

# NUTRITION AND WEIGHT

AGS Geriatrics Evaluation and Management Tools (Geriatrics E&M Tools) support clinicians and systems that are caring for older adults with common geriatric conditions.

From the AMERICAN GERIATRICS SOCIETY

## Geriatrics Evaluation & Management Tools

<b>DEFINITION</b>	<b>Involuntary Weight Loss</b> <ul style="list-style-type: none"><li>Loss of 10 lbs (4.5 kg) or &gt;5% of usual body weight over 6–12 months</li><li>BMI &lt;17 kg/m<sup>2</sup> is consistent with undernutrition.</li><li>Inadequate intake is 25%–50% below the recommended daily intake (RDI).</li></ul>
<b>BACKGROUND</b>	<b>Prevalence of Involuntary Weight Loss</b> <ul style="list-style-type: none"><li>Present in about 13% of older outpatients, 25%–50% of hospitalized older adults, and &gt;50% of nursing-home residents.</li><li>About 40% of older adults have energy intakes lower than two-thirds of RDI.</li><li>Vitamin D deficiency occurs in 30% of individuals &gt;70 years old.</li></ul> <b>Causes of Involuntary Weight Loss</b> <ul style="list-style-type: none"><li>Approximately 50% organ related (CHF, COPD, renal failure, chronic infection and inflammation, GI conditions, medication effects, and neurodegenerative conditions)</li><li>20% neoplastic</li><li>20% idiopathic, including age-associated sarcopenia</li><li>10% psychosocial</li></ul>
<b>AGE-ASSOCIATED CHANGES</b>	<b>Body Composition and Energy Requirements</b> <ul style="list-style-type: none"><li>Lower bone mass, lean mass, and water content; more fat mass</li><li>Reduced basal metabolic rate due to loss of lean body mass.</li><li>Harris-Benedict or similar equations can predict basal energy expenditure.</li></ul> <b>Macronutrient and Micronutrient Needs</b> <ul style="list-style-type: none"><li>MyPlate (<a href="http://www.choosemyplate.gov">www.choosemyplate.gov</a>) provides an older adult food guide pyramid.</li><li>Prudent diet has 20%–35% of energy as fat and 45%–65% as carbohydrates.</li><li>Protein intake should be 0.8 g/kg/d or about 10%–35% of total energy; may increase to 1.5 g/kg/d with stress or injury.</li><li>Daily fiber intake goal is 30 g for older men and 21 g for older women.</li><li>For micronutrients, see <a href="http://books.nap.edu/openbook.php?record_id=11537&amp;page=R1">http://books.nap.edu/openbook.php?record_id=11537&amp;page=R1</a>.</li></ul> <b>Fluid Needs</b> <ul style="list-style-type: none"><li>Decreased thirst perception, impaired response to changes in serum osmolality, and reduced ability to concentrate urine</li><li>Fluid needs of older adults are about 30 mL/kg/d or 1 mL/kcal ingested.</li></ul>
<b>SCREENING</b>	<ul style="list-style-type: none"><li>The 10-item DETERMINE checklist (<a href="http://nutritionandaging.fiu.edu/downloads/NSI_checklist.pdf">http://nutritionandaging.fiu.edu/downloads/NSI_checklist.pdf</a>)</li><li>The 18 item Mini-Nutritional Assessment tool (<a href="http://www.mna-elderly.com">www.mna-elderly.com</a>) evaluates risk of malnutrition in frail older adults.</li><li>Simplified Nutrition Assessment Questionnaire (<a href="http://www.slu.edu/readstory/newslink/6349">www.slu.edu/readstory/newslink/6349</a>) is a self-reported tool that identifies those at risk of weight loss.</li></ul>
<b>HISTORY</b>	<ul style="list-style-type: none"><li>Careful documentation of weight over time</li><li>Detailed history, including medical, dietary, and psychosocial elements</li><li>Identify access problems, including obtaining, preparing, and/or consuming food.</li></ul>
<b>MEDICATIONS</b>	<ul style="list-style-type: none"><li>Medications that may cause anorexia: digoxin, phenytoin, SSRIs, calcium channel blockers, H<sub>2</sub>-receptor antagonists, proton-pump inhibitors, narcotic and nonsteroidal analgesics, furosemide, potassium supplements, ipratropium bromide, and theophylline.</li><li>Medications may also interfere with taste and smell, reduced availability of specific nutrients, inattention, dysphagia, dysgeusia, xerostomia, and constipation.</li></ul>
<b>PHYSICAL EXAMINATION</b>	<ul style="list-style-type: none"><li>BMI &lt;18.5 kg/m<sup>2</sup> is considered low but must be interpreted in context of individual history.</li><li>Skin-fold and circumference measurements have limited practical clinical use.</li></ul>
<b>DIAGNOSTIC TESTS</b>	<b>Testing based on history and physical examination:</b> <ul style="list-style-type: none"><li>Serum albumin lacks specificity and sensitivity as an indicator of malnutrition.</li><li>Serum prealbumin has a short half-life (48 hours) and better reflects short-term changes in protein status and effectiveness of nutritional interventions and recovery.</li><li>Prealbumin is not a reliable marker of nutritional status in inflammatory conditions.</li><li>Screening for vitamin D deficiency is recommended, because repletion reduces falls and improves physical performance, bone healing, and response to bisphosphonates.</li></ul>

