INTEGRATING NUTRITION STRATEGIES WITH GLP-1 RECEPTOR AGONIST THERAPY

Presented by Claire Julsing Strydom RD (SA)

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JAMA

World Health Organization Guideline on the Use and Indications of Glucagon-Like Peptide-1 Therapies for the Treatment of Obesity in Adults

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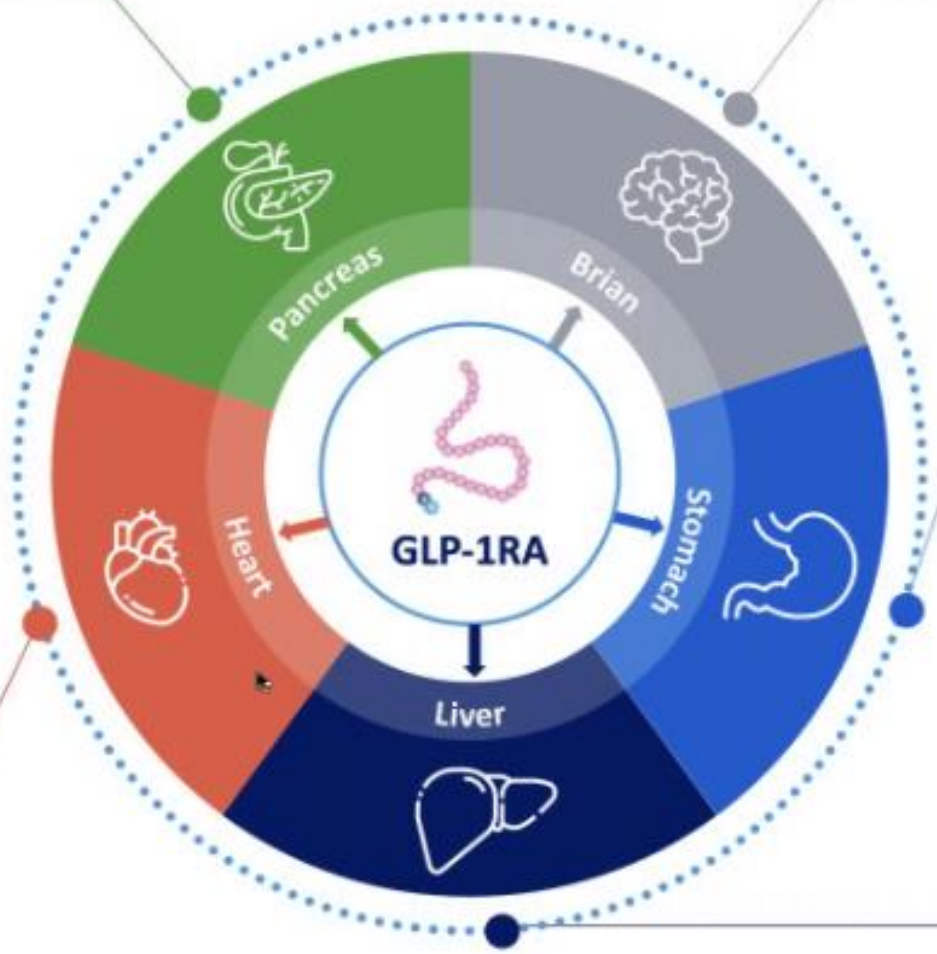
Burden of Obesity currently stands at over 1 billion people & is projected to rise to 2 billion by 2050

Toward a New Obesity Management Ecosystem

GLP-1 therapies mark more than a scientific breakthrough. They represent a new chapter in the gradual conceptual shift in how society approaches obesity—from a "lifestyle condition" to a complex, preventable, and treatable chronic disease. This promise of effective treatment can catalyze the broader transformation needed to build an integrated ecosystem that redefines health promotion, disease prevention, and care with a focus on equity.

Glucagon-like peptide-1 receptor agonist (GLP-1 RA) – Multifactorial effects



Pancreas

- ↑ Beta-cell function[1]
- ↓ Beta-cell apoptosis[1]
- ↑ Insulin biosynthesis[1]
- ↑ Glucose-dependent insulin secretion[1]
- ↓ Glucose-dependent glucagon secretion[1]

Brain

- ↓ Body weight[5]
- ↓ Food intake[6]
- ↑ Satiety[7,8]

Stomach

- ↓ Gastric emptying[9]

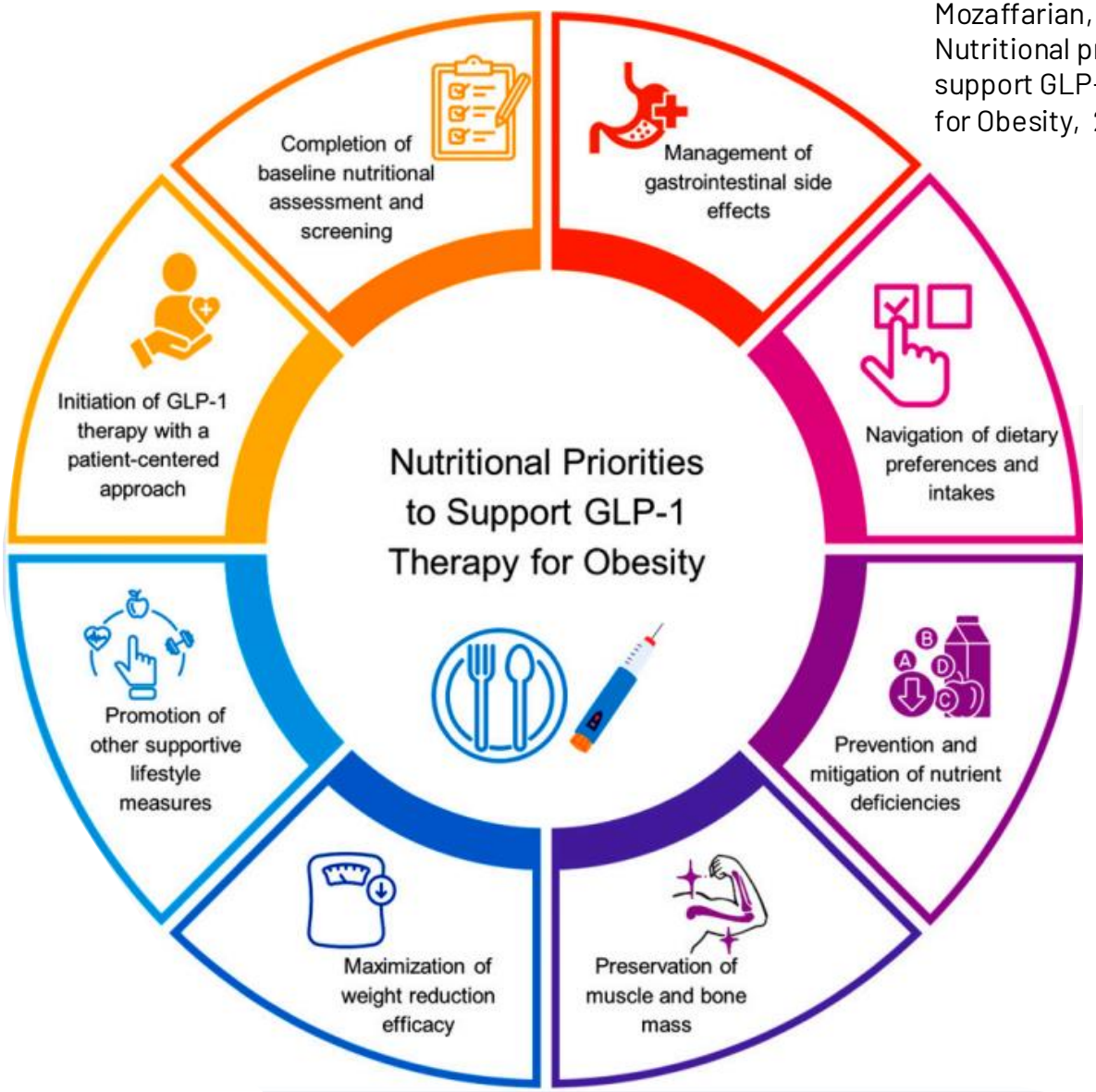
Liver

- ↓ Endogenous glucose production[10]
- ↑ Hepatic insulin sensitivity[10]
- ↓ *De novo* lipogenesis[10]
- ↓ Lipotoxicity[10]
- ↓ Steatosis[11]

