**Algorithm of obesity in individuals older than 65 years**

**Evaluate functional status, sarcopenia, and cognitive status**

**FRAILTY (FRAIL scale)**

**Questions**
- Fatigue: “Did you feel tired all or most of the time during the past 4 weeks?”
- Resistance: Do you have any difficulty walking up 10 steps without resting?
- Ambulation: Do you have any difficulty walking several hundred yards?
- Illnesses: Did a doctor ever tell you that you have >3 of the following illnesses?
  - Asthma
  - Heart disease
  - Cancer
  - Chronic lung disease
  - Heart attack
  - Congestive heart failure
  - Arthritis
  - Migraine
  - Ulcers
  - Type 2 diabetes
  - Depression

**Answers**
- **a** Yes, do the next question
- **b** No, do not proceed

**Assessments**
- **Loss of weight:** “Have you lost >5% of your weight in the last year?”

**STRENGTH**
- How much difficulty do you have in lifting and carrying 4.5 kg?
- 0 = None
- 1 = Some
- 2 = A lot of difficulty

**ASSISTANCE IN WALKING**
- How much difficulty do you have walking across the room?
- 0 = None
- 1 = Some
- 2 = A lot of difficulty

**RISE FROM A CHAIR**
- How much difficulty do you have transferring from a chair or bed?
- 0 = None
- 1 = Some
- 2 = A lot of difficulty

**CLIMB STAIRS**
- How much difficulty do you have climbing a flight of 10 stairs?
- 0 = None
- 1 = Some
- 2 = A lot of difficulty

**FALLS**
- How many times have you fallen in the past year?
- 0 = None
- 1 = 1-2 falls
- 2 = 3-4 falls
- 3 = 5 or more falls

**SARCOPENIA (SARC-F scale)**

**STRENGTH**
- How much difficulty do you have in lifting and carrying 4.5 kg?
- 0 = None
- 1 = Some
- 2 = A lot of difficulty

**ASSISTANCE IN WALKING**
- How much difficulty do you have walking across the room?
- 0 = None
- 1 = Some
- 2 = A lot of difficulty

**RISE FROM A CHAIR**
- How much difficulty do you have transferring from a chair or bed?
- 0 = None
- 1 = Some
- 2 = A lot of difficulty

**CLIMB STAIRS**
- How much difficulty do you have climbing a flight of 10 stairs?
- 0 = None
- 1 = Some
- 2 = A lot of difficulty

**FALLS**
- How many times have you fallen in the past year?
- 0 = None
- 1 = 1-2 falls
- 2 = 3-4 falls
- 3 = 5 or more falls

**Cognitive Impairment (Pfeiffer test)**

**Question**
- What is your date of birth? (dd/mm/yyyy)
- What is the next presidential candidate's name?
- What's the name of the previous president?
- What is the name of your mother’s surname?
- Can you count backward from 20 by 3’s?

**TOTAL NO. OF ERRORS**

<table>
<thead>
<tr>
<th>TOTAL NO. OF ERRORS</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>No risk factors.</td>
<td>Normal.</td>
<td>Mild cognitive impairment.</td>
<td>Moderate cognitive impairment.</td>
<td>Severe cognitive impairment.</td>
<td>Total (8-10)</td>
</tr>
</tbody>
</table>

**REduced**

**Intensify non-pharmacological interventions and maintain quality of life**
(avoid restrictive diets in this patient profile)

**ConserVed**

**Comorbidities**

- **Type 2 diabetes**
- **Cardiovascular disease**
- **Chronic kidney disease / albuminuria**
- **Non-alcoholic fatty liver disease / fatty liver (FLD)**
- **Obesity/Obesity-related conditions**
- **Gastroesophageal reflux disease**
- **Hypogonadism**
- **Depression**

