

REVIEW ARTICLE

Abnormal Loss of Weight

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Keywords:

Abnormal Weight Loss

Disease Prevention
& Wellness

Abstract: Abnormal weight loss is a frequently occurring condition among adults and is linked to a host of adverse health outcomes, including higher mortality rates, and a number of progressive debilitating illnesses. While this condition commonly presents with a contributing disorder, many patients present with no immediately discernable medical reason to explain their abnormal weight loss. A variety of pharmacologic and nonpharmacologic measures can be undertaken to address the underlying weight loss and to improve nutritional status. Physicians should not assume that weight loss is a natural phenomenon until they have thoroughly reviewed and eliminated other social and pathologic causes.

INTRODUCTION

Abnormal weight loss is an unintentional drop in body weight over time. It occurs in 8% of all adult outpatients and is even more prevalent among elderly individuals, occurring in approximately 30% of all such individuals defined as individuals 65 and older.¹ As a risk factor in elderly patients, even slight weight loss is connected with higher morbidity and mortality rates. While voluntary weight loss among the general adult population is not generally considered problematic, even slight weight loss among elderly individuals is correlated with joint fractures and higher mortality rates.^{2,3} Thus, physicians should stress to their patients the medical benefits of maintaining a healthy body weight throughout adulthood and of taking early preventive measures through proper diet and exercise. Abnormal weight loss is also linked to a higher frequency of admission to institutions, to an elevated risk of in-hospital complications, to a deterioration in the ability to perform activities of daily living, to somatic dysfunction, and to an overall decrease in the quality of life.^{4,5,6} Certain individuals require heightened monitoring for abnormal weight loss, more specifically, those who: (a) are disabled; (b) have a co-existing medical illness; (c) have previously been admitted to an institution; (d) have a cognitive impairment; (e) are smokers, (f) have experienced the loss of a significant other; or (g) already have a low baseline body weight.^{7,8}

MAJOR ETIOLOGIES OF WEIGHT LOSS

Malignancy

When evaluating the potential causes of unintentional weight loss, the physician must consider the possibility of an underlying malignancy, especially if the presenting patient is elderly. A recent study ranked cancer as the most common cause of weight loss, with the

majority of malignancies found to be gastrointestinal in origin in patients who were 65 years or older. While various types of cancers often present with unexplained weight loss, the most likely etiologies are cancers of the lung, lymphoma, prostate, ovarian, and bladder.⁸ A history of tobacco use or smoking should prompt screening for lung cancer. The most common presenting symptoms of lung cancer, in addition to weight loss, include hemoptysis, loss of appetite, thoracic pain, fatigue, and coughing.⁹

Physical findings may include clubbing. In men, complaints of urinary changes, either in frequency or urgency, are strong indicators of prostate hypertrophy and potential malignancy, especially when accompanied by weight loss.¹⁰ In women, complaints of changes in menstrual cycles, abdominal pain, bloating or a feeling of fullness, should prompt the physician to include ovarian cancer in the differential diagnosis.¹¹ The most common indicator of bladder carcinoma is hematuria. However, any complaints about changes in urinary habits, such as urgency, frequency, nocturia, or dysuria, when accompanied by unexplained weight loss, should prompt a workup for a bladder malignancy.¹² Cachexia can be a prominent and isolated exam finding in certain cancers, such as pancreatic cancer. Cancer cachexia is a debilitating and progressive metabolic syndrome, which results from aberrant interactions between host and tumor cells and causes progressive skeletal muscle wasting, fatigue, and weight loss, among other disturbed physiological processes.¹³ The most common presenting symptom in carcinomas of the pancreas is unexplained weight loss, followed by vague epigastric pain and jaundice.¹⁴ If a patient presents with these symptoms, special efforts should be made to avoid a delay in diagnosis and treatment by including pancreatic cancer in the differential until it is ruled out from a clinical standpoint.

Diabetes Mellitus Type II

Diabetes is a state of elevated blood glucose levels from either insufficient insulin secretion, insulin action, or a combination of the two.¹⁵ When examining a patient who has recently experienced un-

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explained weight loss, the physician should include diabetes mellitus at the top of the differential list until it is excluded based on the clinical workup. Typically, diabetes presents with polydipsia, polyuria, and weight loss.^{16,17} Patients who present with any of these symptoms, especially if they are overweight, should have fasting blood glucose testing performed.

