# Weight and Comorbidities

**Cathleen Beaver, MD**
Assistant Professor
KU Weight Management Clinic
University of Kansas Medical Center

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## Obesity is a Disease

A chronic, relapsing, multi-factorial, neurobehavioral disease, wherein an increase in body fat promotes adipose tissue dysfunction and abnormal fat mass physical forces, resulting in adverse metabolic, biochemical, and psychosocial health consequences.

- *2014-2015 American Society of Bariatric Physicians*

## Obesity Myths

- Body weight = calories in – calories out
- Obesity is primarily caused by voluntary overeating and a sedentary lifestyle
- Obesity is a lifestyle choice
- Obesity is a condition, not a disease
- Severe obesity is usually reversible by voluntarily eating less and exercising more

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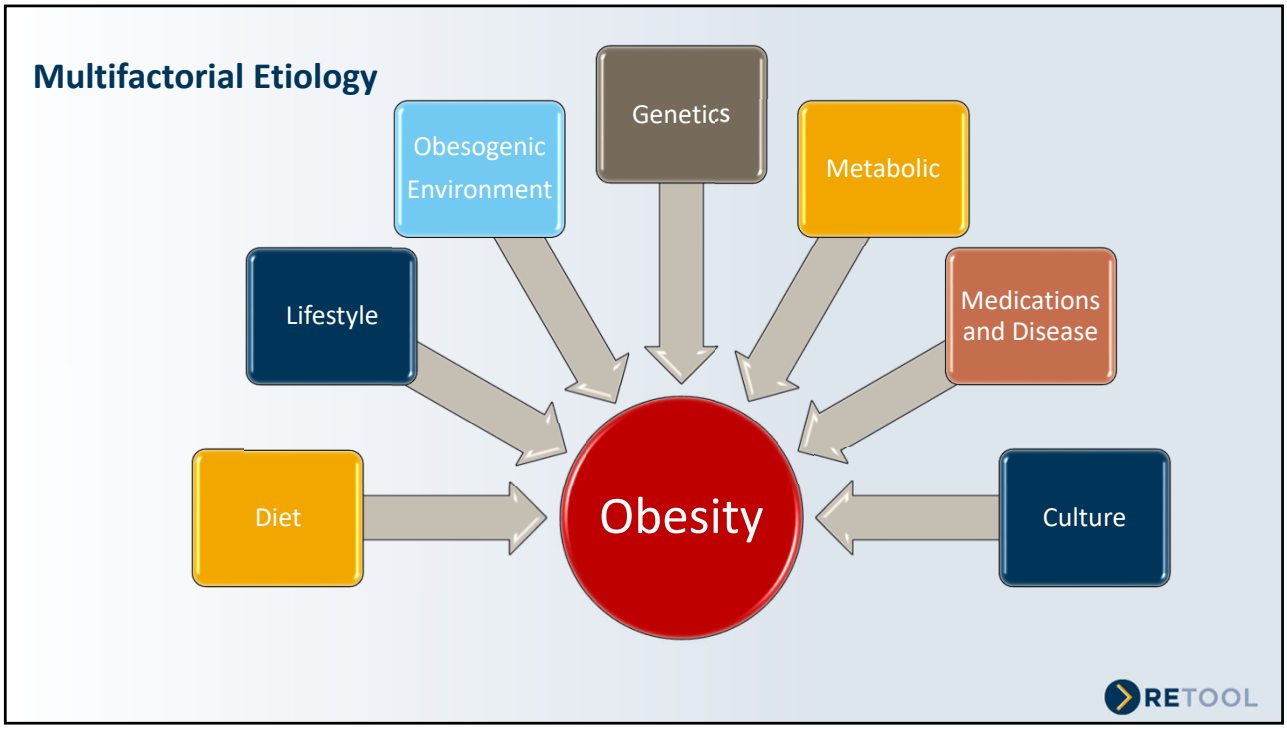
Multifactorial Etiology
Genetics
Obesogenic Environment
Metabolic
Lifestyle
Medications and Disease
Diet
Obesity
Culture
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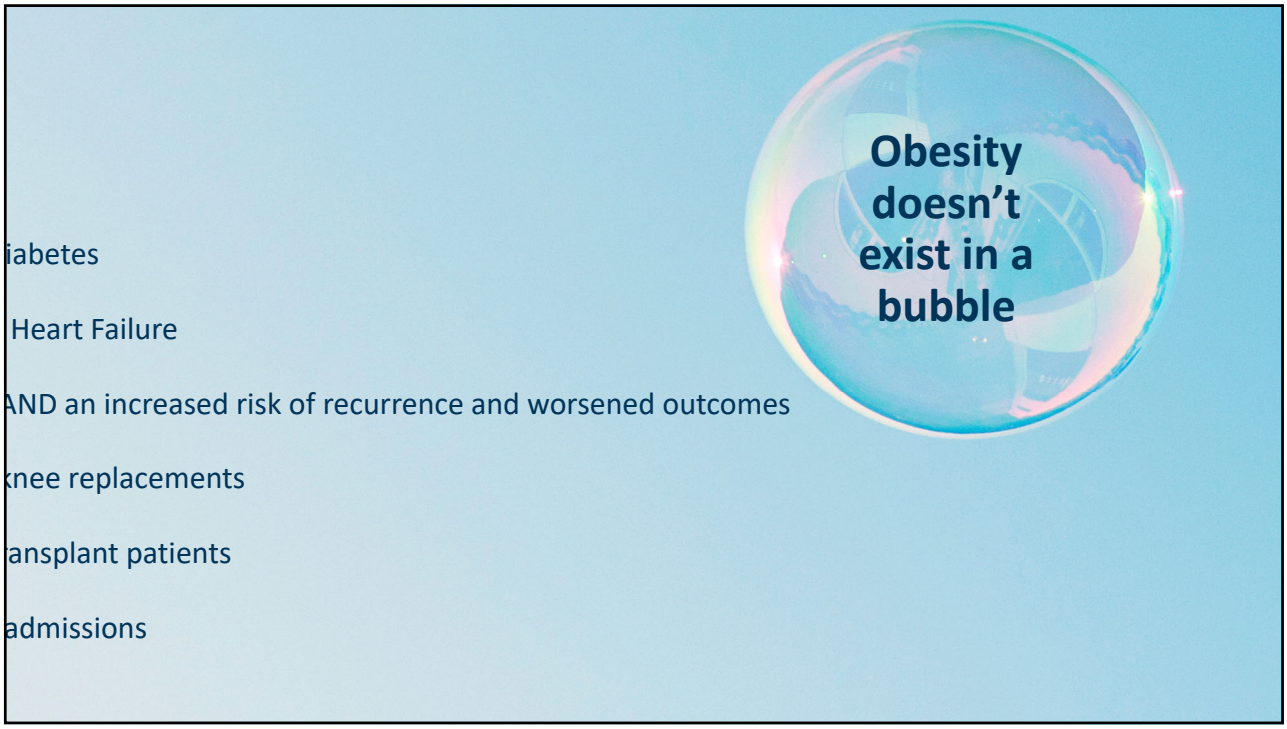
Obesity doesn't exist in a bubble
iabetes
Heart Failure
ND an increased risk of recurrence and worsened outcomes
nee replacements
ansplant patients
admissions

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## Common Health Consequences

**Pulmonary**
- Asthma
- Obstructive Sleep Apnea
- Hypoventilation Syndrome
- Abnormal PFTs: ↓ FEV1, FVC, and FEV1/FVC

**Cardiovascular**
- Coronary Heart Disease
- Hyperlipidemia
- HTN
- Varicosities, Thromboembolic Disease
- Congestive Heart Failure, Cardiomyopathy
- Atrial Fibrillation, Other Dysrhythmias

