Questions for Case 1 – Pediatric Weight Management


I. Understanding the Disease and Pathophysiology

1. **Current research indicates the cause of childhood obesity is multifactorial. Briefly outline the roles of genetics, environment, and nutritional intake in development of obesity in children.**
   
   - In the role of genetics, a variety of factors apply, being that genes determine 50-70% of the predisposition to obesity. Gene imprinting may cause the child to experience a lack of perception of satiety, resulting from Prader-Willi syndrome, if the father’s allele (1 of 2) is expressed. Variations in the FTO (fat mass and obesity-associated protein) gene is linked to predisposition of child obesity, due to its effect on body mass index (BMI), especially with copies of the SNP (single-nucleotide polymorphism) in the FTO (Krause 467).
   
   - Environmental roles include the child’s areas of their eating environment; family at home, health care professionals, industry, schools, and communities. Lack of endeavor in areas outside the home may augment nutritional quality, information, counseling, and access to opportunities, while families can exert influence by choosing their child’s environment, food choices, increased physical activity, and spending time together. As well as following basic routines, such as spending regular meals as a family, obtaining adequate sleep-time, and limiting screen-viewing time, will cause a higher prevalence in obesity (Anderson, 2010; Krause 403).
   
   - Children’s nutritional intake may be based on the choice of lifestyle (sedentary). This may cause children to choose more food and eating decisions, larger portion sizes, and decreased physical activity (Piernas and Popkin, 2010; Krause 402). Consuming frequent, small meals and snacks should be offered at regular times, using developmentally appropriate, nutrient-dense foods. This optimizes the smaller stomach capacity of the young child and provides structure and predictability for the eating environment (Krause 403).

2. **Describe health consequences of overweight and obesity for children.**
   
   The longer a child has been overweight, the more likely the child is to be overweight or obese during adolescence and adulthood. Consequences of overweight in childhood include psychosocial difficulties such as discrimination from others, a negative self-image, depression, and decreased socialization (Krause 402). Many overweight children have one or more cardiovascular risk factors such as hyperlipidemia, hypertension, or hyperinsulinemia (Daniels, 2009). An even more dramatic health consequence of being overweight is the rapid increase in the incidence of type 2 diabetes in children and adolescents, which has a serious effect on adult health, with development of other chronic diseases (Krause 402). Adolescents are almost three times more likely to experience iron deficiency than their normal-weight peers despite having similar dietary intakes of iron and vitamin C (Tussing-Humphreys et al., 2009) (Krause 417). The effect of obesity on pulmonary lung function for children is linked to asthma, atopy, sleep apnea, and/or altered lung function tests (PubMed 2009). Just as well, endocrine conditions, such as
hypothyroidism, growth deficiency, or resistance and cortisol excess, may lead to obesity (NCBI 2014).

3. **Jamey has been diagnosed with obstructive sleep apnea. Define sleep apnea and the physical changes that occur due to obesity that contribute to sleep apnea.**

Classified as a common disorder, sleep apnea is, one or more, pauses in breathing during sleep, which may last from a few seconds to minutes, followed by normal breathing, with a possible loud snort. This causes disruption in sleep quality and risk of excessive daytime sleepiness. Obstructive sleep apnea is the most common type, found most common in those who are overweight, in which, during sleep, the airway becomes blocked. (NHLBI 2012). Any child’s body mass index (BMI) in the 85th percentile, or higher with complications of obesity, should be assessed for sleep apnea (Krause 483). As a result of sleep apnea, acute respiratory acidosis can occur, which is caused by decreased ventilation and consequent carbon dioxide retention (Krause 187).