Heart

- ↓ Cardiovascular risk[2]
- ↓ Fatty acid metabolism[3]
- ↑ Cardiac function[3]
- ↓ Systolic blood pressure[3]
- ↓ Inflammation[4]

Nutrition Priorities to support GLP 1 Therapy for Obesity



Mozaffarian, D, et al., Nutritional priorities to support GLP-1 therapy for Obesity, 2025

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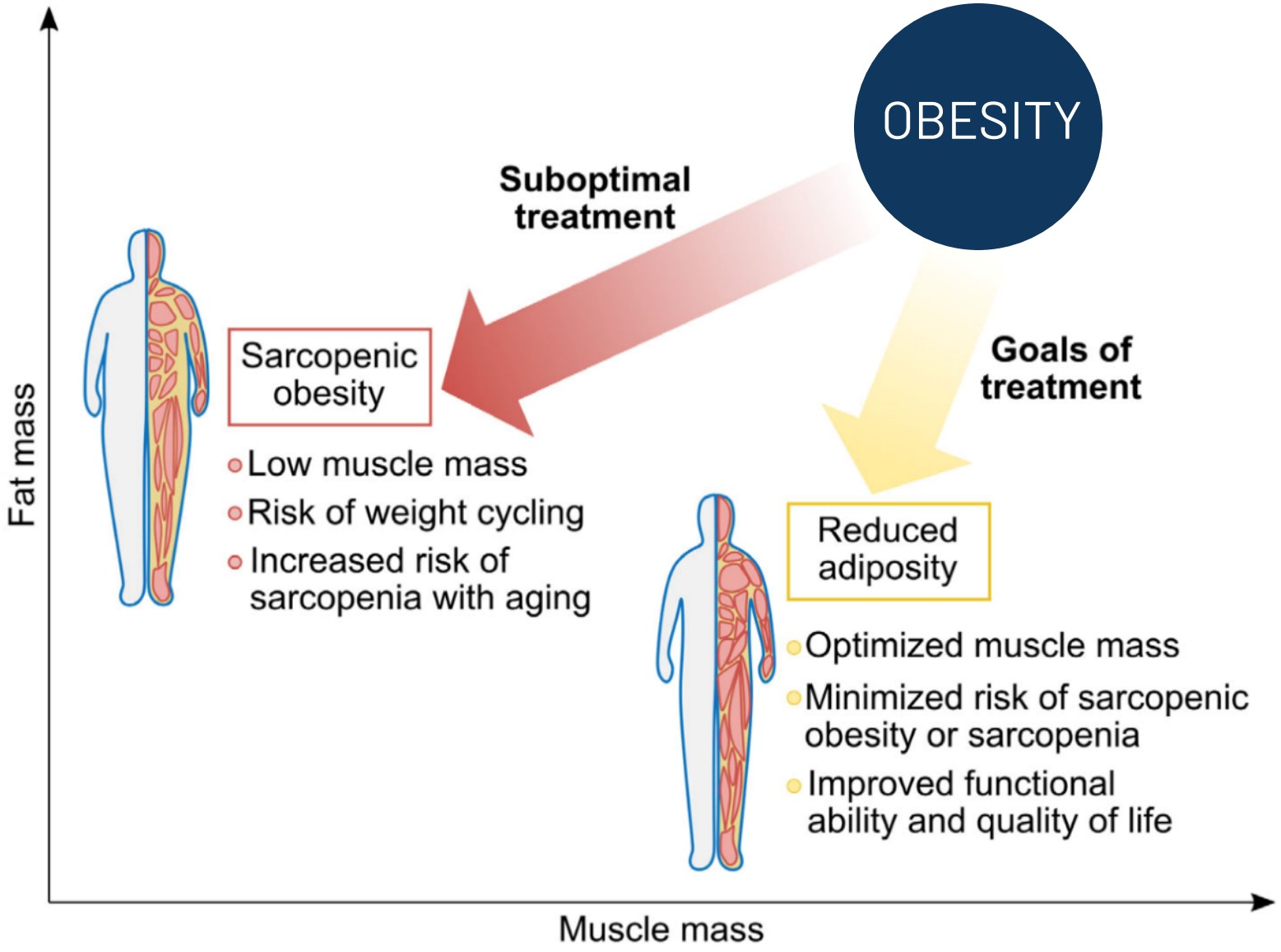
Muscle-related goals of obesity treatment & muscle-related complications of suboptimal treatment.



Mechanick, J, et al.,Strategies for minimizing muscle loss during the use of incretin-mimetic drugs, 2024

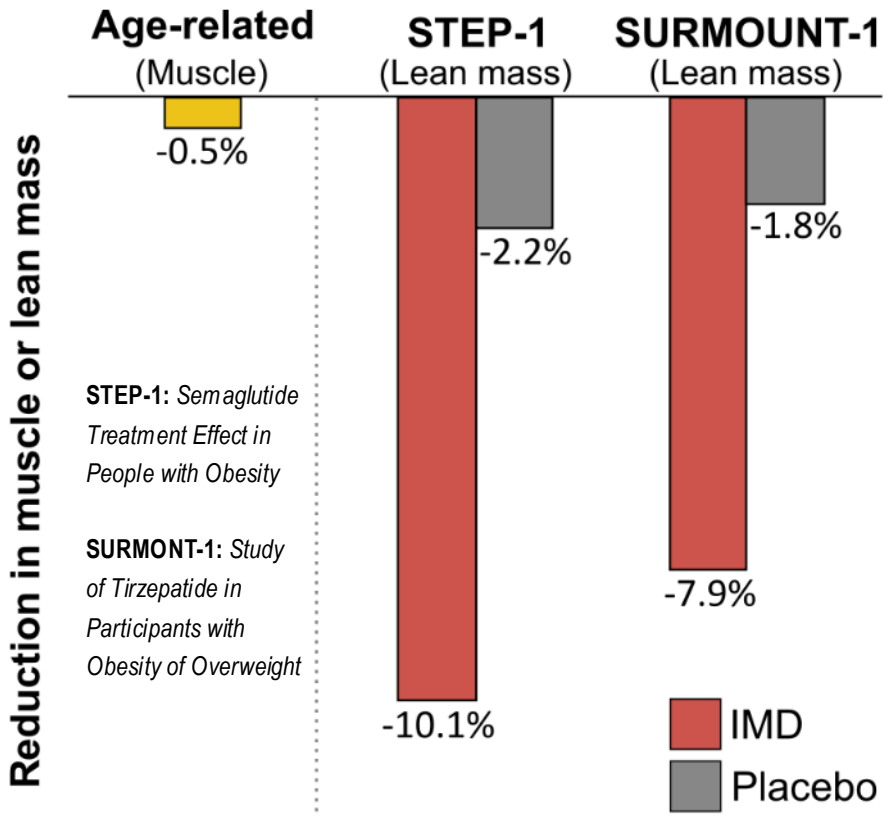
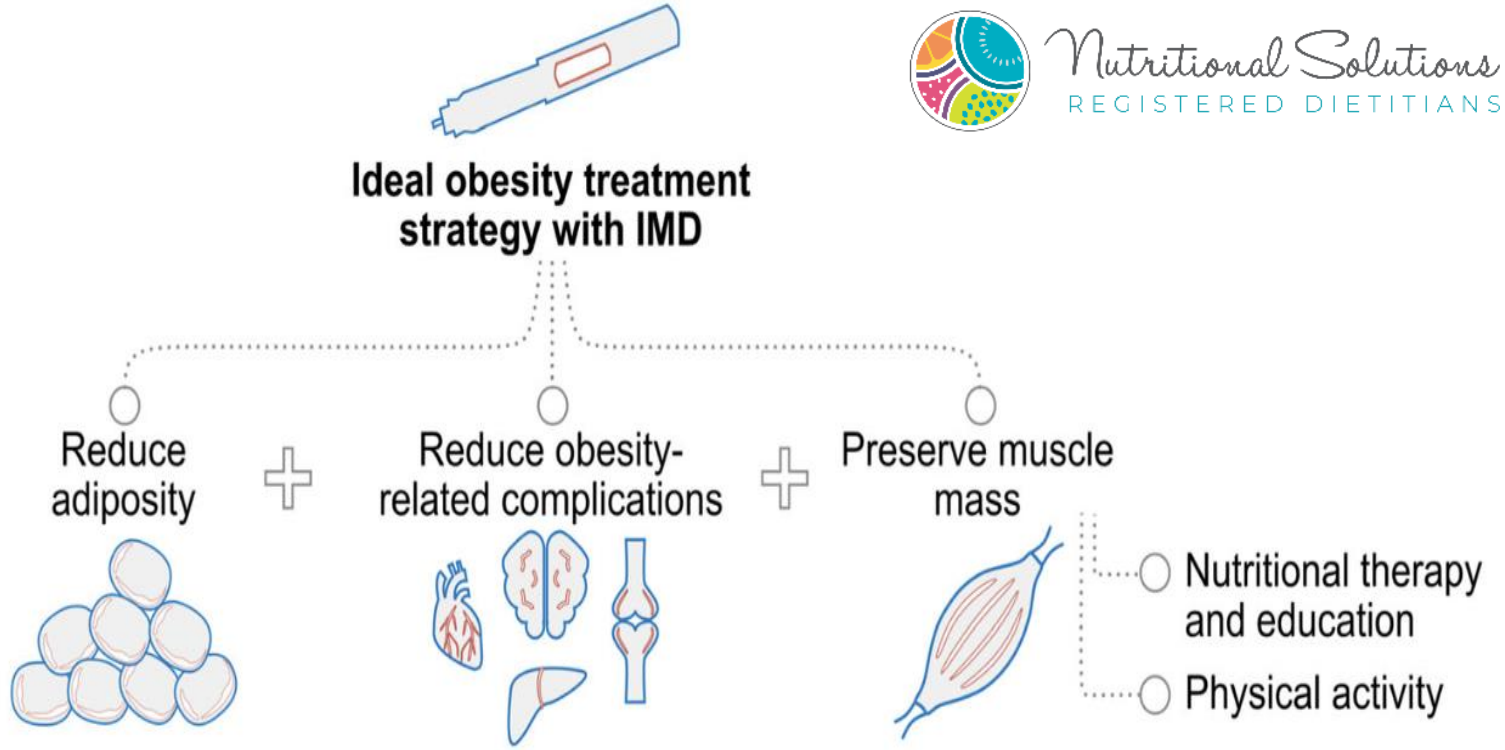