**Neurologic**
- Cerebral Vascular Disease
- Pseudotumor Cerebri
- Migraines

**Musculoskeletal**
- Connective Tissue Disease
- Osteoarthritis
- Gout
- Chronic Pain

**Gastrointestinal**
- NAFLD/cirrhosis
- Pancreatitis
- Biliary Disease
- GERD

**Genitourinary**
- Progressive CKD
- Focal Segmental Glomerulosclerosis
- Nephrolithiasis
- Urinary Incontinence

**Endocrine**
- Type 2 Diabetes/Prediabetes
- Metabolic Syndrome
- Menstrual Abnormalities
- High Risk Pregnancy
- Infertility (men and women)
- Decreased libido
- Erectile Dysfunction
- Testosterone Deficiency

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## Common Psychosocial Consequences

- Depression
- Anxiety
- Poor Quality of Life
- Low Self-Esteem
- Poor Body Image
- Diminished sex drive
- Impaired intimacy and sexual relationships
- Eating Disorders
- Increased Employment Absenteeism
- Substance Abuse
- Poor Physical Functioning
- Sleep Disturbance
- Cognitive Impairment
- Bias and Stigmatization

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## Clinical Pearls to Care for Patients with Obesity


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## Weight in the Healthcare Setting: Patient Perspective


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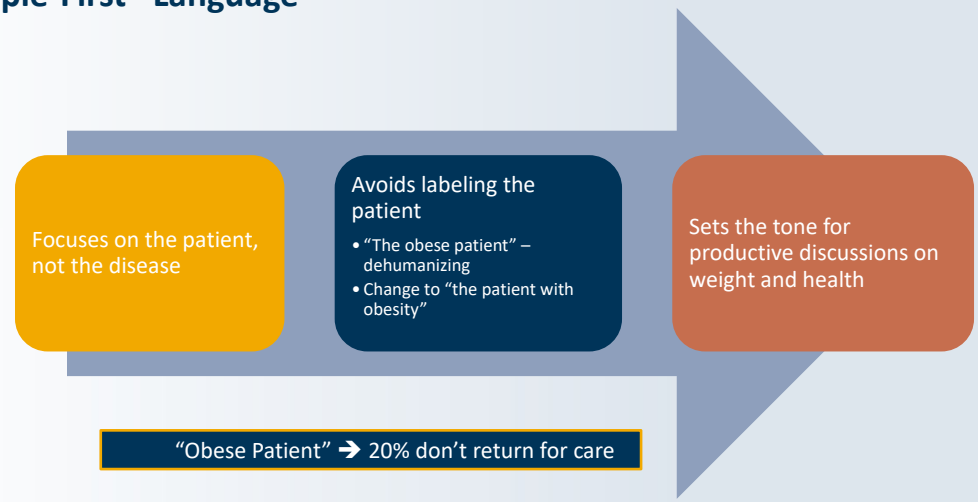
## Avoid Weight Bias: The Language of Obesity
## "People-First" Language

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## Avoid Weight Bias: The Healthcare Environment

| | |
|---|---|
| **Ask** | • **Permission before weighing someone** |
| **Create** | • **Private space for weights with appropriate scales (600lb scale)** |
| **Use** | • **Properly sized equipment (e.g., BP cuffs, gowns, chairs, beds) ready prior to patient arrival** |
| **Ensure** | • **Seating, doorways, tables, gowns, toilets are safe/comfortable** |

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## 5 A's of Obesity Management

| Ask | Assess | Advise | Agree | Arrange/Assist |
|---|---|---|---|---|
| • Ask for permission to discuss body weight<br>• Explore readiness for change | • Assess BMI, waist circumference, and obesity stage<br>• Explore drivers and complications of excess weight | • Advise the patient about the health risks of obesity, the benefits of modest weight loss (5-10%), the need for long term strategies, and treatment options | • Agree on realistic weight-loss expectations, targets, behavioral changes, and specific details of the treatment plan | • Assist in identifying and addressing barriers<br>• Provide resources<br>• Assist in finding and consulting with appropriate providers<br>• Arrange for regular follow-up |

Adapted from Obesity Algorithm, Obesity Medicine Association.

