Episode 65: Loss of Weight

Intro:

Here's a case to highlight some key points along the way. So let's start there!

Case:

- Mrs. Lucy LaPounds is an 86-year-old female patient of your family medicine clinic.
- You get a call from her daughter who tells you that her mom hasn't been herself lately. She has been skipping her weekly Bingo with her friends at the Legion. And her daughter says, "Doc, her clothes are hangin' right off her." She can't tell you for sure how much weight she has lost as they don't have a scale. She hasn't been as chatty as usual and isn't answering phone calls. Can you help her?

Objective 1: Pursue an underlying cause in a patient with unexplained weight loss through history, physical examination (including weight), and appropriate investigations

Define weight loss / Quantify

So how do we even define what weight loss is? As physicians, we should be concerned when a patient presents with an unintentional or unexplained weight loss of more than 5 kg or a greater than 5% decrease in weight from their baseline over a less than 6-month period.

> It is important to note that there is no officially agreed upon definition of problematic weight loss, however this is a good general guide.

Mrs. Lucy LaPounds has lost 14 lbs over the last 4 months, which should set off alarm bells for you!

Underlying Causes

The causes of weight loss can typically be broken down into 3 different categories: (1) Decreased energy intake, (2) increased energy expenditure and (3) increased nutrient loss.

- Decreased Energy Intake
  - A large cohort study conducted in Europe showed that the most common independent factor associated with unexplained weight loss is related to food intake.
  - So what might cause someone to have a decreased intake of energy? This is definitely the broadest etiologic category.
  - Decreased appetite is associated with a wide variety of conditions and is a side effect of many medications.
  - Malignancy, HIV, and many chronic conditions like congestive heart failure and COPD can result in decreased energy intake.
  - It is also important to consider endocrine and gastrointestinal conditions in this category, such as adrenal insufficiency, hypercalcemia, diabetes, dysphagia, abdominal pain, and nausea.
  - Mental health concerns can often be overlooked in the etiology of weight loss. It is important to consider psychiatric conditions, such as depression, bipolar disorder, dementia and even bereavement when considering the cause of weight loss.
  - Finally, drugs such as alcohol, nicotine, opiates, cocaine, and amphetamines, can all contribute to decreased energy intake.
- Increased Energy Expenditure.
  - The next means by which someone may experience weight loss is through increased energy expenditure. This would include conditions such as hyperthyroidism, pheochromocytoma, malignancy, infection, and other chronic illnesses.
- Increased Nutrient Loss
  - Finally, we have to consider conditions that result in increased nutrient loss. The most common conditions are diarrhea and vomiting; however, uncontrolled diabetes, malabsorption, and fistula tract drainage can also result in a depletion of nutrients.

A very helpful mnemonic for potentially modifiable weight loss causes is.
STOPWEIGHTLOSS

- **S**ide effects of medications
- **T**reatment effects (e.g., chemotherapy, radiation therapy, dialysis)
- **O**ther Diagnoses (e.g., malignancy, CHF, COPD, renal failure and neurological conditions)
- **P**ain - Inadequate control
- **W**andering/repetitive behaviors of dementia or psychiatric disease
- **E**motional or psychological problems (e.g., anxiety, MDD, delusion)
- **I**mpaired cognition (dementia, delirium) or function (unable to feed oneself)
- **GI** (e.g. malabsorption, reflux)
- **H**yperthyroidism, hypothyroidism, hyperparathyroidism, or hypoadrenalism
- **T**aste and texture of food (restrictive diets)
- **L**oss of appetite or early satiety
- **O**ral Health
- **S**wallowing disorders – both mechanical and motility related
- **S**ocial Factors (e.g., isolation, poverty, poor access to food).

Red Flags

- As part of any assessment, it is important to screen for any red-flag symptoms.
- For weight loss, it is essential that we determine whether the weight loss was involuntary, as well as ask about B symptoms such as fevers, chills, and night sweats.
- The presence of any of these symptoms indicates a severe underlying condition, such as a malignancy, and warrants a very prompt investigation.

- Additionally, if a patient presents to your clinic with unstable vitals in combination with weight loss, they should seek care at the nearest emergency department.

Return to Case:

Your history for Mrs. Lucy LaPounds is pretty unremarkable. She has a negative review of systems and mood screens when you give her a questionnaire to fill out. She denies a previous history of weight fluctuations but also acknowledges she doesn't pay much attention to her weight usually. She cannot recall any recent changes on prompting. She's not her usual talkative self, mostly saying yes and no answers. What else should we get into in our history?