FIGURE 5 Estimated yearly age-related muscle loss in adults and estimated declines in total lean mass during the first year of IMD therapy in the STEP-1 and SURMOUNT-1 trials.[1,2,39] Estimated declines in total lean mass during the 68-week STEP-1 and 72-week SURMOUNT-1 trials were normalized to 52 weeks based on the simplifying assumption that the decline in lean mass was linear over time. The estimated decline in muscle mass due to aging is based on numerous studies as described by Mitchell et al.[39]

Mechanick, J, et al.,Strategies for minimizing muscle loss during the use of incretin-mimetic drugs, 2024



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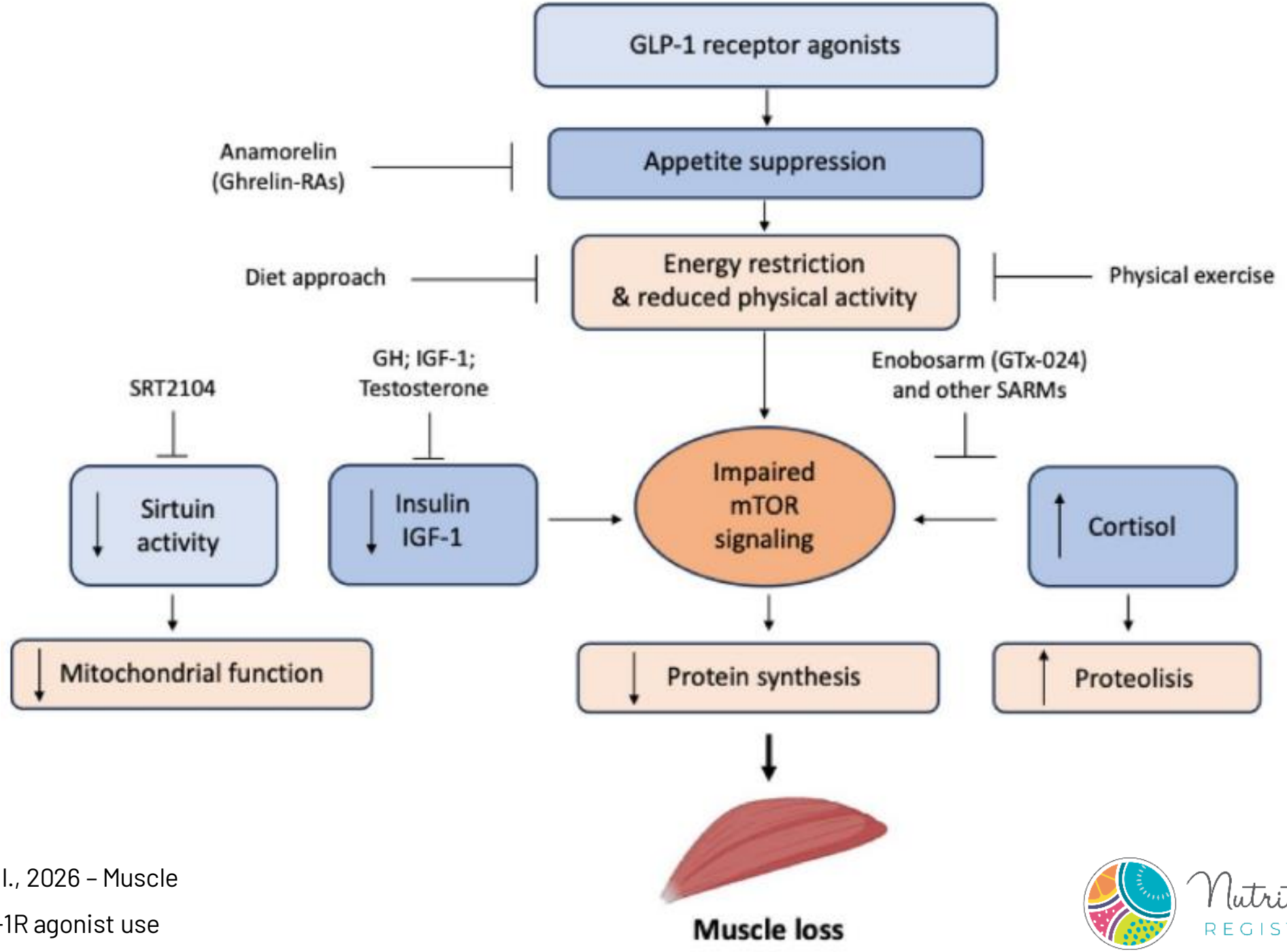