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## 5 A's of Obesity Management

- Would you mind telling me about the history of your weight?
- When did it first become an issue for you?
- What are your concerns?
- On a scale of 1 to 10, how important is weight loss for you?
- On the same scale, how motivated are you to change your lifestyle?
- When you think about starting a weight loss journey, what are your challenges?
- Do you have any particular goals around your weight?

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## Manage Expectations


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## Benefits Associated with Modest Weight Loss

| | ≥ 2% | ≥ 5% | ≥ 10% | ≥ 16% |
|---|---|---|---|---|
| Improved glucose metabolism | X | X | X | X |
| Reduction in systolic blood pressure | X | X | X | X |
| Reduction in triglycerides | X | X | X | X |
| Improvements in PCOS/infertility | X | X | X | X |
| Reduction in diastolic blood pressure | | X | X | X |
| Improvement in Impact on Weight on Quality-of-Life score | | X | X | X |
| Improved depression | | X | X | X |
| Improved mobility | | X | X | X |

Bays, H. E., Fitch, A., Christensen, S., Burridge, K., & Tondt, J. (2022). Anti-obesity medications and investigational agents: An obesity medicine association (OMA) clinical practice statement (CPS) 2022. Obesity Pillars, 2. https://doi.org/10.1016/j.obpill.2022.100018.

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## Benefits Associated with Modest Weight Loss

| | ≥ 2% | ≥ 5% | ≥ 10% | ≥ 16% |
|---|---|---|---|---|
| Improved functionality & pain w/ knee OA | X | X | X | X |
| Reduction in hepatic steatosis | X | X | X | X |
| Improved urinary incontinence | X | X | X | X |
| Improved sexual function | X | X | X | X |
| Increased HDL-cholesterol | X | X | X | X |
| Improvements healthcare costs | X | X | X | X |
| Improved obstructive sleep apnea | | | X | X |
| Improved non-alcoholic steatohepatitis | | | X | X |
| Potential reduction in cardiovascular and overall mortality | | | | X |

Bays, H. E., Fitch, A., Christensen, S., Burridge, K., & Tondt, J. (2022). Anti-obesity medications and investigational agents: An obesity medicine association (OMA) clinical practice statement (CPS) 2022. Obesity Pillars, 2. https://doi.org/10.1016/j.obpill.2022.100018.

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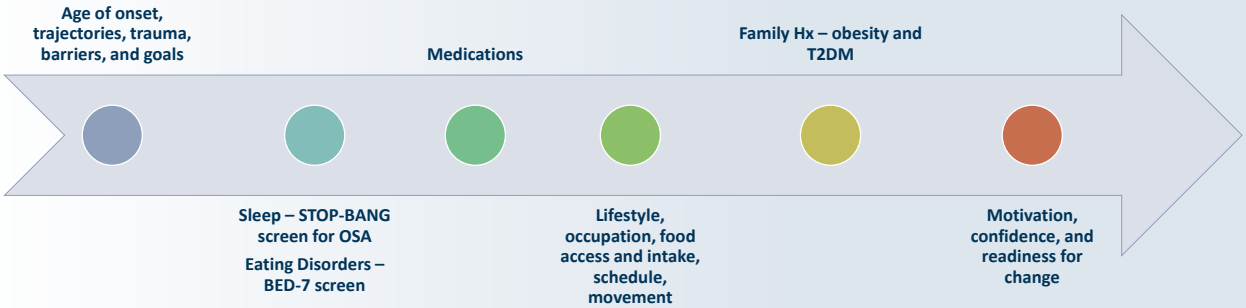
## Ideal Key Components of the History

