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Creative Nutrition: Solutions for Failure-to-Thrive Patients

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Ensure adequate access to food, provide a pleasant dining experience with adequate assistance to eat, and offer favorite foods.

The term "failure to thrive" (FTT) has been used to describe older adults who were once active and are now socially withdrawn, lonely, bored, and depressed. FTT in older adults has been described as "a syndrome manifested by weight loss greater than 5% of baseline, decreased appetite, poor nutrition, and inactivity, often accompanied by dehydration, depressive symptoms, impaired immune function, and low cholesterol levels."¹ It may result from issues such as chronic disease and functional decline, physical and emotional deprivation, poor appetite, poor diet, or medical problems.²⁻⁴ All of these combined can easily lead to inadequate food intake, malnutrition, unintended weight loss, weakness, functional decline, and other complicating factors such as falls, impaired immune response, and poor wound healing.

FTT affects 5% to 35% of community-dwelling older adults and 25% to 40% of nursing home residents. Its prevalence appears to increase with age. Studies indicate that it is associated with decreased immunity and increased rates of infection, incidence of hip fractures, pressure ulcers, surgical mortality, mortality rates, and medical costs.²

FTT is not a normal consequence of aging or chronic disease, and caution should be used in applying the geriatric FTT label. It should not be treated as a diagnosis or a disease or equated with frailty, and it should not signal the withdrawal of efforts to find and treat underlying causes. Instead it should be viewed as an unexpected and significant change in normal health status, a decline in vigor, weight, and function that can affect even the healthiest of older adults. For older patients exhibiting an unintended reduction of food intake, unintended weight loss, decline in the ability to provide self-care, a decline in cognitive function, and a general decline in interest in daily life, the term "failure to thrive" should trigger a thorough evaluation to determine possible reversible underlying causes.³

Identification and Assessment

Because the decline in condition is so gradual, loved ones often fail to notice the subtle changes in health status. If changes are noted, the older adult often denies there is anything wrong, and treatment may be delayed until there is an acute illness or event. Healthcare professionals often realize at the time of assessment related to the acute event that there has been a decline that usually includes poor food and/or fluid intake, unintended weight loss, undernutrition, and inactivity. Later adverse outcomes include protein energy malnutrition, depression, cognitive impairment, and impaired physical function.

A thorough medical evaluation should include a total review of psychosocial, economic, spiritual, and emotional needs and social/environmental factors. Living situation, caregiver ability, potential abuse or neglect, isolation, the financial ability to purchase food and prescriptions, and alcohol and substance abuse can all have dramatic effects on older adults' ability to thrive.⁴ Assessment must also include the evaluation of functional ability, underlying medical problems, and medication interactions; a nutrition assessment; and appropriate laboratory and radiological evaluations individualized to a patient's specific needs.²

Medical conditions associated with FTT can include cancer, congestive heart failure, chronic lung disease, chronic renal insufficiency, chronic steroid use, cirrhosis, cardiovascular accident, depression or other psychological disorders, diabetes, hepatitis, hip or large bone fracture, inflammatory bowel disease, a history of gastrointestinal (GI) surgery, myocardial infarction, recurrent urinary tract infection, recurrent pneumonia, rheumatologic disease (eg, rheumatoid arthritis, lupus), a systemic infection, or tuberculosis.² Dentition, vision, hearing, continence, and GI issues must also be addressed.

A review of medications should include drug-nutrient interactions, drug-drug interactions, polypharmacy, and adverse side effects of medication, which can all have devastating effects on older adults. Medications associated with FTT include anticholinergic drugs, antiepileptic drugs, benzodiazepines, beta-blockers, central alpha-antagonists, diuretics in high potency combinations, glucocorticoids, neuroleptics, opioids, selective serotonin reuptake inhibitors, tricyclic antidepressants, and any combination of more than four prescription medications.²



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Along with an in-depth evaluation of the factors mentioned above, it is imperative to assess four main areas of FTT syndrome: impaired physical function or status, undernutrition or malnutrition including unintended and/or significant weight loss, depression or depressive symptoms, and cognitive impairment or decline.^{2,4}

Impaired Physical Function or Status

Assess a patient's ability to perform activities of daily living (ADLs). The Katz ADL scale, a simple test that can be administered in a physician's office, can assess ability in six different areas: eating, dressing, toileting, transferring, continence, and bathing. Coined the "Up and Go" test, the patient is asked to rise from a chair, walk 10 ft, turn, return to the chair, and sit down. If the patient can easily achieve this in less than 20 seconds, he or she is generally competent to perform basic transfers. If it takes more than 30 seconds to complete the test, the patient is generally in need of more assistance and at higher risk of falling.²

