

PR2.F – Caso di Studio - Obesità



Descrizione del Caso

Un paziente maschio di 16 anni si presenta per una valutazione dietetica, accompagnato dalla madre.

Durante la visita, attraverso determinazioni antropometriche, viene determinato un peso di 79,3 kg, un'altezza di 168 cm, una circonferenza addominale di 93 cm e una piega addominale di 39 mm. Al momento della valutazione, il paziente non presentava patologie croniche.

- L'anamnesi mostra un'eccessiva assunzione di cibo, dovuta allo stress, e un numero di ore di sonno pari a 4,5-5 ore per notte.
- Non dichiara comportamenti a rischio (fumo, abuso di alcol o droghe)
- Non dichiara il consumo di integratori alimentari o medicinali
- In base a un questionario di frequenza alimentare, si osserva un elevato consumo di prodotti a base di farina raffinata, formaggi stagionati, piatti zuccherati, frutti di mare e insaccati.
- Pasti irregolari, idratazione ridotta (meno di 1000 ml di acqua al giorno); il consumo di liquidi è basato su bevande zuccherate e prodotti gassati
- Il livello di attività fisica è stato autodefinito molto basso, senza attività sportive organizzate o pianificate.



Domande

Utilizzando le informazioni fornite, determinare:

- la situazione antropometrica del paziente in relazione all'età
- il fabbisogno energetico per mantenere il peso attuale
- il fabbisogno nutrizionale (calorie e macronutrienti) per il riequilibrio ponderale
- le raccomandazioni di base per l'attività fisica
- aspettative a breve termine (10 settimane)
- approccio dietetico in caso di mancato raggiungimento dell'obiettivo prefissato
- aspettative a lungo termine (2 anni)



Example of a dietary approach to the presented case

Anthropometric and nutritional assessment

According to the theoretical data used, a normal resting metabolic rate and a total caloric requirement for maintenance of 2749 kcal/day are established.

| | |
|--|---|
| 16y 0m (192 months), male | |
| | Value Imperial %ile Z-score 50%ile |
| Weight (kg) | 79.3 174.8 lb 92% 1.38 60.9 |
| Stature (cm) | 168 66.1 in 24% -0.72 174 |
| Wt-for-stature (kg) | |
| BMI-for-age | 28.1 96% 1.73 20.5 |
| <ul style="list-style-type: none"> • Obese (96%ile, BMI at 95th%ile is 27.5) | |

| Estimated Daily Caloric Needs | 2,749 kcal/day |
|-------------------------------|---|
| Macronutrients: | |
| Macronutrient | Recommended Intake Per Day |
| Carbohydrate | 309 - 447 grams ⓘ |
| Total Fiber | 38 grams |
| Protein | 67 grams |
| Fat | 76 - 107 grams ⓘ |
| Saturated fatty acids | As low as possible while consuming a nutritionally adequate diet. |
| Trans fatty acids | As low as possible while consuming a nutritionally adequate diet. |
| α-Linolenic Acid | 1.6 grams ⓘ |
| Linoleic Acid | 16 grams ⓘ |
| Dietary Cholesterol | As low as possible while consuming a nutritionally adequate diet. |
| Total Water | 3.3 liters (about 14 cups) ⓘ |

Establishing nutritional requirements

| Recommendation for weight reduction | | | |
|-------------------------------------|--------|----------|-----|
| <i>Caloric deficit: 500 kcal</i> | | | |
| Caloric needs: | 2200 | kcal/day | |
| | 550 | kcal/day | |
| Protein needs: | 134.15 | g/day | 25% |
| | 1.69 | g/kg | |
| Carbohydrate needs: | 990.00 | kcal/day | 45% |
| | 241.46 | g/day | |
| | 3.04 | g/day | |
| Lipid needs: | 660.00 | kcal/zi | 30% |
| | 70.97 | g/day | |
| | 0.89 | g/day | |

- Low-intensity physical activity program: walking/cycling/swimming, 30-45 minutes/day, with 60-second breaks depending on tolerance