**Edmonton Obesity Staging System (EOSS)**

<table>
<thead>
<tr>
<th>Stage</th>
<th>Cardiovascular factors</th>
<th>Psychosocial/functional factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>No risk factors.</td>
<td>No functional impairment or inactivity.</td>
</tr>
<tr>
<td>1</td>
<td>Subclinical risk factors: Hypertension, metabolic syndrome, dyslipidemia, diabetes, CVD.</td>
<td>Mild limitations and/or mild impairment of well-being.</td>
</tr>
<tr>
<td>2</td>
<td>Established risk factors: New-onset diabetes, hypertension, dyslipidemia, CVD.</td>
<td>Moderate limitations and/or moderate impairment of well-being.</td>
</tr>
<tr>
<td>3</td>
<td>Advanced risk factors: Multi-vascular disease, multi-vascular disease, diabetes, CVD, or severe CVD risk.</td>
<td>Severe limitations and/or severe impairment of well-being.</td>
</tr>
<tr>
<td>4</td>
<td>Severe multivascular or multi-vascular disease.</td>
<td>Severe limitations and/or severe impairment of well-being.</td>
</tr>
</tbody>
</table>

**Healthy lifestyle**

- Healthy eating habits.
- Adapted physical exercise.
- Do not smoke.
- Practice healthy sleep habits.

**If there are comorbidities and/or EOSS >2**

**Drugs**

- Liraglutide 3.0 mg (SC 3 mg/24 h).
- Semaglutide 2.4 mg (SC 2 mg/weekly).
- Liraglutide 3.0 mg (SC 3 mg/24 h).
- Semaglutide 2.4 mg (SC 2 mg/weekly).

**Bariatric surgery:** Evaluate individually in select cases.

**Evaluation and withdrawal of obesogenic drugs:**

- i. Diet, exercise, and lifestyle interventions.
- ii. Antidepressants, Anticonvulsants, Antipsychotics, Anticoagulants.
- iii. Glucocorticoids, Antihistamines, Antidiabetics: sulfonylureas, glinides, thiazolidinediones, insulin.

**Healthy eating habits**:

- Mediterranean diet.
- Healthy eating habits.
- Adapted physical exercise.
- Do not smoke.
- Practice healthy sleep habits.

**Laboratory evaluation**:

- Blood samples: CRP, FSH, T4, Hb, CRP, LDL, HDL, Fasting Plasma Glucose.

**Evaluation of comorbidities**:

- Cardiovascular disease.
- Diabetes (Type 1, 2).
- Chronic kidney disease.
- Non-alcoholic fatty liver disease.
- Sleep apnea.
- Hypogonadism.
- Depression.

**Healthy lifestyle**:

- Healthy eating habits.
- Adapted physical exercise.
- Do not smoke.
- Practice healthy sleep habits.

**Macro- and micronutrients**:

- Calories: adjust calories intake to maintain a healthy weight.
- Unsaturated fats.
- Virgin olive oil as the main fat.
- Maintain plasma vitamin D level >30 ng/mL.
- Soluble fiber.

**Algorithm**

1. Evaluate functional status, sarcopenia, and cognitive status.
2. Reduced: Intensify non-pharmacological interventions and maintain quality of life.
4. Edmonton Obesity Staging System (EOSS).
5. Comorbidities: Type 2 diabetes, Cardiovascular disease, Chronic kidney disease, Non-alcoholic fatty liver disease, Gastroesophageal reflux disease, Hypogonadism, Depression.
6. Healthy lifestyle: Healthy eating habits, Adapted physical exercise, Do not smoke, Practice healthy sleep habits.
7. If there are comorbidities and/or EOSS >2.
8. Drugs: Liraglutide 3.0 mg (SC 3 mg/24 h), Semaglutide 2.4 mg (SC 2 mg/weekly), Liraglutide 3.0 mg (SC 3 mg/24 h), Semaglutide 2.4 mg (SC 2 mg/weekly).

**Notes**

- The recommendation of GLP1 agonists is the first choice due to their efficacy. Re-evaluate in 12 weeks and suspend if 5% of weight is not lost.

**References**

- Diabetes SEMI. https://twitter.com/Diabetes_SEMI?ref_src=twsrc%5Egoogle%7Ctwcamp%5Eserp%5Ctwgr%5Eauthor