Rossi, G., et al., 2026 – Muscle loss and GLP-1R agonist use

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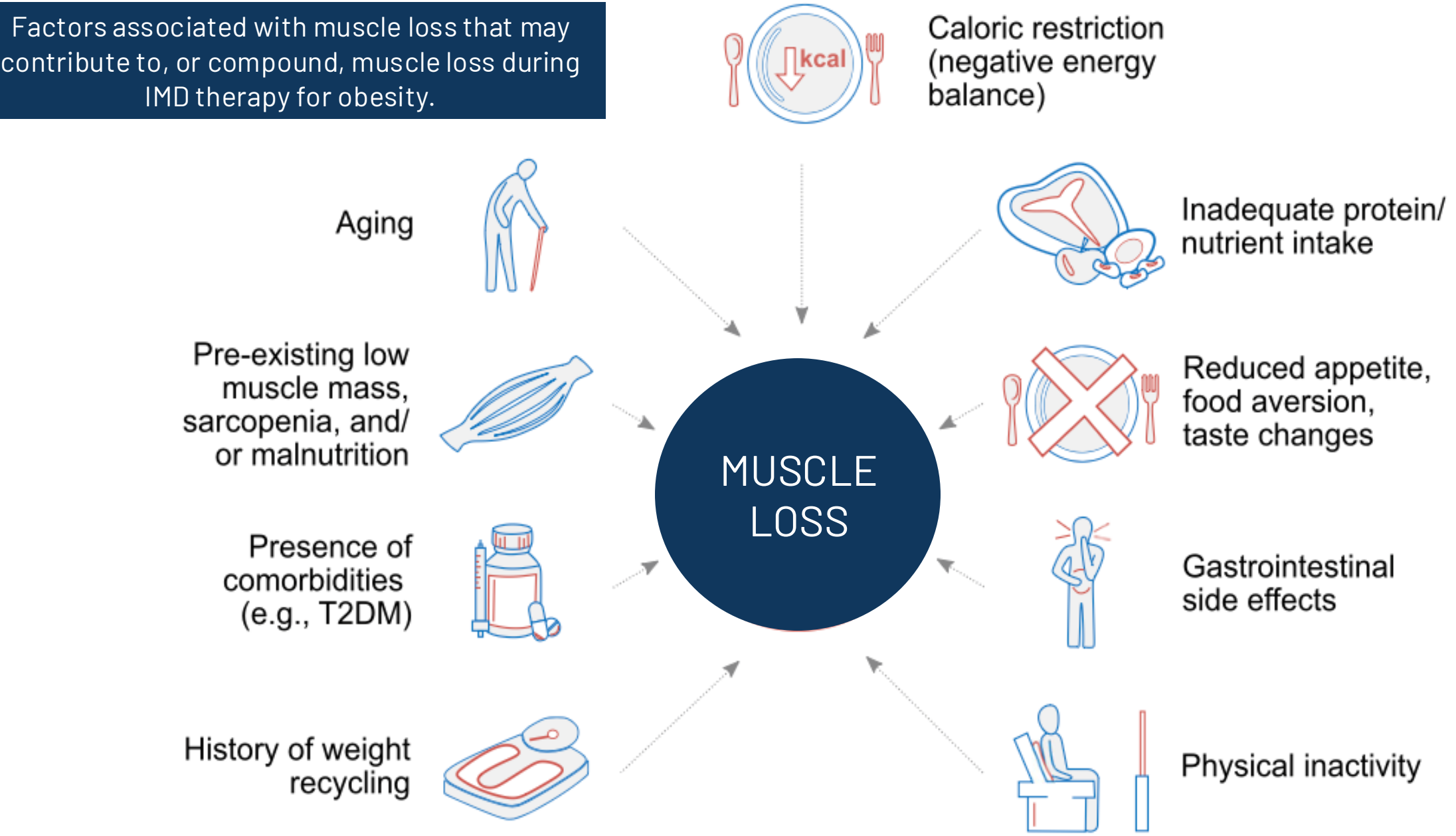
Factors associated with muscle loss that may contribute to, or compound, muscle loss during IMD therapy for obesity.



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Mechanick, J, et al., Strategies for minimizing muscle loss during the use of incretin-mimetic drugs, 2024

Nutritional considerations with Anti Obesity Medications

Patients consume a minimum of 60 g/day of high-quality protein, target of 0.8 g/day of protein per kilogram of body weight. Can go up to 25% of energy from protein intake.

Wadden, T.A., et al., 2023, Raynor, H.A, et al., 2024

RDA for protein is 08g//kg/day – currently being reviewed by the National Academics of Medicine.

Higher rates of 1.2-1.6g/kg/d recommended during active weight loss. For individuals with Obesity – Recommendation are unclear – More accurate 1.5g/kg of lean body mass (FFM) per day. Prolonged intake of 2g/kg /d - avoided due to potential adverse health effects

Mozaffarian, D, et al., Nutritional priorities to support GLP-1 therapy for Obesity, 2025

Nutritional considerations with Anti Obesity Medications

AOMs substantially decrease the quantity of food consumed, it is important to counsel patients to increase the quality of the foods they eat.
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To mitigate the potential loss of LBM with AOMs, we recommend - all patients consume a minimum of 60 g/day of high-quality protein, target of 0.8 g/day of protein per kilogram of body weight. Can go up to 25% of energy from protein intake.

Recommend a diet promotes cardiometabolic health, emphasis on increased fruits, vegetables, fibre & other nutrient-rich foods, combined with decreased consumption foods high in saturated fat &/ sugar.

Dietary strategies based on the patient's comorbidities, as well as sociocultural preferences & incorporate reduced-calorie versions of the Mediterranean-style diet, the DASH diet.

Wadden, T.A., et al., 2023, Raynor, H.A, et al., 2024

Nutritional Deficiencies & Minimum Energy Requirements

Patients on GLP 1's experience significant reductions in appetite & energy intake – drop of up to 16-39%.

Large rapid reduction of total energy – insufficient intake of essential vitamins and minerals – especially at energy levels < 1200kcal/day female and <1800kcal/day for males.

Signs of frank nutrient deficiencies include fatigue beyond expected levels, excessive hair loss, skin flakiness or itching, muscle weakness, poor wound healing & unusual bruising.

Individuals with obesity are more likely to have suboptimal dietary patterns, highlighting the importance of proactively managing dietary quality & composition to maximise nutrient intake within a lower- calorie intake.

Mozaffarian, D, et al., Nutritional priorities to support GLP-1 therapy for Obesity, 2025

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RDs initially would appear to be best prepared to provide lifestyle counselling,

If not on staff, encourage practices to establish consulting relationships with RDs, certified clinical exercise physiologists, & psychologists.

Digitally delivered programs, also are likely to be explored

Micronutrients of specific concern - vitamin B12, folate, thiamine, magnesium, potassium, calcium, the fat-soluble vitamins (A, D, E, K), iron, copper, zinc, and selenium

Provide strategies mitigate common adverse effects of AOM, particularly nausea, diarrhoea, vomiting & constipation, most prominent during dose escalation.

Avoid fatty, fried, greasy & high-sugar foods for health reasons & decrease GI side effects. Eat slowly, smaller meals, eat food that is light (less spicy/acidic), avoid eating too late at night.

Fluid intakes of 2.2 L- 3 L/day. Informed of the signs & symptoms of dehydration. Decreasing alcohol and caffeine can also help to avoid dehydration. Add electrolytes .

Wadden, T.A., et al., 2023, Raynor, H.A, et al., 2024

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CASE STUDY ONE – 17-year-old female

InBody Score

63 / 100 Points

* Total score that reflects the evaluation of body composition. A muscular person may score over 100 points.

Weight Control

Target Weight	74.5 kg	
Weight Control	- 4.0 kg	
Fat Control	- 10.0 kg	
Muscle Control	+ 6.0 kg	

Research Parameters

Basal Metabolic Rate	1479 kcal	(1545~1806)
Waist-Hip Ratio	0.90	(0.75~0.85)
Visceral Fat Level	13	(1~9)
FFMI	kg/m²	

Results Interpretation

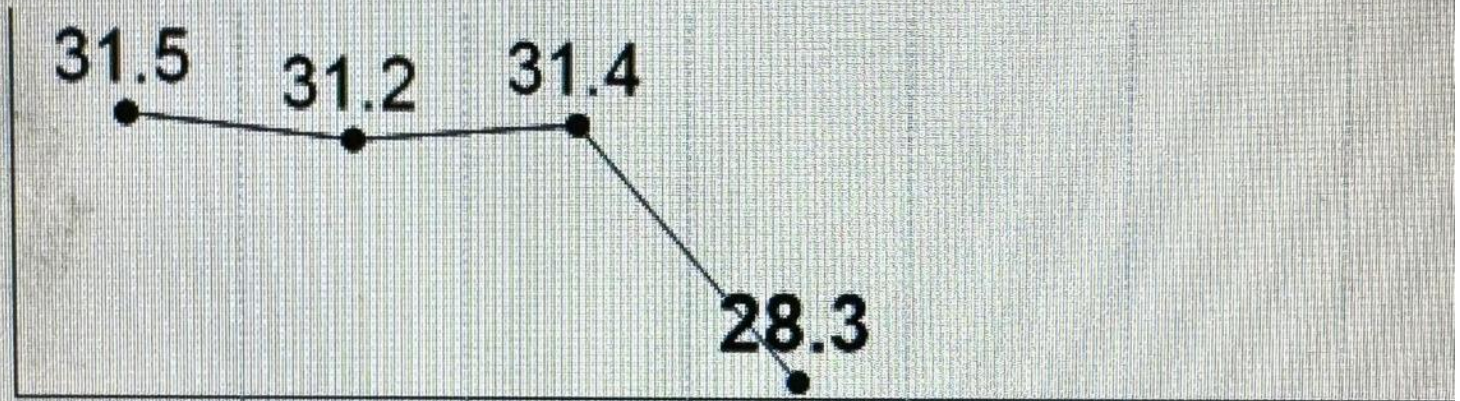
Body Composition Analysis

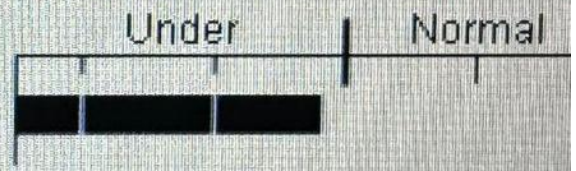
Body weight is the sum of Total Body Water, Protein, Minerals, and Body Fat Mass.
Maintain a balanced body composition to stay healthy.