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## Managing Weight-Promoting Pharmacotherapy

- Discuss the weight-related side effects of various medication options
  - Facilitate patient-centered therapeutic decisions
  - Manage weight gain expectations
  - Communicate with specialists
- Overall goal is to reduce iatrogenic causes of weight gain
  - Choose weight-neutral medications if possible
  - Initiate lifestyle interventions and monitor weight regularly when starting weight-promoting medications
- Most prescribed medications to consider: Neurontin/Lyrica, SSRIs, Atypical Antipsychotics, prednisone and Insulin

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## Antidepressants Associated with Weight Gain

| Class | Name | Alternative Therapy |
|---|---|---|
| SSRIs/SNRIs | **Most Weight Promoting:**<br>Paroxetine Fluoxetine*<br>Citalopram Venlafaxine<br><br>**Less Weight Promoting:**<br>Vortioxetine Desvenlafaxine<br>Duloxetine Escitalopram*<br>Sertraline* | **Bupropion** |
| Tricyclics: 0.4-4kg/month | Amitriptyline<br>Trimipramine<br>Imipramine<br>Doxepin | Nortriptyline |
| Atypical Antidepressant | Mirtazapine<br>Trazodone | |

*Acute results demonstrate weight loss/no weight gain (<6 months)

Obesity (2020) 28, 2064-2072. https://www.obesityaction.org/resources/prescription-medications-weight-gain/

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## Other Psychiatric and Neurologic Medications Associated with Weight Gain

| Class | Name | Weight Gain | Alternative Therapy |
|---|---|---|---|
| Antipsychotics | Haloperidol<br>Clozapine<br>Chlorpromazine<br>Fluphenazine<br>Risperidone*<br>Olanzapine<br>Quetiapine<br>Aripiprazole | 5-10 kg<br><br>* Up to 5 KG | Ziprasidone<br>Lurasidone<br>Consider adding metformin<br>Lamotrigine |
| Antiseizure | Valproic Acid<br>Carbamazepine<br>**Gabapentin**<br>**Pregabalin** | More than 10 kg | **Topiramate**<br>Zonisamide<br>Lamotrigine |

Canadian Adult Obesity Clinical Practice Guidelines.

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## Medications for T2DM Associated with Weight Gain

| Class | Name | Weight Gain | Alternative Therapy |
|---|---|---|---|
| Insulins | Insulin | 5-10 KG | Metformin<br>**GLP1 RAs (liraglutide, dulaglutide, semaglutide)**<br>**GIP and GLP1 RA (Tirzepatide)**<br>**SGLT2 inhibitors (canagliflozin, dapagliflozin, empagliflozin)**<br>DPP4i (alogliptin, lingliptin, sitagliptin, saxagliptin) |
| Thiazolidinedione | Pioglitazone | 5-10 kg | |
| Sulfonylureas | Glipizide | Up to 5 kg | |
| | Glyburide | 5-10 kg | |
| | Glimepiride | 5-10 kg | |
| | Chlorpropamide<br>Tolbutamide<br>Gliclazide | 5-10 kg | |
| Meglitinides | Repaglinide | Up to 5 kg | |

Canadian Adult Obesity Clinical Practice Guidelines and Pharmacologic Approaches to Glycemic Treatment: *Standards of Care in Diabetes—2023.*

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## Other Common Medications Associated with Weight Gain

| Class | Name | Alternative Therapy |
|---|---|---|
| Beta-Blockers | Atenolol<br>Propranolol<br>Metoprolol | Carvedilol<br>ACE Inhibitors<br>ARBS<br>CCBs |
| Antihistamines | Diphenhydramine | Fexofenadine<br>Loratadine |
| Corticosteroids | | NSAIDS<br>DMARDS |
| Hormonal Therapy and Contraception | Progesterone<br>Tamoxifen<br>Aromatase Inhibitors | |