Undernutrition or Malnutrition

One of the most common symptoms of FTT is unintended weight loss that can result in undernutrition or protein energy malnutrition if left untreated. It is important to quickly and accurately identify older adults at risk of malnutrition. There are three validated tools that may be used for nutritional screening: The Mini-Nutritional Assessment Short Form, the Malnutrition Universal Screening Tool, and the Short Nutritional Assessment Questionnaire. These tools can help determine which patients need to be referred to a registered dietitian for a comprehensive nutrition assessment and appropriate nutrition interventions. In the outpatient and home care setting, another commonly used nutrition screening tool is the Determine Your Nutritional Health checklist.

Depression or Depressive Symptoms

Depression is common in FTT, and it may be either a cause or a result of the syndrome. Depression can be a major cause of unintended weight loss, and if left untreated, it is associated with increased morbidity and mortality in FTT patients. The Geriatric Depression Scale is a commonly used tool for assessment of these symptoms.

Cognitive Impairment or Decline

Cognitive impairment can be the result of multiple factors, including abuse or neglect, a lack of support, recent personal loss, medications, chronic disease, malnutrition, electrolyte imbalances, and dehydration. Cognitive status should be evaluated frequently due to potential frequent changes in overall health status and condition.² The Mini-Mental State Examination is the most common and valid screening tool used to assess cognitive disorders.

Treatment

The goal of medical interventions should be to improve overall quality of life and functional abilities. Treatment is best achieved through a team approach: a physician, a nurse, a dietitian, and/or a physical therapist along with a social worker, a mental health professional, and/or a speech pathologist as dictated by individual need.² Easily treatable causes of FTT such as depression or poor nutritional intake should be addressed immediately.

Nutritional status has a significant impact on an elder's ability to recover and rehabilitate from illness, injury, or surgery. Malnourished older adults have diminished muscle strength, which can lead to weakness, decreased independence, and falls. They may recover more slowly from illness or acute episodes or experience unintended weight loss, increased risk of pressure ulcers, poor healing rates, anemia, fatigue, susceptibility to infection due to immune dysfunction, and ultimately increased morbidity and mortality.

Identifying protein energy malnutrition can be difficult. Historically, serum albumin has been used to assess nutrition status, but recent literature does not support this use. Low albumin may be related to the effects of inflammation and/or chronic disease (eg hepatic disease, kidney disease) and does not necessarily correlate with poor nutritional status.^{5,6} However, low serum albumin is associated with lower survival rates and it is important to assess overall nutritional status in individuals with high morbidity risk.⁶

Loss of muscle mass is an indicator of protein-energy malnutrition. Sarcopenia (loss of muscle associated with aging) can exacerbate the difficulties challenging the health of an older adult above and beyond issues related to FTT. Generally, people start losing muscle at about the age of 45 and tend to continue losing muscle at a rate of about 1% per year. This muscle loss leads to decreased strength and ability to perform everyday tasks. In addition, unsteadiness may result in falls. There is some evidence that physical activity and protein intake can help prevent or slow the progression of sarcopenia, according to the second edition of the *Handbook of Clinical Nutrition and Aging*.

Other factors that accelerate loss of muscle mass in older adults include decreased physical activity, testosterone and growth hormone deficiency, possibly mild cytokine excess, and the stress response.⁷ The stress response is a hormonal response (ie, a heightened fight-or-flight response) due to catabolic illness such as wounds, trauma, surgery, or infection that increases energy needs, causes the body to break down proteins and lean body mass (LBM), and can lead to protein energy malnutrition.⁸

LBM makes up 75% of body weight, mostly in the form of muscle, bone, and tendon, and provides the majority of the body's protein. Loss of just 10% of LBM decreases immune response and increases the risk for infection. With an LBM loss of 15% or more, the rate of wound healing decreases and weakness increases. At 30% loss, pressure ulcers may develop and healing response is nonexistent. A 40% LBM loss usually results in death (often due to pneumonia).⁸ Unfortunately, the rate of LBM recovery is much slower during the recovery stage than the rate of loss during the inflammatory stage.

Medical Nutrition Therapy

The goal of medical nutrition therapy should be to improve quality of life, stabilize or reverse unintended weight loss and malnutrition, and treat any identified problems. Common nutritional problems for older adults include an inability to consume adequate calories or protein to meet needs, overly restrictive diets (liberalized diets can help to improve food intake), dysphagia, and depression,

according to a 1995 article in the *Annals of Internal Medicine*. It is important to remember that even if an elder is overweight, he or she may still have a low LBM (ie, sarcopenic obesity).