Muscle-Fat Analysis

Compare the bar lengths of Skeletal Muscle Mass and Body Fat Mass. The longer the Skeletal Muscle Mass bar is compared to the Body Fat Mass bar, the

Skeletal Muscle Mass (kg)

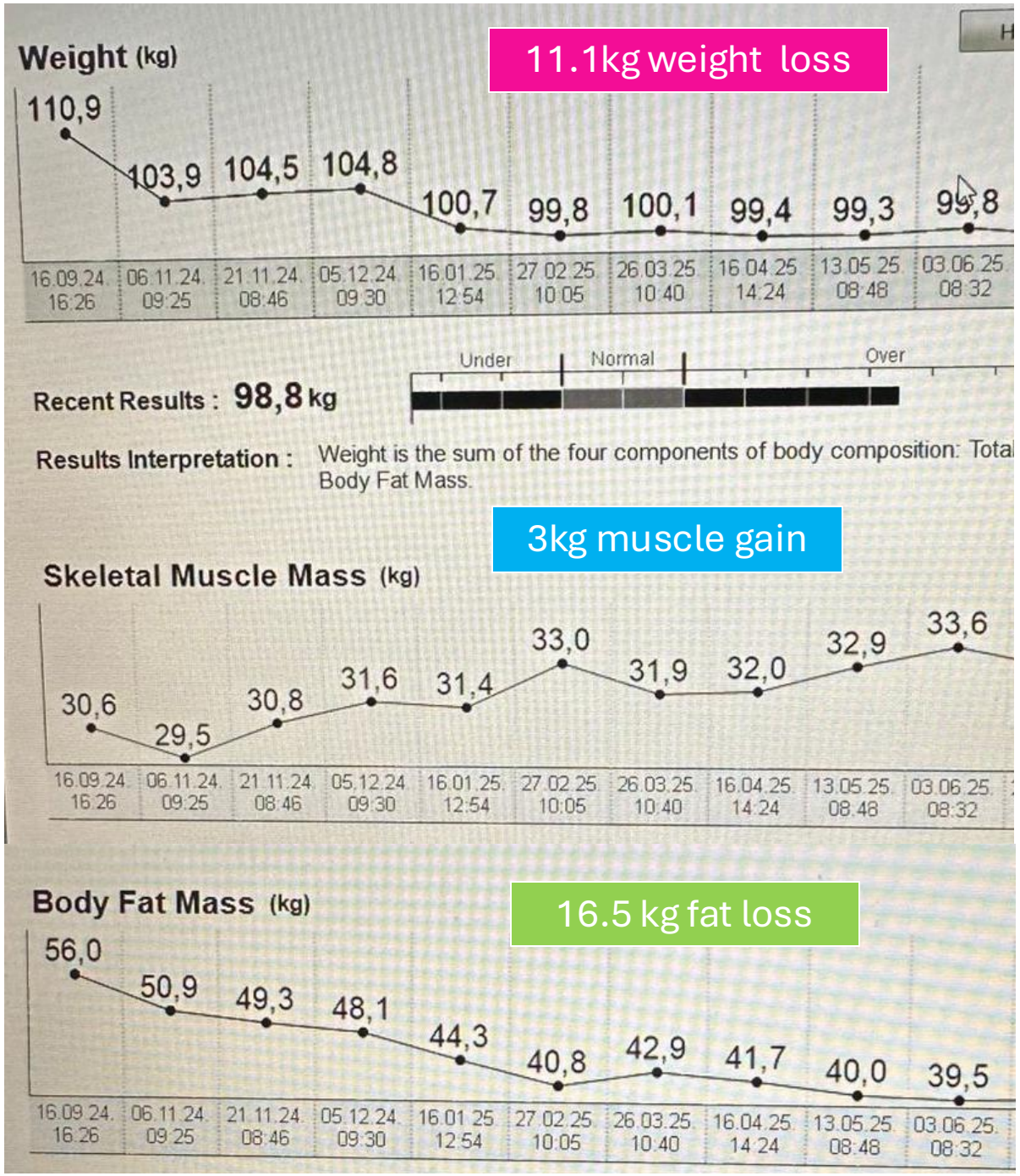




Recent Results : 28.3 kg

Results Interpretation : Skeletal Muscle Mass is the weight movement, posture, and body temp in the body.

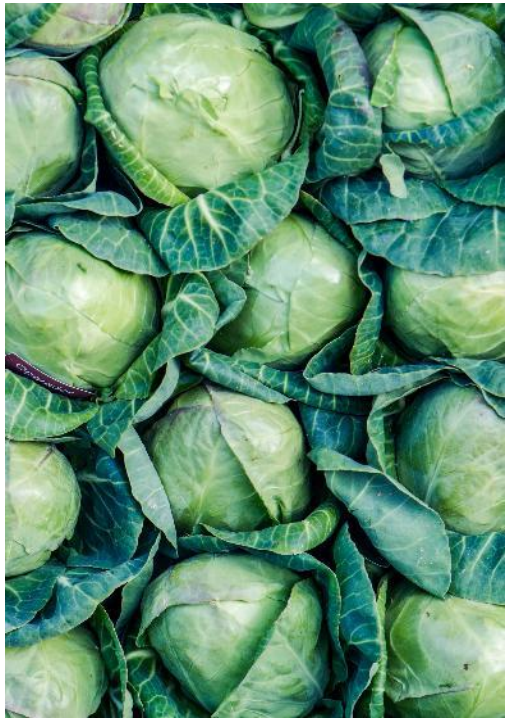
CASE STUDY – 48-year-old female



135kg Starting Weight – Oct 2022

110.9kg Starting Weight – Sept 2024

- Personal trainer 4 x week
- 5km walk 1-2 x week on weekends
- Not sleeping well
- High Stress levels
- Vegan diet to help with weight loss
- Using excessive amounts of protein shakes & bars – lack of actual food intake. Weight was no longer moving down.