Obesity (2020) 28, 2064-2072. https://www.obesityaction.org/resources/prescription-medications-weight-gain/

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## Ideal Key Components of a Nutrition History

**Patterns**

- Meals, snacks, and drinks (24-hour recall)
- Frequency
- Quality
- Portions
- Schedule, convenience and meal planning
- Restrictions

**Behaviors**

- Triggers – hunger, boredom, stress, emotions
- Literacy
- Nighttime eating or other disordered eating patterns
- Family Influences
- Depression/Anxiety
- Food security
- Any other barriers

Identify single target for initial nutrition and movement goals

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# Nutrition History Prompts

- Can you tell me about your nutrition?
- What are your struggles around your eating?
- Do you have any barriers or concerns with buying food or food shopping?
- How many of your meals do you prepare at home?
- If you eat out, what types of places do you eat at?
- Do you think you have excessive hunger?
- If yes, when does that happen or is it all the time?
- Are there reasons other than hunger that you eat?
- Are portions a concern for you?
- Do you ever eat in the middle of the night?
- Do you have any other vulnerabilities around food or food choices?
- Can you tell me what you ate and drank yesterday from the time you got up until the time you went to bed?

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# Ideal Key Components of the Physical Exam

**Vitals**

- BMI, BP, Waist Circumference (BMI <35)

**Adipocyte Distribution**

**Underlying Medical Contributors**

- Thyroid exam (Hypothyroidism)
- Lymphedema/lipedema
- Hirsutism, acne (PCOS)
- Moon facies, prominent supraclavicular and dorsocervical fat pad, striae (Cushing's)

**Health Consequences**

- Acanthosis Nigricans (Insulin Resistance)
- Neck Circumference and Mallampati Score (OSA)
- Signs of cardiac and/or liver disease

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## Laboratory Testing

### Routine Labs

- Hemoglobin A1c
- Complete Metabolic Panel
- Thyroid stimulating hormone (TSH)
- Vitamin D level
- Fasting lipid levels

### If Indicated

- **Complete Blood Count (FIB-4 calculation)**
- **Salivary Midnight Cortisol x 2**
- Uric acid
- Urinalysis (including urine albumin)
- Fasting Insulin
- Total Testosterone and DHEA-S

### Other

- Liver Ultrasound and/or GI referral (elevated FIB-4)
- Routine Cancer Screens
- Sleep Study (STOP-BANG >4)

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## Obesity Treatment Recommendations

| Treatment | BMI Category (kg/m²) | | | | |
|---|---|---|---|---|---|
| | 25-26.9 | 27-27.9 | 30-34.9 | 35-35.9 | ≥ 40 |
| **Diet, physical activity and behavioral therapy** | Yes, with comorbidities | Yes, with comorbidities | Yes | Yes | Yes |
| **Pharmacotherapy** | | Yes, with comorbidities | Yes | Yes | Yes |
| **Surgery** | | | | Yes, with comorbidities | Yes |
| **Endoscopic Sleeve (ESG)** | | | BMI of 30-50 | | |

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Questions?

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## Guidelines for Obesity Treatment

- 2013 AHA/ACC/TOS Guideline for the Management of Overweight and Obesity in Adults
- 2015 Obesity Algorithm – ASBP
- 2015 Pharmacological Management of Obesity: An Endocrine Society Clinical Practice Guideline
- 2020 Canadian Medical Association Clinical Practice Guideline https://obesitycanada.ca/guidelines/
- 2022 AGA Clinical Practice Guideline on Pharmacological Interventions for Adults With Obesity https://www.gastrojournal.org/article/S0016-5085(22)01026-5/fulltext
- 2022 American Society for Metabolic and Bariatric Surgery (ASMBS) and International Federation for the Surgery of Obesity and Metabolic Disorders (IFSO): Indications for Metabolic and Bariatric Surgery https://www.soard.org/article/S1550-7289(22)00641-4/fulltext

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