History for Weight Loss

- The differential of unexplained weight loss is exceptionally broad.
- It is a non-specific symptom that can be attributed to an almost endless number of conditions.
- Proper investigation is undeniably important, and like any presentation, this starts with a thorough history.
- First, we must consider whether the weight loss was voluntary or involuntary.
    - A voluntary weight loss may prompt you to probe for signs of disordered eating, such as concerns over body image, a fear of weight gain, or a binge/purge cycle. Please listen to the excellent episode on eating disorders for more information!
- Next, it is essential to ask about any previous fluctuations in weight.
    - Has the patient experienced this in the past?
    - If so, what were the circumstances, and how long did it last?
    - While it shouldn't rule out other diagnoses, knowing if a patient has experienced weight loss in the past can help guide your investigations and narrow your differential.
- It is especially important when treating the elderly population that we also consider psychosocial factors such as cognitive impairment, limited financial or social supports, functional decline related to frailty, and oral health issues. It's important to remember that a good history also includes a thorough social history !
- Finally, it is important to inquire about other possible contributing factors such as appetite, medications, substance use, and travel. Once this general history is complete, you will use what you find to help narrow down your differential diagnosis, which may prompt a more focused history.

Let's jump back in and see how Mrs. Lucy LaPounds is doing:

You take her to your clinic's scales to get her height and weight. She is 5'5'' and weighs 142 lbs.

You pull out your trusty BMI calculator and find her BMI is 23.6. Great! She has a normal BMI; no worries!! But your spidey senses start tingling, and because you are a very thorough family doctor, you look back at her records and see that 4 months ago, when she was visiting your clinic, she weighed 156 lbs.

Are we worried about this? What else should we look into on our physical exam?

<u>Physical Exam for Weight Loss</u>

- Now that we have our history, next up is our physical exam. We have already weighed our patient and calculated her BMI, so what's next?
- A set of vitals is always a good first step! As we talked about in our red flags section, a vitally unstable patient needs to be seen emergently, so best to do this right away.
- Throughout your interaction, you should always be thinking about your mental status exam as well. How does the patient seem to you? Are they alert and coherent? How is their affect and mood? You can learn so much about a patient just by observing them!
- Beyond this, you should let your history and differential diagnosis guide your exam.
    - Are you worried about malignancy? You may want to consider a breast exam, DRE, or palpate for lymphadenopathy.
    - Do they have signs of hyperthyroidism such as tachycardia, proptosis, new onset atrial fibrillation or hyperreflexia
    - Make sure you look at their skin. Are they pale, hyperpigmented? Do they have jaundice? Is there any decrease in axillary or pubic hair?
- The list of conditions associated with weight loss is endless, so a thorough head-to-toe physical exam is needed!

<u>BMI:</u>

Let's take a quick second to talk about BMI.

- Just as a review, BMI is broken down into the following categories

- <18.5 is considered underweight
- 18.5 - 24.9 is the “normal range.”
- 25 - 29.9 is overweight
- 30-34.9 is obese
- >35 is extremely obese

It’s important that we remember that BMI doesn’t always give us the full story. BMI can either underestimate or overestimate health concerns depending on the patient. For example, very muscular adults may have a very low percentage of body fat, but because of the large amount of muscle tissue, they may actually have a BMI that puts them in the overweight or obese category.

We also actually have little research about using BMI in adults over the age of 65. In the research Savannah and I conducted for this podcast we came across an article called “BMI and all-cause mortality in older adults: a meta-analysis” by Winter et al.

Researchers found that there is actually a U-shaped relationship between BMI and mortality when considering a population over 65. This means that mortality rates are higher at both the lower and higher end of the BMI spectrum. You can find this diagram in the show notes!

A BMI range of around 27 was actually found to have the lowest rates of mortality. It's not until we move into a BMI of 37, which would be well into the extremely obese category, that we see any significant increase in mortality.

When we look at the other side of the U, mortality rates increased much quicker with lower BMIs. When BMI reaches 20 or below, mortality rates actually increase by 28%!

This study shows that being underweight has a higher risk of mortality for older populations than being overweight!

So what’s the takeaway? Unintended weight loss needs to be assessed and rectified as quickly as possible!

In an elderly patient, weight loss often means a loss of muscle which can have a huge impact, including increased fall risk, decreased ability to do daily tasks like dressing or cooking, and decreased independence.

Because of this it is always important to consider sarcopenia as part of your differential diagnosis. Make sure to look for signs of muscle loss like temporal or hypothenar wasting. Patients over 65 who lose weight generally lose muscle first, not fat!

