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The Dwindles & Failure to Thrive

When does an elderly patient have “failure to thrive” and how can it be treated?

The term “failure to thrive” (FTT) originated in pediatric literature in the 1800s. It came about to refer to infants who were apathetic and listless, who had serious nutritional deficiencies, and who displayed physical and emotional deprivation.

FTT can also occur in elderly patients; however, in geriatrics it is not a failure to develop, but a progressive functional decline, otherwise known as “the dwindles.”

What is “the dwindles”?

The dwindles is a syndrome that is characterised by nutritional abnormalities, which lead to chronic immune system activation, a decline in physical and cognitive function, social withdrawal, and no

Practice Pointer

The dwindles IS NOT:

- A normal aspect of aging.
- A typical presentation of dementia.
- An inevitable result of chronic disease.
- Synonymous with the late stages of terminal illness.

obvious explanation for these symptoms. There are four key domains which play a significant role in the development of the dwindles: impaired physical function, malnutrition, depression, and cognitive impairment (Table 1). Other common contributing domains to the dwindles are:

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Table 1

Four Key Domains in Failure to Thrive: A Conceptual Framework

Domain	Contributing Factors
Impaired Physical Function	Neurologic disorders Visual disorders Musculoskeletal disorders Foot problems Environmental obstacles Caregiver ability Comorbid illnesses Drugs
Malnutrition	Changes in smell/taste Denture problems Mouth problems Speech/swallow problems Financial/social problems Drugs
Depression	Bereavement Decreasing socialisation Shrinking social network Depressive history Response to illness(es) Drugs
Cognitive Impairment	Specific causes of dementia Superimposed delirium Reversible causes Impairment Drugs

Adapted from: Sarkisian CA, Lachs MS: Failure to thrive in older adults. *Ann Intern Med* 1996; 124(12):1072-8.

impairments in other contributing domains; decompensated chronic illnesses; new medical illnesses; sensory impairments; chronic pain; social factors; abuse/neglect; and drugs.

What are the signs?

As the contributing factors of the four domains manifest themselves in the patient, a downward spiral effect will begin to take place, thus

leading to the onset of the dwindles.

Some of the signs that the dwindles have begun include: normal changes of aging plus physical, psychological, and social precipitants; anorexia; weight loss; malnutrition; depression; cognitive dysfunction; social withdrawal; isolation; and giving up. If these signs are not recognised, they can lead to the untimely death of the patient.

What are the four domains?

Impaired physical function.

Numerous physical illnesses can lead to impairment in physical function beyond the illness itself. The patient is also likely to experience sensory deprivation (vision/hearing), however, these states are often correctable. Also, disabilities are cumulative over time and may overlap with others. Many of the impairments caused by physical function can be improved with rehabilitation and/or assistive devices.

Malnutrition.

The presence of malnutrition is fundamental to all definitions of FTT. It is prevalent in 30% to 60% of older inpatients. The diagnosis of malnutrition is often missed as the cause of the weight loss is difficult to ascertain and verify (Table 2). Many elderly patients also take medications that can have serious effects on their diet (Table 3).

The consequences of malnutrition include muscle wasting, generalised weakness, fatigue, decreased activity of daily living, altered



Table 2

Predisposition of Malnutrition

There are several age-related factors that predispose the elderly to malnutrition, such as:

- Hyposmia and hypogeusia.
- Decreased “hedonic aspect” of food.
- Decreased gastric compliance, earlier satiety.
- Prolonged bowel transition.
- Decreased caloric requirements due to less activity can lead to an excessive reduction in intake.
- Less sensation of hunger and thirst.
- Food-related hormonal changes may be altered (opioid food system, cholecystokinin, etc.)
- “Cholesterophobia” may lead to selection of relatively calorie-poor foods.

Table 3

Drugs and Malnutrition

Several drugs have physiological side effects, some of which are poorly understood, that can have an impact on a patient’s diet:

Nausea and vomiting can be caused by:

Various antibiotics, nonsteroidal anti-inflammatory drugs, dopamine agonists, opioids, digoxin, and chemotherapy.

Anorexia may be caused by:

Amphetamines, methylxanthines, selective serotonin reuptake inhibitors, decongestants, amantadine, digoxin and gold.