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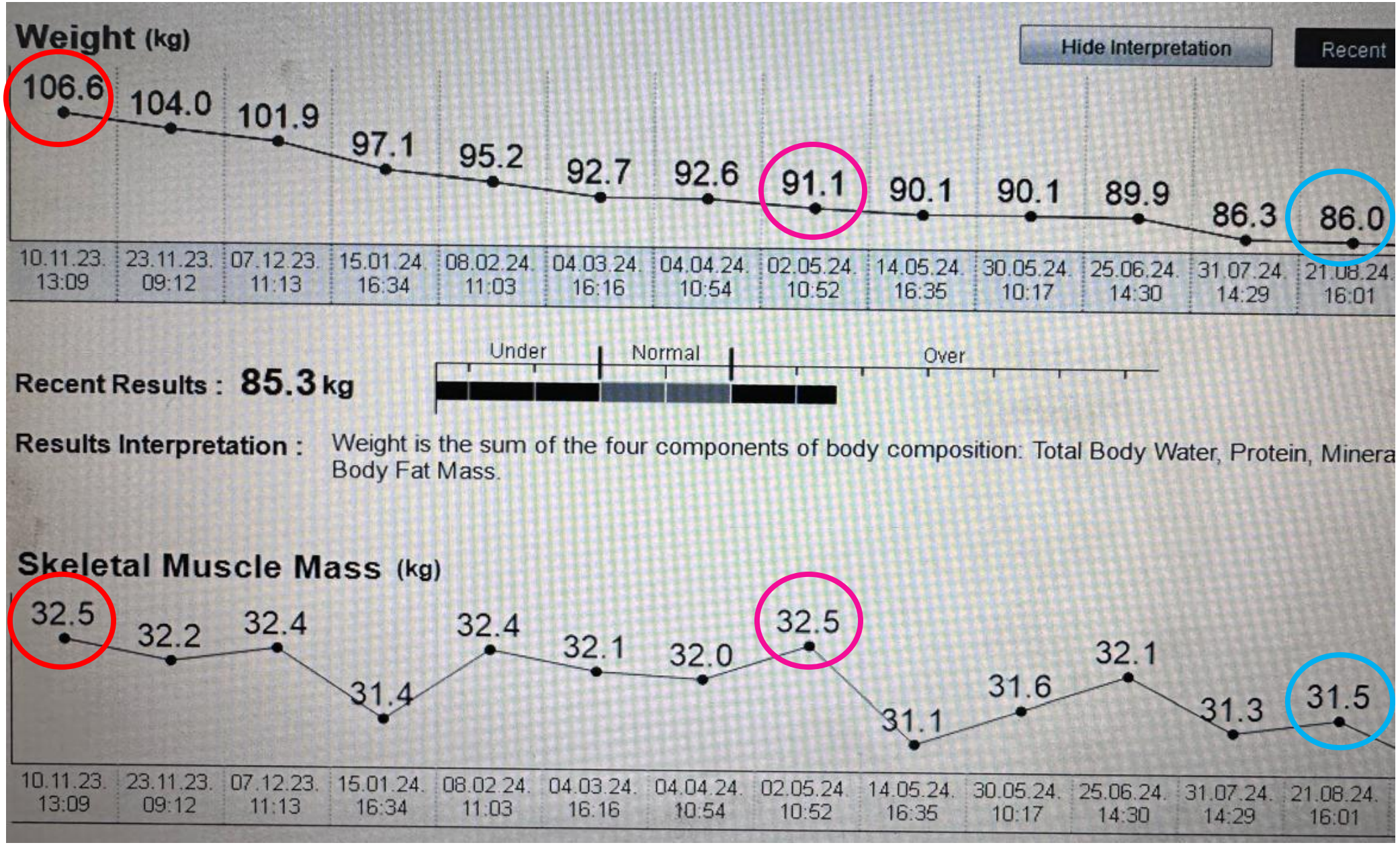
CASE STUDY TWO – 36 year old female – mom of two young boys – PCOS



15.5kg weight loss

ZERO kg muscle change

20.6kg weight loss

ONE kg muscle change

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1.6g protein per kg body weight = 114g – 5400kJ

Protein – 114g – 36%
Carbohydrate – 3g – 1%
Fat –90g – 63%

14 proteins -
560g salmon
3 fats - ½ medium avocado 120g
No allocation for starches
Only free vegetables

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1g protein per kg body weight = 90g – 5400kJ

Protein – 90g – 28%
Carbohydrate – 71g – 22%
Fat –71g – 50%

Breakfast
2 proteins & 1 starch
2 boiled eggs & 1 slice toast

Snack
1 fruit & 2 proteins
1 cup of mixed berries &
1 cup of low-fat plain yoghurt

Lunch & Dinner
4 proteins & 1 carb & vegetables
2 x 80g chicken breasts
½ cup of cooked bulgur wheat
Roast vegetables & 1 tsp olive oil

1g protein per kg body weight = 90g – 5400kJ

Protein – 90g – 28%
Carbohydrate – 71g – 22%
Fat –71g – 50%

Breakfast
2 proteins & 2 starch
1 high fibre bran muffin & 1/3 cup fat free cottage cheese & 30g biltong

Snack -1 fruit
1 medium orange

Lunch - 2 proteins & 1 starch
Afternoon snack 1 protein

1 small seeded roll
40g trout ribbons
1/3 cup fat free cottage cheese

Dinner - 3 proteins & 1 starch
Afternoon snack 1 protein

120g chicken breast
½ round of feta cheese
1/3 cup of hummus

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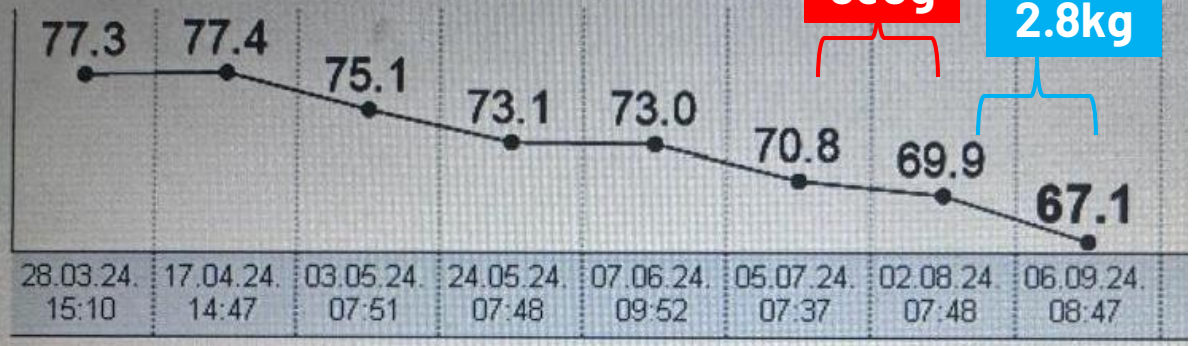
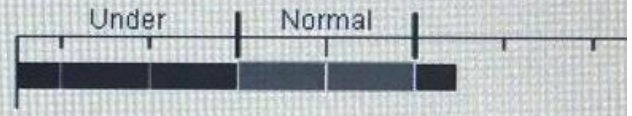
Weight (kg)

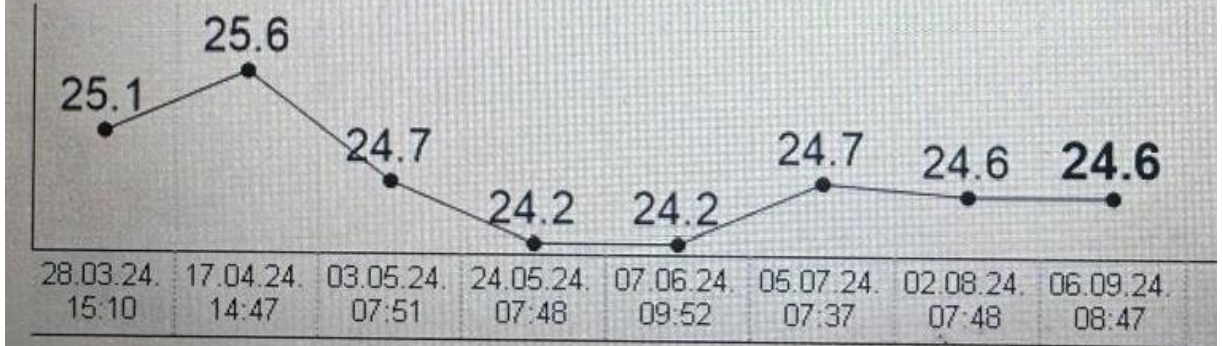


Recent Results : 67.1 kg

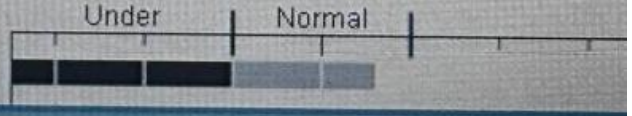


Results Interpretation : Weight is the sum of the four components of body Body Fat Mass.