Diagnostic Testing for Weight Loss

Finally, let's talk about our work-up.

- Diagnostic testing will largely depend on any pertinent positives that come up from your history.
- A good basic work-up includes CBC, LBC, extended lytes, fasting blood glucose, TSH, and LFTs. Your clinical picture will help determine if you need to do any imaging or more specific labs.
- Screening questionnaires would be helpful if there are any concerns for eating disorders, psychiatric conditions, or an MMSE/MOCA/functional assessment for dementia / cognitive impairment.
- The big fear with unexplained weight loss is, of course, malignancy, so ensuring cancer screening is up to date is essential (e.g., FOBT, mammos, paps)!

Back to Case: Your basic blood work for Mrs. Lucy LaPounds is unremarkable. She is UTD for paps, FOBT, and mammograms. You find no physical exam findings that warrant imaging. Hmmm… What's going on?

Objective 2: Maintain an ongoing record of patients' weights so as to accurately determine when true weight loss has occurred

The main point of this objective is to emphasize the need to trend patients' weights as you see them. Documentation of weight is so important to allow you to have quantitative data to go by. For example, our kiddos need ongoing weights recorded to trend their growth curves. Trending their weight allows us to determine their percentiles and if they are making their growth milestones. It can also be useful to have weights for weight-based medications!

Taking the time to weigh and document gives you objective numbers to go off and is way more reliable than self-reporting. It also can help solve the mystery of the timeline for unexplained weight loss.

Some rapid-fire questions to screen for weight loss include:

- Asking about clothes and if fitting looser
- Asking about belts / what notch they buckle
- Asking about watches or rings being looser

- Asking about caloric intake / what someone eats in a day

To accurately weigh patients, you should go by your scales in a clinic/health care setting. Be sensitive to those who may not want to know the number on the scale, for example, those with eating disorders.

Objective 3: In patients with persistent weight loss of undiagnosed cause, follow up and reevaluate in a timely manner in order to decide whether anything needs to be done

Follow-up

- Close follow-up with serial weights is imperative.
- The Canadian Geriatric Guidelines recommend following up at least every 3 months.
- The Canadian Medical Association Journal has a great table that shows their approach to the management of weight loss that we have attached in the show notes! Definitely worth checking out!

Treatment for unexplained weight loss is broad and not well studied. It can be split into non-pharmacological and pharmacological. Always take an individualized approach to treatment depending on their risk factors and your findings on history and physical exam.

Consulting your interprofessional colleagues, such as a dietitian, SLP, SW, and OT, may be helpful in assessing a pt's function, and they may be able to do a more formal assessment. A vision or hearing assessment may be warranted. For our more complex elderly patients, a comprehensive geriatrics assessment may be warranted.

Pharmacologic treatment of weight loss is cause based. It is important to review your patient's medications as some may contribute to weight loss. Some examples include: ACEi, ETOH, anticholinergics, benzos, CCBs, diuretics, metformin, SSRIs, Statins, and the list goes on.

For those who are malnourished, education on multivitamins may be beneficial. For patient's whose nutrition status is severe enough to require hospitalization it is important to always remember to consider refeeding syndrome. Once again listen to the episode on eating disorders for a more in depth look at this!

Back to Case:

Finally, we are back to Mrs. Lucy LaPounds. You have done a full work-up, and everything has come back normal! Great, but you still don't know why Lucy is losing la pounds. You

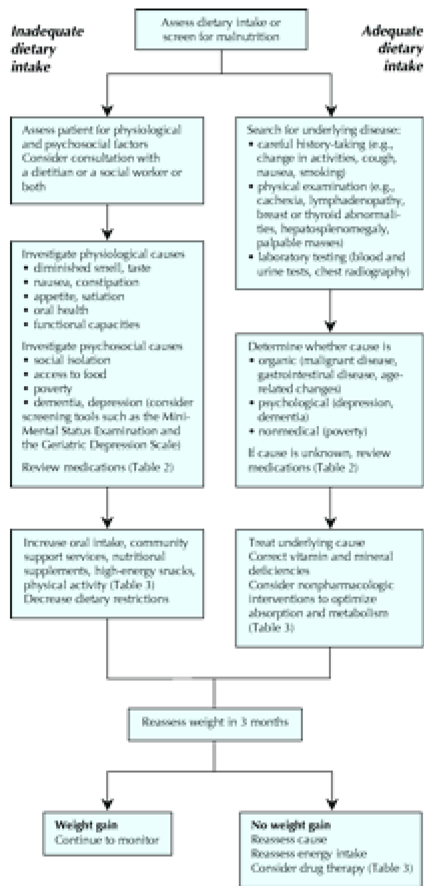
are wracking your brain, and in one last ditch effort, you bring her back to clinic to ask her a few more questions.