## MANAGEMENT PRINCIPLES

- Age alone does not preclude weight loss treatment, because focus must be a healthful weight to promote improved health, function, and quality of life.
- Although high-calorie supplements increase weight in older adults, there is no evidence of effect on other important clinical outcomes, such as quality of life, mood, functional status or survival.
- Nutritional therapy, supervised by a dietitian, should be considered.
- Discontinue medications that may interfere with eating.
- No indication for supplementation of folic acid, vitamins B<sub>6</sub> and B<sub>12</sub>, homocysteine, vitamin E, zinc, or other micronutrients.
- Vitamin E supplementation does not slow progression of Alzheimer disease or prevent cardiovascular disease and may increase risk of hemorrhagic stroke and risk of heart failure in those with diabetes or vascular disease.
- Some dietary antioxidants can reduce cardiovascular disease and mortality.
- Antioxidants, such as β-carotene, vitamin A, and vitamin E, may increase mortality.
- Antioxidants do not prevent age-related cataracts and macular degeneration.

## NONPHARMACOLOGIC MANAGEMENT

- Cater to food preferences with appealing foods.
- Provide hand and mouth care as needed.
- Provide feeding assistance.
- Avoid excessive salt and sugar.
- Give adequate time for meal.
- Address cultural expectations.
- Avoid therapeutic diets when possible.
- Situate comfortably for eating.
- Place people together for meals to increase sociability.
- Attend to consistency, color, texture, and temperature of food.
- Use herbs and spices to compensate for reduced senses of taste and smell.
- Avoid hard-to-open packages.

## PHARMACOLOGIC MANAGEMENT

- Avoid using prescription appetite stimulants for treatment of anorexia or cachexia in older adults, because there is not adequate evidence for improvement in long-term survival or quality of life; use nonpharmacologic management instead
- All medications are off-label
- Mirtazapine: a serotonin-norepinephrine reuptake inhibitor
  - Little evidence to support its use to promote appetite and weight gain in the absence of depression
  - 7.5–30 mg/d po at bedtime
  - Caution required for dosages of 15–30 mg/d with hepatic or renal insufficiency
- Cyproheptadine: a serotonin and histamine antagonist
  - May cause confusion
  - Strong AGS Beers Criteria warning against its use
  - 2–4 mg po with meals
- Dronabinol: a cannabinoid
  - Systematic reviews have not identified adequate evidence for efficacy and safety.
  - May cause somnolence and dysphoria
  - 2.5 mg twice daily, before lunch and dinner (maximum 20 mg/d)
- Megestrol: a progestin that stimulates appetite
  - Weight gain is primarily fat, no improvement in quality of life or survival
  - Risk of deep-vein thrombosis, fluid retention, edema, and exacerbation of CHF
  - 1 in 12 people on megestrol will have an increase in weight and 1 in 23 will have an adverse event leading to death.
  - Strong AGS Beers Criteria warning against its use

## PROGNOSIS

- 10% weight loss usually represents protein-energy malnutrition.
- 20% loss associated with impaired cell-mediated and humoral immunity.
- Excess loss of lean body mass is associated with poor wound healing, infections, pressure sores, depressed functional ability, and mortality.
- **Mortality rates are lowest for individuals with BMIs between 27 and 29 kg/m<sup>2</sup>.**

## CHOOSING WISELY

- Don't recommend percutaneous feeding tubes in patients with advanced dementia; instead offer oral assisted feeding.
- Avoid using prescription appetite stimulants or high-calorie supplements to treat anorexia or cachexia in older adults; instead, optimize social supports, discontinue medications that may interfere with eating, provide appealing food and feeding assistance, and clarify patient goals and expectations.