Hyperthyroidism & Thyrotoxicosis

Overstimulation of the thyroid gland can be a significant cause of an unexplained drop in weight and may be attributed to multiple etiologies. The most common disease known to cause overstimulation of the thyroid gland is Grave's Disease, an autoimmune condition in which thyroid-stimulating immunoglobulins cause the thyroid gland to produce excess thyroid hormone.¹⁸ Weight loss can be a presenting symptom and may be accompanied by heat intolerance, irritability, insomnia, excessive sweating, diarrhea, palpitations, muscular weakness and irregular menstrual cycles.¹⁹ In patients suspected of having Grave's Disease, a thyroid-stimulating hormone level should be performed.

Age-Related Frailty

Aging is sometimes accompanied by a decline in body mass and weight loss, also referred to as sarcopenia, or the decrease in muscle mass with age.²⁰ Frailty is defined as a condition that has a risk of weakening in well-being and function among older adults. The process of muscle wasting in the elderly often has multiple etiologies and, although the process is not fully understood, the primary etiologies are inactivity and insufficient caloric intake. Sarcopenia is most prevalent in the elderly and affects 5 to 13% of persons aged 60-70 years old.²¹ Although muscle wasting in the geriatric population is to some extent normal, it may lead to frailty, the loss of ambulation, a significant increase in the risk of falling and, eventually, to increased mortality.²² Nutritional supplementation and exercise regimens can be prescribed, either separately or in tandem, to delay or prevent the onset of sarcopenia in elderly patients.²³

Systemic Lupus Erythematosus

The clinical presentation of Systemic Lupus Erythematosus (SLE) is often complicated, involving multi-organ systems, primarily the musculoskeletal, renal, and integumentary systems.²⁴ SLE can also cause malabsorption issues which may manifest themselves in weight loss.^{25,26} Other common presenting symptoms of SLE include fever and fatigue. SLE is more common in women than men, with women of childbearing age being the most at risk for developing the disease.²⁷ The exact cause of SLE remains unclear, but it appears that hormonal, genetic, and environmental factors may contribute to the development of the disease.²⁸

Psychological Considerations in Weight Loss

Anorexia nervosa is a condition characterized by excessive weight loss from self-starvation and extreme exercise strategies.²⁹ Anorexia nervosa is most common in young females, who account for 90-95% of patients diagnosed with the condition.³⁰ This condition can be life-threatening if left untreated. However, specific treatment guidelines are beyond the scope of this paper.

Depression in the community dwelling geriatric population can be as high as 15%.³¹ Sudden weight loss in the elderly population can

be a sign of depression, dementia, or delirium.^{32,33} Weight loss accompanied by changes in mental status and mood should warrant a full neurological and psychological evaluation.

Medications

A table of medications linked to abnormal weight loss can be seen in Table 1.^{34,35}

Other Etiologies

There are also less common etiologies of abnormal weight loss, such as adrenal insufficiency, infectious diseases, heart failure, and chronic vigorous exercise. There are many disease states that can cause unintended weight loss, and this list is certainly not exhaustive. All cases of unintended weight loss should be worked up until the cause has been determined, even after all the causes mentioned in this paper have been ruled out.

DIAGNOSIS & TREATMENT OF WEIGHT LOSS

It is important that physicians learn to identify abnormal weight loss in the clinical context. Many patients who have unintentionally lost more than 5-10% of their body weight over a 6-month period may not notice the weight loss or may erroneously attribute the weight loss to minor changes in their diet or an increase in their physical activity.³⁶ Conditions such as anorexia nervosa, bulimia or other abnormal eating patterns coupled with low self-esteem may also cause some patients to minimize the significance of their weight loss. These conditions may cause patients to consider weight loss the natural and intended result of their premeditated efforts. Interestingly, a majority of individuals who have noticed a decrease in their weight have no medically recorded proof of their weight loss.³⁷ For those individuals, a physician may become aware

TABLE 1:

Drug / Drug Class	Mechanism of inducing weight loss
Allopurinol, ACE inhibitors, Calcium Channel Blockers, L-DOPA, Propranolol, Spironolactone	Altered taste or smell
Anticholinergics, Loop Diuretics, Clonidine	Dry mouth
Anticonvulsants, Appetite suppressants, Wellbutrin, L-DOPA, Metformin, Opioids, Theophylline	Anorexia
Bisphosphonates, Doxycycline, Iron Supplements, NSAIDs, Potassium Supplements	Dysphagia
Amantadine, Digoxin, Dopamine Agonists, Metformin, SSRIs, Tricyclic Antidepressants	Induced nausea and vomiting

of the weight loss by observing changes in clothing size, hearing comments from close friends or relatives, or obtaining weight loss estimates from the patient. By taking a comprehensive patient history, a physician may uncover the cause of the weight loss and determine whether the cause is abnormal in nature or due to some other condition.

Developing a thorough history also allows a physician to identify certain symptoms that warrant further discussion with the patient, including changes in urination or defecation or other changes that may suggest issues with one or more specific organ systems. Such changes are frequently found in almost half of all patients who present with abnormal weight loss.^{38,39,40} While all aging adults should have mental health screenings, it becomes even more important for those patients who present with unintentional or irregular weight loss.⁴¹ Certain outstanding skin conditions, such as palpable masses and lymphadenopathy, also require further investigations, to check for malignancies and other skin conditions. At present, however, there is insufficient research regarding the indicative value of physical examinations with respect to uncovering the causes of weight loss. The most useful non-invasive methods that are currently available to help identify these causes include: measuring serum alkaline phosphatase, bilirubin, lactate dehydrogenase, and performing imaging studies, such as chest radiography and abdominal ultrasound.^{42,43,44,45,46} Certain symptoms which warrant specific investigation into GI tract issues through endoscopy and ultrasound include increased enzyme levels and iron-deficiency anemia. A list of useful diagnostic tests can be found in Table 2.^{47,48,49} In cases where the patient presents with no discernable evidence of an underlying disorder, the physician should begin by evaluating whether the weight loss is caused by undernourishment from insufficient food consumption or energy intake, otherwise known as primary malnutrition. Aging and frail adults are particularly prone to undernourishment, primarily because they tend to consume an insufficient volume of food as opposed to food with low nutritional value (quality of protein, carbohydrate, fat content etc.). Encouraging a diet filled with healthy, nutritious foods should be the primary strategy for combating abnormal weight loss on a long-term basis. Explaining the health benefits of an adequate nutrition regimen to patients is important to encourage them to consume a sufficient volume of food. Unfortunately, a patient's lifestyle and other factors, including poverty, depressed mental health, poor dental care, loss of vision or hearing, and stress, sometimes impede efforts to quickly resolve weight loss issues.

To ensure adequate management and guide the patient on a safe regimen for correcting abnormal weight loss, the physician may consider involving a nutritionist, or mental health professional to contribute to the plan of action, particularly when no clinical explanation for the weight loss has been determined.⁵⁰ In addition, involving a registered dietician may be a useful adjunct. Where appropriate, exercise may be prescribed to stimulate both a larger appetite and an increase in lean muscle mass.⁵¹ Exercises should include strength-resistance training, aerobic-endurance exercises, or both, to achieve desired effects. Encouraging patients to consume supplements, such as mass-gaining shakes, can improve the likelihood of achieving desired results between office visits. Supplements may be taken between meals to avoid disrupting normal hunger cues. Care should be taken to introduce any changes gradually so that patients are not overwhelmed to the point where they

TABLE 2:

Diagnostic Test	Examples
Labs	TSH, ANA, ESR, LDH, Hba1c, fasting glucose, CBC, PSA, Cr, Alkaline Phosphatase, bilirubin
Imaging	Chest X-ray, mammogram, abdominal ultrasound
Procedures	PAP smear, DRE
Invasive Techniques	Colonoscopy, CT scan of abdomen, pelvis, chest with contrast

may abandon all efforts. The use of supplements does raise some questions about the short-term and long term benefits of weight improvement. Weight loss management, over the short-term, has been documented as effective in combatting abnormal weight loss. However, the benefits of weight loss management, over the long-term, have not been conclusively proven.⁵² For example, one review has shown a decrease in mortality rates among frail, older patients who consume protein supplements, regardless of whether or not they experienced abnormal weight loss.⁵³ While there are medications that stimulate appetite minimally in the short-term, they have proven to be inconclusive and perhaps detrimental in the long-term and lie beyond the scope of practice for this articles.¹ Lastly, it can be reasonable to assume that patients who consume too few calories and who experience unintentional weight loss may also be experience vitamin and mineral deficiencies. In these cases, the clinician should encourage foods that are nutrient-dense in addition to vitamin or mineral supplements.⁵² The patients should be advised to eat certain foods known for being good sources of complex carbohydrates, lean protein, and healthy fats/lipids, as well as for being good sources of essential vitamins and minerals.⁵⁴