II. **Understanding the Nutrition Therapy**

4. **What are the guidelines for the process of weight loss in the pediatric population?**

In the process of weight loss in the pediatric population, guidelines should incorporate diet, level of physical activity, nutrition counseling, and parent participation. General recommendation of weight loss is based towards overweight children, ages 2-5 years old, and/or if they have any medical complications (EAL, 2007). The guidelines include stressing the importance of fruits and vegetables at every meal, encourage breakfast daily, limit snacking during the day, especially with processed foods, encourage set times for healthy snacks to discourage grazing, limit juice, sports drinks, soda, any other sweetened beverages, and to drink water to satisfy thirst. Focus should be towards fruits, vegetables, whole grains, lean meats, and low-fat cheeses and yogurt. Foods with high fat or sugar content, including fried foods, fast food, and processed foods, should be limited. If dessert is offered, the ending to the meal should be normal, without bribing or rewarding the child for finishing their plate (GHC 2012).

5. **Under what circumstances might weight loss in overweight children not be appropriate?**

Weight loss in overweight children might not be appropriate if they have HIV/AIDS, are obese, general pregnancy, metabolic diseases (specific diseases that may cause obesity where weight loss diets won’t help), psychological reasons; eating disorder(s), if it is promoting restrictive behaviors, if growth is still occurring, the age growth stops (when girls first have their period, they may not grow much more after that). Generally, weight loss is not recommended for children who are still growing (Wright, M., 2015).

III. **Nutrition Assessment**

6. **Evaluate Jamey’s weight using the CDC growth charts: What is Jamey’s BMI percentile? How is her weight status classified? Use the growth chart to determine Jamey’s optimal weight and height for age.**
Based on the CDC's (Center for Disease & Control) growth charts, Jamey’s BMI (24.9) places her in the 97th percentile for females her age, classified with a weight status of obese. Jamey’s optimal weight is 77 lbs., placed within the 50th percentile, based on the CDC’s growth chart (CDC, 2016).

7. Identify two methods for determining Jamey’s energy requirements other than indirect calorimetry, and then use them to calculate Jamey’s energy requirements.

Weight Maintenance TEE for Overweight and At-Risk for Overweight Girls 3-18 Years (BMI >85th Percentile for Overweight):

- $389 - (41.2 \times 10 [y]) + 1 \times (15.0 \times 52.3 [kg] + 701.6 \times 1.45 [m])$
- $389 - 412 + 1 \times (15.0 \times 52.3 + 701.6 \times 1.45)$
- $389 - 412 + 1 \times (784.5 + 1017.3)$
- $389 - 412 + 1802 = 1,779$
- Physical Activity coefficient (PA) = 1.00 if Physical Activity Level (PAL) is estimated to be $\geq 1.0 < 1.4$ (sedentary) (p.28, 2012)
- Estimated Energy Requirements (EER) (kcal/day): TEE + Energy Deposition
- $1779 + 25$ (kcal for energy deposition) = 1,804 (p.27)
Kcal/cm

- 12-15 (kcal for sedentary lifestyle)
- 12 x 145 = 1,740 kcal
- 15 x 145 = 2,175 kcal

8. **Dietary factors associated with increased risk of overweight are increased dietary fat intake and increased calorie-dense beverages. Increased fruit and vegetable intake is associated with decreased risk of overweight.**

- **Identify calorie dense beverages from Jamey’s diet recall.**
  - Whole milk, Sweet tea, and Coca-Cola

- **Identify foods that are increased in dietary fat from Jamey’s diet recall.**
  - Bologna and cheese sandwich(es) with mayonnaise, twinkies, Frito chips, fried chicken legs and thigh, and fried okra.

- **What foods in Jamey’s diet fall into the fruit / vegetable category?**
  - Apple juice, okra, and jelly.