Finally, in a lispy voice, she confesses to you that 3 months ago, she went on a wild Bingo Retreat to Goobies (she even shows you her picture with the big moose at the Irving gas station) and that she lost her dentures while she was away.

Since then, she has been mostly living off tea and toast! She was embarrassed and didn't want to mention it to you before. You help Lucy arrange a new pair of dentures with her denturist, and presto, she starts gaining weight again! Lucy is lucky, though; most cases don't have such a quick fix.

Resources:

https://www.cmaj.ca/content/172/6/773



https://www.canada.ca/en/health-canada/services/food-nutrition/healthy-eating/healthy-weights/canadian-guidelines-body-weight-classification-adults/questions-answers-public.html

https://www.merckmanuals.com/en-ca/professional/special-subjects/nonspecific-symptoms/involuntary-weight-loss

https://www.cfp.ca/content/65/10/723

https://ccfpprep.com/2015/03/17/loss-of-weight-uptodate/

https://static1.squarespace.com/static/63599251a953f80dd1922762/t/636bd1478993d72fdf9ac199/1668010311762/1_Jayna+Holroyd++Article+%28Formatted-Final%29.pdf

**From the website: https://thegeriatricdietitian.com/bmi-in-the-elderly/

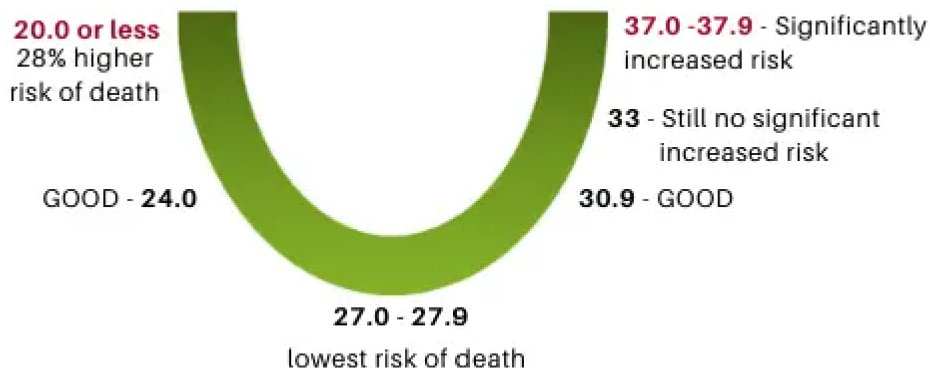
Article they referenced "BMI and all-cause mortality in older adults: a meta-analysis" https://www.sciencedirect.com/science/article/pii/S0002916523050244?via%3Dihub

- Page of CFPC Family Practice Notebook

[Unintended weight loss in the elderly living at home: the aged in Home Care Project (AdHOC) - PubMed (nih.gov)](https://pubmed.ncbi.nlm.nih.gov/18165839/)

BMI & Risk of Death in Adults Age 65 and Over

Winter, et al. BMI and All-Cause Mortality in Older Adults: A Meta-Analysis. 2014.



[GM1]For the nerds who like numbers: large cohort study (n = 4010) in Europe (11 cities): the most common independent factors associated with unexplained weight loss are those related to food intake. Specifically, they are eating less than one meal per day (odds ratio [OR] 4.2, 95% confidence interval [CI] 2.8–6.4), eating less overall (OR 2.8, 95% CI 1.8–4.4), reduced appetite (OR 2.5, 95% CI 1.9–3.4), severe malnutrition (OR 7.1, 95% CI 4.2–11.9) and problems swallowing food (OR 2.8, 95% CI 1.8–4.4). Other factors were flare-ups of chronic diseases (OR 1.5, 95% CI 1.1–2.1), hospital admission in the last 90 days (OR 2.1, 95% CI 1.6–2.7), constipation (OR 1.9, 95% CI 1.3–2.7), falls (OR 1.5, 95% CI 1.2–1.9), pressure ulcers (OR 1.5, 95% CI 1.2–1.9) and daily pain (OR 1.3, 95% CI 1.0–1.6)

REF: https://pubmed.ncbi.nlm.nih.gov/18165839/