showing significant increase in at least 1 cognitive domain among people with various levels of CI
- Both MeDi and MIND: decreased depressive sx
Sarcopenia is low muscle mass and low strength, and results in decreased physical function (Cruz-Jentoft et al., 2019)

SARC-F: 11, 344 across all settings (Sanford et al., 2020)

- 65-74yo 30.7%
- 75-84yo 39.2%
- 85+yo 63.1%
- NH residents 84%
Wounds decrease mobility & Decrease ADLs

- Pressure Ulcers (PUs) cost more than $26 Billion annually (Padula & Delaremente, 2018)
- Healing requires protein with maintained or improved nutrition (CMS, 2023)
Suggested parameters for evaluating significance of unplanned and undesired weight loss are:

(CMS, 2023)

<table>
<thead>
<tr>
<th>Interval</th>
<th>Significant Loss</th>
<th>Severe Loss</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 month</td>
<td>5%</td>
<td>Greater than 5%</td>
</tr>
<tr>
<td>3 months</td>
<td>7.5%</td>
<td>Greater than 7.5%</td>
</tr>
<tr>
<td>6 months</td>
<td>10%</td>
<td>Greater than 10%</td>
</tr>
</tbody>
</table>

The following formula determines percentage of weight loss:

% of body weight loss = (usual weight - actual weight) / (usual weight) x 100
SR: older adult weight loss leads to significant BMD loss – particularly in the total hip, which correlates with frailty and fractures (Jiang et al., 2023)

SR: all studies examining calorie restriction (CR) in older adults measuring lean muscle mass and bone density found CR to be associated with greater loss of muscle and BMD (Locher et al., 2016)

Regained weight has higher proportions of fat which leads further physical impairment (Arnold et al., 2010, Lee et al., 2010, & Newman et al., 2005).
RGA – widely validated screening tool for interdisciplinary health professionals and community advocates to identify geriatric syndromes – Frailty, Risk for Weight Loss, Sarcopenia, and Cognitive Impairment, (SLU GEC, 2023)

- FRAIL
- SNAQ
- SARC-F
- RCA

Screening positive indicates further medical assessment is indicated.
SNAQ – assesses risk for weight loss in older adults across a wide variety of settings including NHs, hospitals, PCP, community screening events (Sanford et al., 2020; Wilson et al., 2005)

**Important Clues for further assessment:**
1. Appetite (Dementia?)
2. Taste (Dementia? Illness?)
3. Satiety (obstruction? Medication ADE?)

(SLU Gateway Education Center (GEC), 2023)
Unintentional weight loss in older adults is associated with poor nutrition, muscle loss, decreased physical function and death (Norman et al., 2021)

- SNAQ: 11,344 screenings across settings (Sanford et al., 2020)

At risk for weight loss:
- 65-74yo 25.1%
- 75-84yo 28.6%
- 85+yo 35.7%
- NH resident 36.4%
Nutritional Interventions (CMS, 2023)

Liberalized diets (minimal restrictions in food type or consistency)

Palatable, attractive, nutritious food at the correct temperature – cold food cold and warm food warm

Flexible dining environment and times which promotes intake

Functional support – senses (glasses? Hearing aids?), physically able (special utensils?, finger-foods? Staff assist?), chew (dentures?), accessible (within reach?)

Nourishing supplements and snacks between meals
Fluids are a critical part of nutrition, and need to be available within hands reach. Alternatives include broth, gelatin, popsicles, and ice cream (CMS, 2023)

- Inadequate hydration increases chances of Urinary tract infections (UTIs), pressure ulcers, skin infections and confusion (CMS, 2023)
- Evidence shows older adults can have poor thirst, and when dehydrated often present with falls, having little energy, and worsening dementia (Morley, 2015)
- Offer drinks in social activities, routine activities, and through verbal and visual cues (Cook et al., 2019)
Meaningful Activities Classification
(Morely, Philpot, Gill, & Berg-Weger, 2014)