CONCLUSION

Presenting as an unintentional drop in body weight over a 6-month period, abnormal weight loss is a health condition that may be a symptom of various underlying causes. These causes can range anywhere from side effects of prescription medications to autoimmune diseases, such as Systemic Lupus Erythematosus. In addition, abnormal weight loss can be a symptom of malignancies and metabolic syndromes, such as Diabetes Mellitus Type II and hyperthyroidism. To properly diagnose the cause of abnormal weight loss, physicians should consider a myriad of possibilities, depending on the patient's presenting symptoms, the results of clinical testing, and the patient's medical and social history. Unfortunately, there is no one etiology that can be used to diagnose the causes of abnormal weight loss in all patients and, once diagnosed, the particular course of action adopted should be adapted to the patient. At a minimum, it is recommended that the physician begin with a thorough physical exam, searching for signs of malignancy, hyperthyroidism, or mental health issues. In addition to a thorough history

and physical exam, the physician may also consider performing appropriate diagnostic tests and obtaining blood work as part of his or her investigation into the causes of abnormal weight loss. Once the patient is adequately screened for pathophysiological causes of abnormal weight loss, the clinician can adopt different strategies, such as increasing the frequency and amounts of healthy, nutritious food to correct the weight loss and put the patient back on track for an effective recovery. If these interventions prove unsuccessful, patients can be prescribed exercise therapy to help increase their basal metabolic rate and to improve hunger cues, thereby encouraging the patients to eat more frequent meals of larger volume. Lastly, malnutrition may be addressed by including foods and supplements high in vitamins and minerals.

REFERENCES:

- Subramanian S, Rhodes J. Approach to the Patient with Unintentional Weight Loss. *Yamada's Textbook of Gastroenterology*. 2015:666-675. doi:10.1002/9781118512074.ch37.
- Gaddy H, Holder K. Unintentional Weight Loss in Older Adults. *American Family Physician*. 2014;89(9):718-723.
- Wong C. Involuntary Weight Loss. *Medical Clinics of North America*. 2014;98(3):625-643. doi:10.1016/j.mcna.2014.01.012.
- Baicus C, Rimbasi M, Baicus A, Caraiola S. Cancer and Involuntary Weight Loss: Failure to Validate a Prediction Score. *PLoS ONE*. 2014;9(4):e95286. doi:10.1371/journal.pone.0095286.
- Tylka TL, Annunziato RA, Burgard D, et al. The Weight-Inclusive versus Weight-Normative Approach to Health: Evaluating the Evidence for Prioritizing Well-Being over Weight Loss. *Journal of Obesity* 2014;2014:1-18.
- Loc WS. Novel strategies for managing pancreatic cancer. *World Journal of Gastroenterology WJG* 2014;20(40):14717-14725.
- Carlson C, Merel SE, Yukawa M. Geriatric Syndromes and Geriatric Assessment for the Generalist. *Medical Clinics of North America* 2015;99(2):263-279.
- Mcminn, J., C. Steel, and A. Bowman. "Investigation and Management of Unintentional Weight Loss in Older Adults." *Bmj* 342, no. Mar 29 1 (2011): D1732
- Pastis, N. J. (2013). *The American College of Chest Physicians Lung Cancer Guidelines (3rd Edition)*. Chest, 143(5), 1193-1195.
- Humphrey PA. Cancers of the male reproductive organs. In: *World Cancer Report*, Stewart BW, Wild CP (Eds), World Health Organization, Lyon 2014
- Siegel, R., Naishadham, D., & Jemal, A. (2013). Cancer statistics, 2013. *CA: A Cancer Journal for Clinicians*, 63(1), 11-30.
- Strope, Seth A., and John L. Gore. "Bladder Cancer." *Diagnosis and Clinical Management Bladder Cancer*, 2015, 395-401.
- Ezeoke, Chukwuemeka Charles, and John E. Morley. "Pathophysiology of Anorexia in the Cancer Cachexia Syndrome." *Journal of Cachexia, Sarcopenia and Muscle* 6, no. 4 (2015): 287-302.
- Hijioka, S., & Yamao, K. (2015). Clinical, Laboratory, and Radiologic Presentation of Pancreatic Cancer. *Diagnosis and Management Pancreatic Cancer, Cystic Neoplasms and Endocrine Tumors*, 23-28.
- Chung, S., Azar, K. M., Baek, M., Lauderdale, D. S., & Palaniappan, L. P. (2014). Reconsidering the Age Thresholds for Type II Diabetes Screening in the U.S. *American Journal of Preventive Medicine*, 47(4), 375-381.
- Leahy, J. (2008). Impaired Fasting Glucose and Impaired Glucose Tolerance: Implications for care. *Yearbook of Medicine*, 2008, 498-501.
- Nyenwe, E. A., Jerkins, T. W., Umpierrez, G. E., & Kitabchi, A. E. (2011). Management of type 2 diabetes: Evolving strategies for the treatment of patients with type 2 diabetes. *Metabolism*, 60(1), 1-23.
- Girgis, C. M., Champion, B. L., & Wall, J. R. (2011). Current concepts in Graves' disease. *Therapeutic Advances in Endocrinology and Metabolism*, 2(3), 135-144.
- Ross, Douglas S., et al. (2016). 2016 American Thyroid Association guidelines for diagnosis and management of hyperthyroidism and other causes of thyrotoxicosis. *Thyroid: The Journal of the American Medical Association*, 26(10).
- Kalyani, R. R., Corriere, M., & Ferrucci, L. (2014). Age-related and disease-related muscle loss: The effect of diabetes, obesity, and other diseases. *The Lancet Diabetes & Endocrinology*, 2(10), 819-829.
- Morley, J. E. (2012). Sarcopenia in the elderly. *Family Practice*, 29(Suppl 1), 144-148.
- Beaudart, C., Rizzoli, R., Bruyère, O., Reginster, J., & Biver, E. (2014). Sarcopenia: Burden and challenges for public health. *Arch Public Health Archives of Public Health*, 72(1), 45.
- Sumukadas, D. (2010). Optimal management of sarcopenia. *CIA Clinical Interventions in Aging*, 217.
- Yu, Cong, Eric Gershwin, and Christopher Chang (2014). Diagnostic criteria for systemic lupus erythematosus: a critical review. *Journal of Autoimmunity*, 48: 10-13.
- Tian, X. (2010). Gastrointestinal involvement in systemic lupus erythematosus: Insight into pathogenesis, diagnosis and treatment. *World Journal of Gastroenterology WJG*, 16(24), 2971.
- Kalman, R. S., & Wolf, J. L. (2012). Gastrointestinal Manifestations of Systemic Lupus Erythematosus. *Lupus Erythematosus*, 153-168
- Danchenko, N., Satia, J., & Anthony, M. (2006). Epidemiology of systemic lupus erythematosus: A comparison of worldwide disease burden. *Lupus Lupus*, 15(5), 308-318.
- Perl, A. (2009). Pathogenic mechanisms in systemic lupus erythematosus. *Autoimmunity*, 43(1), 1-6.
- Attia, E. (2010). Anorexia Nervosa: Current Status and Future Directions. *Annual Review of Medicine Annu. Rev. Med.*, 61(1), 425-435.
- Talbott, J. (2009). Epidemiology and Course of Anorexia Nervosa in the Community. *Yearbook of Psychiatry and Applied Mental Health*, 2009, 131-132.
- Fiske, A., Wetherell, J. L., & Gatz, M. (2009). Depression in Older Adults. *Annual Review of Clinical Psychology Annu. Rev. Clin. Psychol.*, 5(1), 363-389.
- Sharman, H., Rathore, R., & Sutton, C. (2015). Management Of Elderly Patients With Unintentional Weight Loss In Secondary Care. *Age and Ageing*, 44(Suppl 2).
- Hunter JM, Lee HJ, Dettrick A, Tan C. Collagenous enterocolitis and maturity onset type 1 diabetes manifesting as uraemia, malabsorption and extreme weight loss. *BMJ Case Reports* 2014;2014(jul23 1).
- Alibhai SM, Greenwood C, Payette H. An approach to the management of unintentional weight loss in elderly people. *CMAJ*. 2005;172(6):773-780
- Rupp, John R., "The Relationships Among BMI, Waist Circumference, Weight Loss and Health Indicators" (2015). *Theses and Dissertations--Dietetics and Human Nutrition*. Paper 39.
- Rueda-Clausen CF, Ogunleye AA, Sharma AM. Health Benefits of Long-Term Weight-Loss Maintenance. *Annual Review of Nutrition* 2015;35(1):475-516.
- Clegg A, Young J, Iliffe S, Rikkert MO, Rockwood K. Frailty in elderly people. *The Lancet* 2013;381(9868):752-762.
- Kramer CK. Weight Loss Is a Useful Therapeutic Objective. *Canadian Journal of Cardiology* 2015;31(2):211-215.