Dysosmia/dysgeusia may be caused by:

Captopril, metformin, gold, iron, metroidazole, chloralhydrate, penicilamine, calcium channel blockers, salbutamol, amiloride, nitroglycerin, lithium, allopurinol, chemotherapy, ofloxacin, clarithromycin and nasal decongestants.

Dry mouth may be caused by:

Anticholinergics, tricyclic antidepressants, phenothiazines, antihistamines, motility agents, anti-nauseants and clonidine.

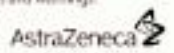
immunity, poorer surgical outcomes, and increased mortality. Malnutrition can be improved with intervention; however, the earlier the better.

Depression. Depression is very common in the elderly, especially high-risk populations (Parkinsonism, post stroke, dementia). It is also commonly under-recognised and under-treated. In fact, statistics show that the highest rate of successful suicide attempts is in older men. Part of the problem is that older patients do not



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always present with the classic features of depression seen in younger patients. Symptoms that present sub-acutely are: low mood, apathy/low energy, weight loss, poor memory/concentration (pseudo-dementia), and decreased socialisation. Depression can be treated successfully with medication, however, it can take one to two months for treatment to take effect. An emission computed tomography should be considered in urgent circumstances.

Cognitive impairment. This is commonly seen in patients with FTT, but with FTT that is not advanced dementia alone. Demented patients are predisposed to delirium (“acute brainfailure”). FTT can occur with any dementing disorder, including the most common ones: Alzheimer’s disease, cortical Lewy body disease, and vascular dementia.

How is it diagnosed?

It is important to look at the common contributing factors when diagnosing the dwindles (Table 4). A thorough history and physical should also be done. The evaluation of the patient must include a review of all drugs, collateral information, and an assessment of function and living environment. Physicians should also ignore the Law of Parsimony.

How is it treated?

There are no well-designed intervention studies to determine the success rate or predictors of treatment. Few good prospective studies determine which patients are at risk. Early intervention, if

possible, is best. The principle of treatment should be to focus on potentially reversible/treatable factors determined from the assessment.

The key to treatment is adequate nutrition. Too often patients are underfed for weeks before aggressive interventions are considered. Begin by assessing which elements of the feeding process are impaired, (*i.e.*, vision, upper extremity, apraxia, mouth, chewing, swallowing, absorption.) Offer the patient well-balanced meals with assistance. A stepped-up approach to feeding can also be considered. This involves nutritional protein and/or energy supplements, possibly



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Table 4

Diagnosing the four key domains

Domain	Approach
Impaired Physical Function	<p>Assess activities of daily living.</p> <p>Assess instrumental activities of daily living (<i>i.e.</i>, banking, transportation, cooking, shopping, using telephone).</p> <p>Use validated performance measures (<i>i.e.</i>, six-minute walk, functional reach, timed get up and go).</p> <p>Ask for help from a physiotherapist and an occupational therapist.</p>
Malnutrition	<p>Physical examination manoeuvres (weight, muscle atrophy, bedside swallow).</p> <p>Subjective global assessment.</p> <p>Laboratory measures (albumin, urea, creatinine, phosphate, cholesterol, lymphocyte count).</p> <p>Calorie counts and weight trends.</p> <p>Ask for help from a dietitian or a speech language pathologist.</p>
Depression	<p>Screen with validated instrument (<i>i.e.</i>, geriatric depression scale or Center for Epidemiological Studies Depression Scale).</p> <p>Get collateral history from family or caregivers.</p> <p>Ask for help from (Geriatric) Psychiatry or Geriatric Medicine.</p>
Cognitive impairment	<p>Screen with validated instrument (<i>i.e.</i>, Folstein Mini-Mental Status Exam and clock-drawing).</p> <p>Rule out superimposed delirium (may screen with Confusion Assessment Method).</p> <p>Rule out reversible causes of dementia.</p> <p>Ask for help from Geriatric Medicine/Psychiatry.</p>

appetite stimulants (although none have been demonstrated to be effective in randomised, controlled trials but many are used), and enteral feeds to supplement or replace intake. Consider parenteral feeds if there is a high potential for reversal of other conditions and non-functioning gut.

FTT or the dwindles is a syndrome with high associated morbidity and mortality. Malnutrition is a key aspect of FTT and its treatment is critical for reversing it. There is a

lack of data on the efficacy of primary prevention, as well as on an optimal treatment strategy. However, with early recognition and intervention, FTT is treatable. CME