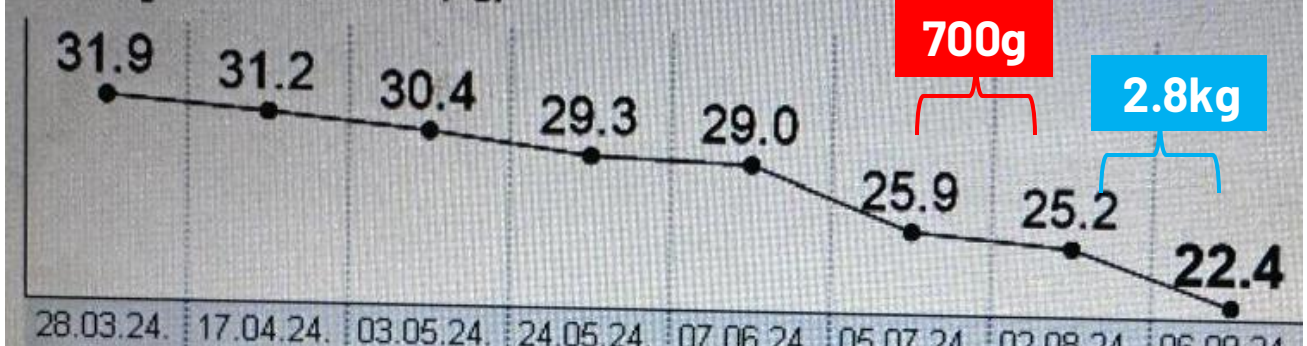
Skeletal Muscle Mass (kg)



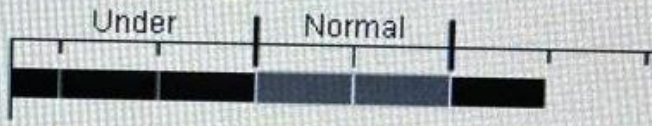
Recent Results : 24.6 kg



Body Fat Mass (kg)

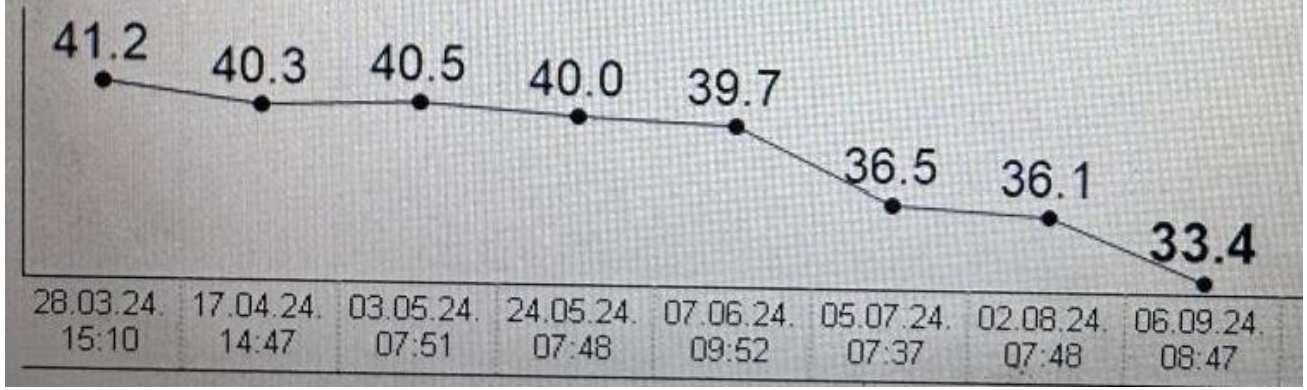


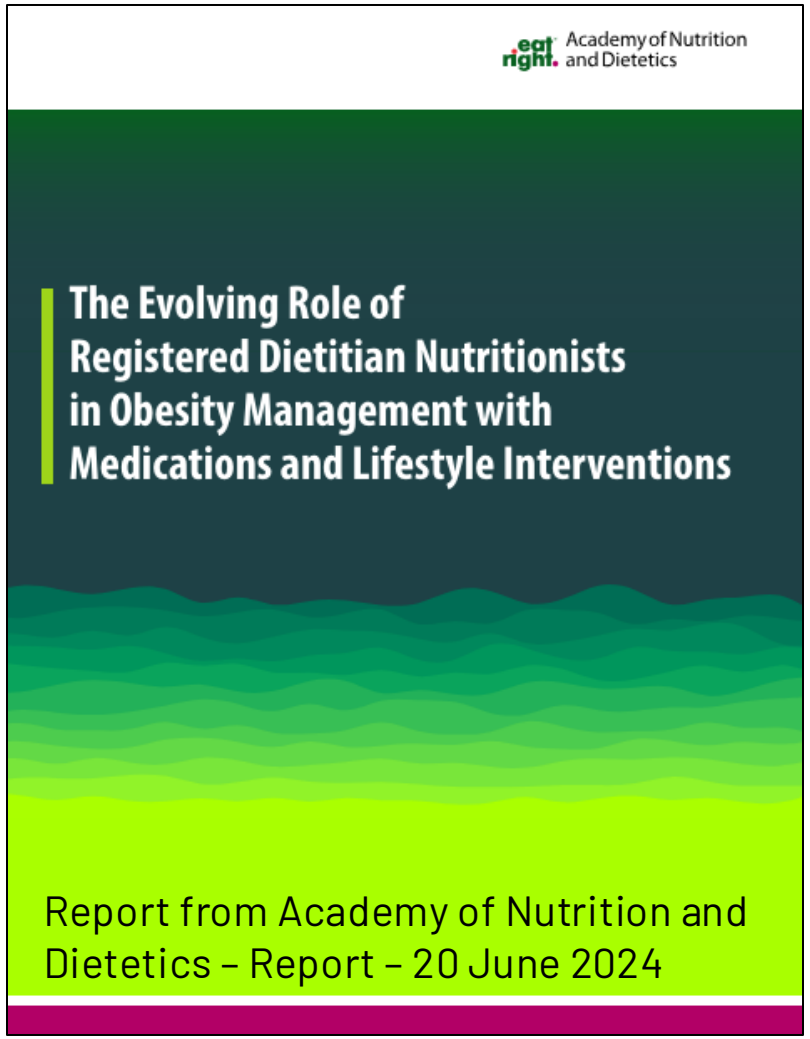
Recent Results : 22.4 kg



Results Interpretation : Fats are responsible for storing energy, protecting
Large amounts of fats may increase the risk of h
many other health problems.

Percent Body Fat (%)





Currently, there is discussion about the often-used term "anti-obesity medications." For some people, this term evokes stigma. Alternative terms, like "incretin-based therapies" or the term nutrient-stimulated hormone based therapies (NuSHs), are being proposed and used for more inclusive and person-centered language.

Rather than placing the focus on achieving calorie reduction, nutrition counselling with these newer medications should instead focus on nutrient quality, adequate nutrient intake, regular food intake, sufficient protein consumption to minimize loss of lean body mass and adequate fluid consumption.

Long-Term Use of AOMs - important to engage patients, as treatment progresses, in the discussion of long-term medication adherence, rather than stating at the outset, "you'll need to take this medication for the rest of your life." We often say "you can take the medication for as long as it's helpful," giving patients a sense of choice and control.

Wadden, T.A., et al., 2023. The Role of Lifestyle Modification with Second Generation Anti-Obesity Medications: Comparisons, Questions and Clinical Opportunities. Current Obesity Reports 12:453-473

Raynor, H.A, et al., 2024. Position of the Academy of Nutrition and Dietetics: Medical Nutrition Therapy Behavioural Interventions Provided by Dietitians for Adults with Overweight or Obesity.