- Brief Social Stimulus
- Computer Assisted
- Task Oriented
- **Food Oriented**
- Cognitive Stimulus
- Exercise
- Music, including dancing
- Spiritual
Communal Dining (International Psychogeriatrics, 2020)

Dining areas with socialization and increased choices result in increased nutrient intake, reduced food intake barriers, but are less effective on dementia units where people require individual needs to be met.
Medical Assessment

- Geriatric Syndromes – RGA and SLUMS
- Depression using the GDS, Tx Depression
- Thyroid problems – TSH, Free T4, Tx
- Deficiencies: B12, Iron Studies
- Metabolic problems: protein calorie malnutrition, dehydration, kidney injury, infection – CMP, CBC, protein intake, hydration, Tx
- Swallow problems (dysphagia) – MBS, ST
- Bowel problems (constipation, obstruction, medications, etc.) – colonoscopy, imaging, med rec, specialty referral?
- Gastric motility (diabetes, medications) – diagnostic testing, med rec, specialty referral
- Anorexia – sched meals/fluids; low dose mirtazapine; increased calories/protein
- Food insecurity – SW referral
Weight Loss Interventions: Food Intake

Dietary intake best:
Eating food stimulates the entire digestive system (Livovsky et al., 2020)

• Chewing stimulates olfactory process and gut hormones while mouth feel along with the sound of food being eaten enhances flavor – all combined add to flavor and the hedonic sensation (pleasure) influencing hunger

• Post prandial experience promotes digestive well-being and affects mood
Eating Difficulty & Mortality

Advanced Dementia

- Advanced dementia pts often lose the desire to eat or the ability to physically consume food d/t the neurodegenerative process
- Eating difficulties are a natural part of the advanced dementia disease process
- In one study following those with advanced dementia over 18 mos, 85% experienced eating difficulties and 6-month mortality was nearly 50% of cohort (Mitchell et al., 2009)
Position Statement

“1. Feeding tubes are not recommended for older adults with advanced dementia. Careful hand feeding should be offered; for persons with advanced dementia, hand feeding is at least as good as tube feeding for the outcomes of death, aspiration pneumonia, functional status, and comfort. Tube feeding is associated with agitation, greater use of physical restraints, greater healthcare use due to tube-related complications, and development of new pressure ulcers.”

Evidence from many studies suggests that benefits of TF do not outweigh substantial treatment burdens
FEEDING TUBES

Pressure Ulcers

Teno et al., (2012) Matched Cohort
- PEG patients 2.27 times more likely to acquire pressure ulcer [95% CI 1.95-2.65]
- Pressure ulcer patients less likely to heal (OR 0.70 [95% CI, 0.55-0.89])
Case 1: Mildred

84yo widowed white female who lives alone. PMH: HTN, HLD, CAD, T2DM Her cardiologist wants her to reduce sodium intake under 2g/d and reduce red meat to reduce her risk of a heart attack. Her family mentions it won’t be hard because she isn’t a big meat eater. She admits to not eating much anyway and is no longer using the stairs due to weakness. You perform the RGA and find the following.
Case 2: Fred

72yo married black male with history of IDA, HTN, HLD, BPH, MCI, OA. His primary provider mentioned his BP a little high, told him his iron levels are normal and asked him to stop his iron pill. He is scared to stop the iron because he felt bad when it was low so keeps taking it. In addition to his regular meds, he is taking many OTC supplements on his own including B complex to help with stress, Vit D 5,000u to help bones, Vit C 1000mcg and folic acid 1mg to help with his immune system, memory supplement, omega FA for his heart, and a multivitamin. You perform an RGA and find the following.
Case 3: Willard

81yo WM with advanced dementia. He requires 24/7 supervision and assistance with all ADLs. Lately he has been spitting out his food and neither his daily caregiver or his wife can get anything of substance down. His wife mentions to you “if he doesn’t start eating better his doctor thinks we will need a feeding tube”. What thoughts would you share?


References


References