39. Cresci G. Nutrition Support for the Critically Ill Patient: a Guide to Practice. 2nd ed. Boca Raton: Taylor & Francis; 2015.
40. Compston JE, Wyman A, Fitzgerald G, et al. Increase in Fracture Risk Following Unintentional Weight Loss in Postmenopausal Women: The Global Longitudinal Study of Osteoporosis in Women. *Journal of Bone and Mineral Research* 2016.
41. DiMaria-Ghalili, RA. Integrating Nutrition in the Comprehensive Geriatric Assessment. *Nutr Clin Pract.* 2014;29(4): 420-427
42. Imhoff J. Preventing Weight Loss in the Elderly - Nutrition Care Systems. *Nutrition Care Systems* 2015. <http://www.nutritioncaresystems.com/preventing-weight-loss-in-the-elderly/>. Accessed March 1, 2016.
43. Køster-Rasmussen R, Simonsen MK, Siersma V, Henriksen JE, Heitmann BL, Olivarius NDF. Intentional Weight Loss and Longevity in Overweight Patients with Type 2 Diabetes: A Population-Based Cohort Study. *PLoS ONE* 2016;11(1).
44. Nakamura M, Ojima T, Nakade M, et al. Poor Oral Health and Diet in Relation to Weight Loss, Stable Underweight, and Obesity in Community-Dwelling Older Adults: A Cross-Sectional Study From the JAGES 2010 Project. *Journal of Epidemiology* 2016.
45. Wilson P. Physical Activity and Dietary Determinants of Weight Loss Success in the US General Population. *American Journal of Public Health* 2016;106(2):321-326.
46. Lannering C, Bravell ME, Midlöv P, Östgren C-J, Mölstad S. Factors related to falls, weight-loss and pressure ulcers - more insight in risk assessment among nursing home residents. *Journal of Clinical Nursing* 2016;25(7-8):940-950.
47. Isenring E, Bauer J, Banks M, Miller M. Managing malnutrition: Identifying and treating unintentional weight loss in adults. *Medicine Today* 2012;13(3):67-72.
48. Thirunavukarasu P, Sanghera S, Singla S, Attwood K, Nurkin S. Pre-operative unintentional weight loss as a risk factor for surgical outcomes after elective surgery in patients with disseminated cancer. *International Journal of Surgery* 2015;18:7-13.
49. Johnson AR. Epigenetics, Nutrition, and Cancer. *Annual Review of Nutrition* 2016:127-143.
50. Parsons EL, Stratton RJ, Cawood AL, Smith TR, Elia M. Oral nutritional supplements in a randomised trial are more effective than dietary advice at improving quality of life in malnourished care home residents. *Clinical Nutrition* 2016.
51. Biesalski HK, Tinz J. Multivitamin/mineral supplements: rationale and safety - A systematic review. *Nutrition* 2016.
52. Lee JLC, Leong LP, Lim SL. Nutrition intervention approaches to reduce malnutrition in oncology patients: a systematic review. *Support Care Cancer Supportive Care in Cancer* 2015;24(1):469-480.
53. Lutz CA, Przytulski KR. *Nutrition & Diet Therapy*. 6th ed. Philadelphia: F.A. Davis Co.; 2015.
54. Huffman GB. *American Family Physician*. Evaluating and treating unintentional weight loss in the elderly. 2002

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