- **Calculate the percent of kcal from each macronutrient.**
  - Total kcal = 5,751 kcal:
    - Fat - 43% (2473 kcal), Carbohydrate - 42% (2,415 kcal),
    - Protein - 16% (920 kcal).
  - Fat: $\frac{2473}{5751} = 0.43 \times 100 = 43\%$
  - Carbohydrate: $\frac{2415}{5751} = 0.4199 \times 100 = 42\%$
  - Protein: $\frac{920}{5751} = 0.1599 \times 100 = 16\%$

- **Calculate the percent of her kcal that is provided by fluids for Jamey’s 24-hour recall.**
  - 18.3% of total kcal provided by fluids for Jamey's 24-hour recall.
    - $521 \text{ kcal (whole milk)} + 57 \text{ kcal (apple juice)} + 117 \text{ kcal (coffee w/ cream & sugar)} + 190 \text{ kcal (sweet tea)} + 136 \text{ kcal (coca cola)} = 1051 \text{ kcal}/5751 \text{ kcal} = 0.1827 \times 100 = 18.3\%$

9. **Use the ChooseMyPlate online tool (available from www.choosemyplate.gov; click on “Daily Food Plans” under “SuperTracker and Other Tools”) to generate a customized daily food plan. Using this eating pattern, plan a 1-day menu for Jamey.**

<table>
<thead>
<tr>
<th>Breakfast</th>
<th>Lunch</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 large egg(s) Scrambled eggs (no milk added), cooked with no fat</td>
<td></td>
</tr>
<tr>
<td>1 regular slice Bread, 100% whole wheat</td>
<td></td>
</tr>
<tr>
<td>1 cup 1% milk</td>
<td></td>
</tr>
<tr>
<td>½ cup Blackberries, raw</td>
<td></td>
</tr>
<tr>
<td>½ cup String beans, fresh, cooked (with salt, no fat added)</td>
<td></td>
</tr>
<tr>
<td>1 cup Orange juice, freshly squeezed</td>
<td></td>
</tr>
<tr>
<td>1 medium breast Chicken, breast, boneless, skinless, grilled</td>
<td></td>
</tr>
</tbody>
</table>
10. Now enter and assess the 1-day menu you planned for Jamey using the MyPlate SuperTracker online tool (http://www.choosemyplate.gov/supertracker-tools/supertracker.html). Does your menu meet macro- and micronutrient recommendations for Jamey?

Based on Jamey's second 24-hour recall, and the menu prepared, her macronutrient intake had reached its target, as well her micronutrient intake, with slight deficiencies in Vitamin E and fiber.

### Jamey's Nutrients Report
**12/05/16 - 12/05/16**

Your plan is based on a **1600 Calorie** allowance.

<table>
<thead>
<tr>
<th>Nutrients</th>
<th>Target</th>
<th>Average</th>
<th>Status</th>
</tr>
</thead>
</table>