Reevaluation at ten-week interval

- Height: 1.68 m
- Weight: 74.6 kg (-4.7 kg from the initial weight)
- Abdominal circumference: 89 cm
- Abdominal skin fold: 34 mm
- No known pathologies
- Hydration: 1.8 l/day
- Physical activity level: low (on average 30 min of low-intensity sport)

| 16y 2m (194 months), male | | | | | |
|---------------------------|-------|----------|------|---------|--------|
| | Value | Imperial | %ile | Z-score | 50%ile |
| Weight (kg) | 74.6 | 164.5 lb | 85% | 1.03 | 61.6 |
| Stature (cm) | 168 | 66.1 in | 22% | -0.78 | 174 |
| Wt-for-stature (kg) | | | | | |
| BMI-for-age | 26.4 | | 93% | 1.44 | 20.6 |

• **Overweight** (93%ile, BMI >= 85%ile)

Resting metabolic rate testing

| BMR values | |
|--------------------------------|----------------------|
| Test type | Basal metabolic rate |
| Steady state interval | 12:03:38, 0:04:41 |
| Deviation of V'O ₂ | 0.108 |
| Deviation of V'CO ₂ | 0.116 |
| Deviation of RQ | 0.062 |
| BMR | 1735.942 |
| BMR/Weight | 23.27 kcal/d/kg |

| Recommendation for weight reduction | | | |
|-------------------------------------|--------|----------|-----|
| No caloric deficit | | | |
| Caloric needs: | 1750 | kcal/day | |
| | 525 | kcal/day | |
| Protein needs: | 128.05 | g/day | 30% |
| | 1.61 | g/kg | |
| Carbohydrate needs: | 700.00 | kcal/day | |
| | 170.73 | g/day | 40% |
| | 2.15 | g/day | |
| Lipid needs: | 525 | kcal/di | |
| | 56.45 | g/day | 30% |
| | 0.71 | g/day | |

- Low-intensity physical activity programme with interspersed moderate activity: walking/cycling/swimming, 60 minutes/day, with breaks according to tolerance + bodyweight activity for the upper trend
- A varied food plan is initiated, with all food groups, 3 main meals + 2 snacks, with an average of 1750 kcal/day
- Behavioral therapy is recommended

Evaluation at an interval of ≈ 2 years

- ▶ Weight: 68.1 kg
- ▶ Height: 172 cm
- ▶ Abdominal circumference: 71 cm
- ▶ Physical activity level: moderately active, constant
- ▶ Increased self-esteem and confidence
- ▶ Positive integration into society
- ▶ Healthy relationship with food, predominating nutritious foods
- ▶ No yo-yo effect
- ▶ Improved rest level (over 7 hours of sleep per night)

| 18y 1m (217 months), male | | | | | |
|---------------------------|-------|----------|------|---------|--------|
| | Value | Imperial | %ile | Z-score | 50%ile |
| Weight (kg) | 68.1 | 150.1 lb | 53% | 0.07 | 67.4 |
| Stature (cm) | 172 | 67.7 in | 28% | -0.59 | 176 |
| Wt-for-stature (kg) | | | | | |
| BMI-for-age | 23 | | 64% | 0.35 | 21.9 |

Weight evolution after personalized dietary intervention

16y 0m (192 months), male

| | Value | Imperial | %ile | Z-score | 50%ile |
|----------------------------|-------|----------|------|---------|--------|
| Weight (kg) | 79.3 | 174.8 lb | 92% | 1.38 | 60.9 |
| Stature (cm) | 168 | 66.1 in | 24% | -0.72 | 174 |
| Wt-for-stature (kg) | | | | | |
| BMI-for-age | 28.1 | | 96% | 1.73 | 20.5 |

- **Obese** (96%ile, BMI at 95th%ile is 27.5)



- The patient is with normal weight
- Dietary monitoring is continued at 1-year intervals or as needed
- Psychotherapy is resumed as needed

18y 1m (217 months), male

| | Value | Imperial | %ile | Z-score | 50%ile |
|----------------------------|-------|----------|------|---------|--------|
| Weight (kg) | 68.1 | 150.1 lb | 53% | 0.07 | 67.4 |
| Stature (cm) | 172 | 67.7 in | 28% | -0.59 | 176 |
| Wt-for-stature (kg) | | | | | |
| BMI-for-age | 23 | | 64% | 0.35 | 21.9 |