One of the most important nutrition interventions is to ensure adequate calorie and protein intake. This can be achieved by ensuring adequate access to food, providing a pleasant dining experience with adequate assistance to eat, offering favorite foods, individualizing to the least restrictive diet appropriate, using enhanced or fortified foods, providing oral nutritional supplements, and using appetite stimulants or enteral feeding if appropriate.

Nutrient Needs

General recommendations for calorie needs for older adults are as follows:

- 25 to 35 kcal/kg/day for women and 30 to 40 kcal/kg/day for men for healthy older adult weight maintenance;
- 30 to 35 kcal/kg/day for individuals under stress with pressure ulcers;
- 21 kcal/kg/day for a population that is obese and/or critically ill;
- 28 kcal/kg/day for paraplegics; and
- 23 kcal/kg/day for quadriplegics.⁹⁻¹²

It is important to ensure adequate protein intake to slow sarcopenia, decrease the loss of LBM, and avoid protein energy malnutrition by following these recommendations:

- maintaining 1 to 1.2 g/kg of body weight in nonstressed patients;
- maintaining 1.25 to 1.5 g/kg of body weight for patients with pressure ulcers or who are under stress; and
- maintaining 0.8 g/kg of body weight in patients with chronic renal failure (predialysis).^{9,11,13}

Some older adults need vitamin and/or mineral supplementation. A daily multivitamin/mineral supplement is suggested for most older adults with poor food and/or fluid intake.⁸ Individuals who experience anorexia, food aversions, or loss of appetite may benefit from alternative interventions such as appetite stimulants or enteral feeding if they're in the best interest of the patient and in accordance with goals and desires.

Physical Activity and Nutrition: A Winning Combination

Each year, more than 1.6 million older Americans go to emergency departments for fall-related injuries. Among older adults, falls are the No. 1 cause of fractures, hospital admissions for trauma, loss of independence, and injury deaths, according to the National Institutes of Health (NIH). Inactivity contributes to an increase in body fat and a decrease in muscle mass that, in turn, leads to reduced functional ability. Despite the benefits of physical activity, only 22% of people aged 65 and older reported engaging in regular leisure time physical activity.¹⁴

Nearly all older adults can benefit from resistance and strength training to increase muscle strength, improve functional ability, and prevent further decline. Include the following four components of physical activity for a well-balanced exercise plan:

- Endurance to improve the cardiovascular and circulatory systems (low-impact exercises).
- Strength to reduce sarcopenia, build muscle, and possibly prevent osteoporosis. Strength training can include resistance training three times per week. Tylenol or a nonsteroidal anti-inflammatory agent may be needed prior to exercise to reduce postworkout pain from inflammation.⁸ Alone and in combination with nutritional supplementation, strength training increases strength and functional capacity.¹⁵
- Balance to prevent falls. Balance exercises may include tai chi (improves balance) or something as simple as standing on one leg with eyes closed, though older adults may need to hold on to something while doing this.
- Flexibility to recover from or prevent injuries may help prevent falls (ie, yoga or stretching exercises), according to the NIH.

Nutrition and exercise together have a synergistic effect that helps combat malnutrition, increase strength, and promote well-being. Encourage physical activity and suggest age- and ability-appropriate exercises, including walking and strength training. Refer patients to a physical therapist to assess range of motion, strength, and endurance and to determine the need for assistive devices such as canes, walkers, grab bars, or shower chairs. Determine whether an elder can benefit from continued physical therapy, occupational therapy, or strength training and refer to social services for a home environment assessment as appropriate.

Final Thoughts

Adequate energy and protein are needed to meet needs and support muscle synthesis and repair. Adequate food intake that meets caloric, protein, and nutrient needs combined with regular physical activity and strength training are key interventions that may help combat FTT and preserve and enhance strength. By being aware of each individual's conditions, problems, and concerns related to nutrition and physical activity and working with an interdisciplinary team to address medical and nutritional concerns, you can provide the most appropriate interventions.

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Provider Perspective

- Launch a thorough investigation of older adults who experience decline in vigor, weight, or function.
- Examine older adults' psychosocial, economic, spiritual, and emotional needs as well as social/environmental factors.
- Review medications to identify possible drug-nutrient interactions, drug-drug interactions, polypharmacy, and adverse side effects of medications.
- Identify nutritional deficits and make appropriate diet modifications.
- Encourage exercise to improve endurance, strength, balance, and flexibility.