---

| Dinner | · 1 medium pita (5-1/4" across) Bread, pita, 100% whole wheat  
· 2 medium slice (1/4" thick) Tomato, raw  
· 3 ounce(s), cooked, boneless Salmon, baked or broiled, without fat  
· ¼ cup Rice, white, cooked (no salt or fat added)  
· 1 cup Sweet potatoes (yams), baked, peel eaten (no salt or fat added)  
· 1 cup Milk, low fat (1%) |
| Snack(s) | · 1 small (6" to 6-7/8" long) Banana, raw  
· 1 container (8 oz) Yogurt, plain, low fat  
· 1 medium carrot Carrot, raw  
· 1 tablespoon Salad dressing, ranch, fat free |
<table>
<thead>
<tr>
<th>Nutrient</th>
<th>Eaten</th>
<th>Eaten</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Calories</td>
<td>1600 Calories</td>
<td>1554 Calories</td>
<td>OK</td>
</tr>
<tr>
<td>Protein (g)**</td>
<td>34 g</td>
<td>104 g</td>
<td>OK</td>
</tr>
<tr>
<td>Protein (% Calories)**</td>
<td>10 - 30% Calories</td>
<td>27% Calories</td>
<td>OK</td>
</tr>
<tr>
<td>Carbohydrate (g)**</td>
<td>130 g</td>
<td>234 g</td>
<td>OK</td>
</tr>
<tr>
<td>Carbohydrate (% Calories)**</td>
<td>45 - 65% Calories</td>
<td>60% Calories</td>
<td>OK</td>
</tr>
<tr>
<td>Dietary Fiber</td>
<td>26 g</td>
<td>25 g</td>
<td>Under</td>
</tr>
<tr>
<td>Total Sugars</td>
<td>No Daily Target or Limit</td>
<td>96 g</td>
<td>No Daily Target or Limit</td>
</tr>
<tr>
<td>Added Sugars</td>
<td>&lt; 40 g</td>
<td>2 g</td>
<td>OK</td>
</tr>
<tr>
<td>Total Fat</td>
<td>25 - 35% Calories</td>
<td>14% Calories</td>
<td>Under</td>
</tr>
<tr>
<td>Saturated Fat</td>
<td>&lt; 10% Calories</td>
<td>5% Calories</td>
<td>OK</td>
</tr>
<tr>
<td>Polyunsaturated Fat</td>
<td>No Daily Target or Limit</td>
<td>3% Calories</td>
<td>No Daily Target or Limit</td>
</tr>
<tr>
<td>Monounsaturated Fat</td>
<td>No Daily Target or Limit</td>
<td>4% Calories</td>
<td>No Daily Target or Limit</td>
</tr>
<tr>
<td>Linoleic Acid (g)**</td>
<td>10 g</td>
<td>3 g</td>
<td>Under</td>
</tr>
<tr>
<td>Linoleic Acid (% Calories)**</td>
<td>5 - 10% Calories</td>
<td>2% Calories</td>
<td>Under</td>
</tr>
<tr>
<td>α-Linolenic Acid (% Calories)**</td>
<td>0.6 - 1.2% Calories</td>
<td>0.2% Calories</td>
<td>Under</td>
</tr>
<tr>
<td>α-Linolenic Acid (g)**</td>
<td>1.0 g</td>
<td>0.4 g</td>
<td>Under</td>
</tr>
<tr>
<td>Omega 3 - EPA</td>
<td>No Daily Target or Limit</td>
<td>450 mg</td>
<td>No Daily Target or Limit</td>
</tr>
<tr>
<td>Omega 3 - DHA</td>
<td>No Daily Target or Limit</td>
<td>658 mg</td>
<td>No Daily Target or Limit</td>
</tr>
<tr>
<td>Cholesterol</td>
<td>&lt; 300 mg</td>
<td>362 mg</td>
<td>Over</td>
</tr>
<tr>
<td>Minerals</td>
<td>Target</td>
<td>Average Eaten</td>
<td>Status</td>
</tr>
<tr>
<td>Nutrient</td>
<td>Target</td>
<td>Average Eaten</td>
<td>Status</td>
</tr>
<tr>
<td>-------------</td>
<td>--------------</td>
<td>---------------</td>
<td>--------</td>
</tr>
<tr>
<td>Calcium</td>
<td>1300 mg</td>
<td>1322 mg</td>
<td>OK</td>
</tr>
<tr>
<td>Potassium</td>
<td>4500 mg</td>
<td>4549 mg</td>
<td>OK</td>
</tr>
<tr>
<td>Sodium**</td>
<td>&lt; 2200 mg</td>
<td>2138 mg</td>
<td>OK</td>
</tr>
<tr>
<td>Copper</td>
<td>700 µg</td>
<td>1512 µg</td>
<td>OK</td>
</tr>
<tr>
<td>Iron</td>
<td>8 mg</td>
<td>12 mg</td>
<td>OK</td>
</tr>
<tr>
<td>Magnesium</td>
<td>240 mg</td>
<td>369 mg</td>
<td>OK</td>
</tr>
<tr>
<td>Phosphorus</td>
<td>1250 mg</td>
<td>1793 mg</td>
<td>OK</td>
</tr>
<tr>
<td>Selenium</td>
<td>40 µg</td>
<td>153 µg</td>
<td>OK</td>
</tr>
<tr>
<td>Zinc</td>
<td>8 mg</td>
<td>10 mg</td>
<td>OK</td>
</tr>
<tr>
<td>Vitamin A</td>
<td>600 µg RAE</td>
<td>2507 µg RAE</td>
<td>Over</td>
</tr>
<tr>
<td>Vitamin B6</td>
<td>1.0 mg</td>
<td>3.0 mg</td>
<td>OK</td>
</tr>
<tr>
<td>Vitamin B12</td>
<td>1.8 µg</td>
<td>6.5 µg</td>
<td>OK</td>
</tr>
<tr>
<td>Vitamin C</td>
<td>45 mg</td>
<td>203 mg</td>
<td>OK</td>
</tr>
<tr>
<td>Vitamin D</td>
<td>15 µg</td>
<td>15 µg</td>
<td>OK</td>
</tr>
<tr>
<td>Vitamin E</td>
<td>11 mg AT</td>
<td>6 mg AT</td>
<td>Under</td>
</tr>
<tr>
<td>Vitamin K</td>
<td>60 µg</td>
<td>45 µg</td>
<td>Under</td>
</tr>
<tr>
<td>Folate</td>
<td>300 µg DFE</td>
<td>388 µg DFE</td>
<td>OK</td>
</tr>
<tr>
<td>Thiamin</td>
<td>0.9 mg</td>
<td>1.5 mg</td>
<td>OK</td>
</tr>
<tr>
<td>Riboflavin</td>
<td>0.9 mg</td>
<td>2.4 mg</td>
<td>OK</td>
</tr>
<tr>
<td>Niacin</td>
<td>12 mg</td>
<td>28 mg</td>
<td>OK</td>
</tr>
<tr>
<td>Choline</td>
<td>375 mg</td>
<td>520 mg</td>
<td>OK</td>
</tr>
</tbody>
</table>
11. Why did Dr. Lambert order a lipid profile and blood glucose tests? What lipid and glucose levels are considered altered (i.e. outside of normal limits) for the pediatric population? Evaluate Jamey’s relevant lab results.