	Critical questions	Assessment	Intervention
Dietary intake	During weight loss with AOMs, do patients • Consume an appropriate dietary pattern (including lean proteins, fruits, and vegetables) to promote cardiometabolic health? • Consume adequate amounts of protein to preserve lean body mass? • Maintain adequate hydration? • Limit problem foods to mitigate potential gastrointestinal (GI) side effects related to AOMs?	• Before beginning AOMs, use brief interview or screening questionnaires [84] to assess dietary intake. Repeat this assessment periodically (e.g., every 3 months) • Assess patient's daily schedule of meals and snacks • Have patients periodically monitor food intake for 2–3 days, particularly for protein and fluids • Evaluate relationship of GI side effects to dietary intake or timing of intake (e.g., high-fat or high-sugar foods, eating late at night)	• Recommend reduced-calorie diet (500 kcal/d deficit) that promotes cardiometabolic health and encourages consumption of lean proteins, fruits, and vegetables and fewer highly processed foods (i.e., high in fat and sugar) • Recommend daily protein intake of at least 0.8 g/kg of body weight, with potentially higher amounts for patients with BMIs ≥ 40 kg/m^2 • Recommend water and non-caloric fluids to maintain hydration (2.2–3 L/d) • Refer to registered dietitian (RD) for patients with clinically significant problems or who desire more education and support
Physical activity and body composition	During weight loss with AOMs, do patients • Increase their physical activity (planned and lifestyle) to improve their cardiometabolic health (e.g., cardiorespiratory fitness)? • Benefit from strength training (ST)? • Maintain appropriate nutrition and hydration to support increased physical activity?	• Use brief interview, activity diary, or step counter to assess baseline physical activity and changes during treatment • Assess appropriateness of ST based on general health, and potentially with DXA in older adults when body composition, bone mass, or strength are of concern (e.g., sarcopenia) • Assess dietary intake using methods described	• Recommend ≥ 150 min/wk of physical activity (e.g., walking) during weight loss, potentially increasing with weight-loss maintenance • Recommend ST (2 day/wk) as part of general activity program, as appropriate • Refer to certified clinical exercise physiologist for patents with clinically significant problems or who want more education/support
Psychosocial and behavioral issues	During weight loss with AOMs, do patients • Have appropriate mental health and realistic goals for improving weight, health, and quality of life (QOL)? • Based on their psychiatric history, have a risk of psychosocial distress (e.g., suicidal thoughts/behaviors, anxiety, depression, relationship changes) or a desire to continue losing weight below an appropriate BMI (e.g., 20-22 kg/m^2)? • Need to frequently monitor their food intake and physical activity or to have more than approximately monthly lifestyle contacts • Wish to stop taking AOMs for reasons other than side effects or financial costs (e.g., belief that the medication is no longer working)? • Have plans and strategies for maintaining their weight loss after discontinuing medication?	• Assess mood and psychosocial status at baseline and follow-up visits. Use PHQ-9 [104] and C-SSRS [105] as needed • With weight loss, periodically inquire about changes in mood, sleep, and energy level, as well as satisfaction with work, social interactions, and feelings about themselves (body image). Use PHQ-9 when concerned • Have patients monitor food intake (e.g., MyFitnessPal) and physical activity (e.g., step counter) frequently during first few weeks to support self-learning and behavior change • Discuss patients' reasons for wishing to stop AOMs and the possible consequences of doing so (e.g., return of appetite and weight) • Assess patients' strategies for maintaining weight loss without support of AOMs	• With patients who report concerning changes in mood and psychosocial function, or desire to reduce below an appropriate BMI, provide reassurance and education. In clinically significant cases, not responsive to education, refer to a mental health professional. Consider medication dose reduction in patients who have achieved an appropriate BMI (e.g., 20–22 kg/m^2) • Adjust patients' frequency of self-monitoring (and lifestyle contacts) accordingly to achieve their goals for eating a healthier diet, increasing physical activity, and other outcomes • Review patients' potential concerns that "the medication is no longer working." Provide reassurance and education about the benefits of continued medication use and likely results of discontinuation • With patients' terminating medication, consider down-titrating the dose over several months to reduce potential rebound in appetite and eating. Assist patients in joining (or developing) a behavioral weight loss maintenance plan, with high levels of physical activity and frequent monitoring of weight and dietary intake

Wadden, T.A., et al., 2023

General recommendations for the journey on a GBT

Nutritional support

- Personalize dietary advice and support
- Adequate fiber intake (women: ≥25 g/day, men: ≥30 g/day, those with diabetes: ≥35 g/day)
- Adequate hydration (2–4 L/day) and intake of nutrient dense food
- Limit high-calorie snacking between meals
- Minimize alcohol intake
- Involve registered dietician
- Practice shared decision making and discuss treatment goals

Physical activity*

- Create individualized plan with a stepwise approach
- Recommend ≥150 min/week moderate-vigorous aerobic activity
- Encourage moderate-high intensity resistance training (2–3 sessions/week)

*if the patient is able, and without risk of injury

Entry criteria

BMI ≥30 kg/m² or a BMI ≥27 kg/m² + ≥1 weight-related comorbidity

Baseline assessments before starting GBT

- Assess patient in a non-judgmental manner
- Medical history and obesity-related complications, root causes of obesity
- Screen for contraindications and conditions relevant to GBT use or to identify a risk of malnutrition (e.g., eating disorders, GI disorders, renal insufficiency, sarcopenia, osteopenia)
- Address modifiable underlying factors
- Refer patient to appropriate support specialists, e.g., physical, mental, behavioral and/or social support professionals

Nutritional assessment:

- Dietary intake and preferences
- Nutrient deficiency risk factors
- Correct eventual nutritional deficiencies

Physical assessment:

- Body composition
- Test muscle strength in at-risk patients

Lifestyle assessments:

- Social determinants of health, particularly those related to a risk of malnutrition (e.g., costs, transportation challenges, access to healthy food)
- Lifestyle behaviors (e.g., physical activity, sleep, stress management, social network)

Sievenpiper, J.L., et al., 2026

Weight loss phase on GBT
(up to 12 months)

- Escalate GBT dose gradually to minimize AE incidence and severity
- Start step-down hypocaloric nutrient dense diet (500 kcal/day deficit) with at least 1000-1200 kcal/day
- Address hunger and food cravings before implementing behavioral changes
- Encourage mindful eating habits and structured meal planning
- Evaluate need for nutritionally complete low-energy formula products
- Ensure adequate protein intake (1.2–1.5 g/kg/day or 25–30% of a 1600 kcal/day diet)
- Assess for and manage nutritional deficiencies
- Monitor weight trajectory and GI AEs:
  - Excessive weight loss: >1.5 kg/week
  - Check regularly (e.g., at 4, 12, and 24 weeks, then every 3–6 months)

Weight loss maintenance on GBT
(≥12 months with monitoring every 6–12 months)

- Introduce guideline-approved dietary plan that meets macro- and micronutrient requirements
- Implement long-term, low intensity support for weight maintenance
- Ensure adequate protein intake (≥0.8 g/kg/day or >1.0–1.2 g/kg/day in older subjects)
- Limit high-calorie snacking between meals

Adverse event playbook

Nausea, vomiting:
- Adjust GBT dose
- Try dietary adjustments e.g., smaller, more frequent meals and avoidance of high-fat or spicy foods

Diarrhea:
- Adjust GBT dose
- Implement individualized pharmacological and dietary approach
- Adequate hydration

Constipation:
- Adjust GBT dose
- Ensure adequate hydration and dietary fiber intake

Excessive weight loss:
- Adjust GBT dose
- Screen for under-nutrition

Discontinuation safeguards

- Implement behavioral therapy supported by registered dietitian and MDT
- Continue nutritional support and dietary interventions used during GBT
- Consider meal replacements to support weight loss maintenance
- Implement an individualized, sustainable physical activity program
- Monitor regularly for weight regain (e.g., every 6–12 months)

Sievenpiper, J.L., et al., 2026 – Nutritional & lifestyle supportive care recommendations for management of obesity with GLP-1 based therapies: An expert consensus statement using a modified Delphi approach. Obesity Pillars

Current Obesity Reports (2023) 12:453–473
https://doi.org/10.1007/s13679-023-00534-z

REVIEW

The Role of Lifestyle Modification with Second-Generation Anti-obesity Medications: Comparisons, Questions, and Clinical Opportunities

Thomas A. Wadden[1] · Ariana M. Chao[2] · Molly Moore[1] · Jena S. Tronieri[1] · Adam Gilden[3] · Anastassia Amaro[4] · Sharon Leonard[1] · John M. Jakicic[5]

"participating in a structured 1-year program that provides, in the first 6 months, at least 14 individual or group sessions with a trained interventionist [6, 8, 19]. (Treatment is often weekly for the first 3–6 months.)"

Wadden, T.A., et al., 2023

RDs initially would appear to be best prepared to provide lifestyle counselling

Raynor, H.A, et al., 2024

Lack of public and clinician knowledge on nutrition, RD's pivotal in providing MNT, culinary skills, planning, support FU & culturally appro.

Mozaffarian, D, et al., Nutritional priorities to support GLP-1 therapy for Obesity, 2025

If it's about NUTRITION, ask your DIETITIAN