A lipid profile evaluates cholesterol, high density lipoproteins (HDL), low density lipoproteins (LDL), and triglycerides. Within the pediatric population, cholesterol levels above 170 mg/dL, an HDL above 55 mg/dL (>55 F, >45 M), an LDL above 110 mg/dL, and an LDL/HDL ratio above 3.22 (<3.22 F, <3.55 M) is considered altered. Jamey’s lab results indicate normal for cholesterol (165 mg/dL; within normal limits), an altered LDL/HDL ratio (3.23), a low HDL, and high LDL, which can be associated with cardiovascular risks and/or other chronic diseases (Krause 133, 424). Blood glucose tests measures glucose levels on patients with diabetes mellitus. Based on Jamey’s family history, her mother and grandmother have gestational diabetes, type 2. Normal range for glucose levels, within pediatric population, is between 70-110 mg/dL. Jamey’s lab results demonstrate altered glucose levels of 112 mg/dL.

12. State behaviors associated with increased risk of overweight.

In your assessment, what behaviors associated with increased risk for overweight does Jamey exhibit?

Jamey exhibits behaviors associated with her nutrient consumption; greater availability of high-energy-dense foods and sugar sweetened beverages. Based on her 24-hour recall, she is served large portion sizes, in which she may not even realize (CDC 2016). Low physical activity contributes to this behavior; her elementary school discontinued physical education, and her favorite activities are reading and video games.

13. You talk with Jamey and her parents, who are friendly and cooperative. Jamey’s mother asks if it would help for them to not let Jamey snack between meals and to reward her with dessert when she exercises. What would you tell them?

Snacking in between meals has the potential to provide satiety and prevent overeating at the subsequent meal. Its effect on obesity risk promotes appetite control, which could reduce obesity (PubMed, 2016). Using dessert as a reward may cause Jamey to want to expect more when trying new foods or finishing her meals. She may even decide that these foods are more beneficial and value them more, in comparison to healthy foods and snacks. It is a habit that will develop throughout her life and be hard to break ((Kosharek, S.M., 2013).

IV. Nutrition Diagnosis

14. Select one nutrition problem from each of the domains Clinical, Intake and Behavioral/Environmental. Complete a PES statement for each (you are writing 3 PES statements, one from each domain).

- Intake Domain: Excessive Energy Intake* (NI-1.3) as related to food and nutrition related knowledge deficit concerning energy intake, as evidenced by patient’s 24-hour recall with intake of high caloric density or large portions of foods/beverages (e.g. twinkies, fried chicken legs, coca cola, sweet tea, etc.).
• Intake Domain: Excessive Carbohydrate Intake (NI-5.8.2) as related to food and nutrition knowledge deficit concerning appropriate amount of carbohydrate intake, as evidenced by patient’s 24-hour recall stating large consumption of simple & complex carbohydrates, such as 12 oz. Coca-Cola, 20 oz. sweet tea, twinkies, enriched bread etc.
• Behavioral-Environmental Domain: Physical Inactivity* (NB-2.1) as related to sedentary lifestyle, as evidenced by patient’s BMI (95th percentile), lack of sleep, and leisure activities of reading and video games.
• Behavioral-Environmental Domain: Undesirable Food Choices* (NB-1.7) as related to high level of fatigue, as evidenced by physician history indicating patient experiencing restlessness during sleep.
• Clinical Domain: Overweight/Obesity (NC-3.3) as related to disordered eating pattern, as evidenced by large portion of meals and snacks from 24-hour recall (e.g. 2 breakfast burritos, fried chicken, 1 cup mashed potatoes, etc.).
• Clinical Domain: Excessive Growth Rate (NC-3.6) as related to frequent intake of energy dense foods, as evidenced by patient steadily gaining weight over previous years (10 lbs. per year).

V. Nutrition Intervention

15. For each PES statement written, establish a measurable, ideal goal (based on signs and symptoms) and an appropriate intervention (based on etiology) (re-write your PES statement from above stating an ideal goal and an intervention underneath each PES).

• Intake Domain: Excessive Energy Intake* (NI-1.3):
  ○ Modify distribution, type, or amount of food and nutrients within meals or at specified time (ND-1.2): Based on patient’s 24-hour recall, total of 5,751 kcal/day, a target of 1,400 kcal/day should be aimed. Incorporating meal-by-meal substitutions with reduced dietary fat foods and energy-dense beverages to manage caloric intake; e.g. grilled over fried, low-fat over whole, water over carbonated/sweet.
• Behavioral-Environmental Domain: Physical Inactivity* (NB-2.1):
  ○ Recommended modification (E-1.5): Suggest exercises/physical activity, perhaps by enrolling in an after-school program, and monitor; “are you reading less?, playing less video games?”, change in BMI, “is she sleeping better?”
• Clinical Domain: Overweight/Obesity (NC-3.3):
  ○ Purpose of nutrition education (E-1.1): Portion control education applied towards meals and snacks.
  ○ General/healthful diet (ND-1.1): Educate patient, and parents, about different food groups and to make healthy food choices by substituting energy dense foods with greater availability of low-caloric foods

16. Mr. and Mrs. Whitmer ask about using over-the-counter diet aids, specifically Alli (orlistat). What would you tell them?

Orlistat is a lipase inhibitor for weight loss; reduces the absorption of fat by binding to lipase (Krause 220). It is not to be confused with an appetite suppressant and, depending on the person, it may be difficult to maintain a low-fat diet. Malabsorption is possible with fat-soluble
vitamins A, D, E, and K, being that they require fat for optimal absorption (Krause 221). Alli, specifically, is FDA approved; however, there are investigations of liver injury and pancreatitis reports, deeming it be possibly unsafe (Krause 480). Despite reports, Orlistat is a useful aide, based on clinical studies on adult populations, towards treatment of obesity, however, the FDA (Food and Drug Administration) has approved use in adolescents, age 12 and over, and has not been studied in children younger than 12 years old. Use is not recommended for Jamey due to her age (10 years old) (Conclusion Statement, 2016).

17. Mr. and Mrs. Whitmer ask about gastric bypass surgery for Jamey. Using the EAL, what are the recommendations regarding gastric bypass surgery for the pediatric population?

Gastric bypass surgery is not recommended for children under the age of 13 years old, as they are not suitable candidates. The procedure depends on the severity of the person's obesity, leading to varying results and complications reported, with research very limited in the pediatric population. The ADA evidence-analysis work group recommends more research in the surgical technique, its effects, pre- and post- nutritional intervention, physiological effects (e.g. growth risk, bone health, excess skin management, short and long term changes), and psychological aspects, such as possible disordered eating pattern, body image distortion, impact on lifestyle, and/or risk-taking behaviors (e.g. cigarette-smoking, tattoos, etc.) (EAL, 2016).

VI. Nutrition Monitoring and Evaluation

18. Based on the goals stated above, what will you monitor to evaluate Jamey’s progress with the weight loss goals / interventions that you and the patient have established?

Based on the goals stated, Jamey’s progress will be evaluated through monitoring her weight and height, to assess her BMI [percentile], meal selection (food & beverage), intake, based on another 24-hour recall, lipid profile levels (cholesterol, LDL, HDL, LDL/HDL ratio), and blood glucose levels. Intervention is based on discussion with Jamey’s parents to evaluate their involvement in Jamey’s progress; have they enrolled Jamey in an after-school program, level and time of physical activity, has there been physical activity, are meal selections healthier and less energy-dense, etc.

19. Should her parents be included in weight counseling and education? Why or why not?

Jamey’s parents should be included in weight counseling and education. Families are essential for modeling food choices, healthy eating, and leisure activities for their children by choosing their environment through nutrient-rich foods, physical activity, and/or reducing sedentary behaviors (Kraase 403). They are agents of change when trying to improve her weight status, leading to, both, short term and long term improvements (EAL, 2016).

20. Write your ADIME note for this initial nutrition assessment for Jamey (complete ADIME/SOAP note on form provided below).

<table>
<thead>
<tr>
<th>Assessment (A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>S - Subjective</td>
</tr>
<tr>
<td>Chief Complaint: Respiratory pauses during sleep (10 sec./per episode)</td>
</tr>
</tbody>
</table>
**UBW: 115#**

Weight change: *gain* / loss

Appetite: *Very good with wide variety*

Chewing / swallowing problem / sore mouth

Nausea / vomiting / diarrhea / constipation

Food intolerance / allergies: *NKA*

Diet prior to admit: *wide variety*

**Nutritional supplement:**

Vitamins / herbs: *Flintstones vitamin daily*

Food preparation: *Parent(s)*

Factors affecting food intake: *Daily food choices, limited physical activity*

*Social / cultural / religious / financial: discontinued physical education at school*

*Other: family history of gestational diabetes, type 2.*

**O - Objective**

Current Diet Order: *Regular*

**Medical Diagnosis:**

sleep apnea (related to her weight)

Past Medical History: *Significant weight gain per year (10 lb./yr.)*

**Nutrition Focused Physical Signs & Symptoms: Tonsillar hypertrophy, obesity, occasional knee pain, sleep apnea**

**Age:** 10 YO  
**Gender:** Male ✧ Female ✓

**Ht:** 4'9"  
**Wt:** 115#  
**Admit Current ✗**

**DBW:** 72#

**BMI:** 24.9 (BMI for age >95th percentile)

**% UBW:**  
**% wt Δ:**  
**% DBW:**  

**Other:**

**Nutritionally Relevant Laboratory Data:**

- **lipid profile**
  - ↑ glucose: 112 (mg/dL),
  - ↓ HDL-C: 34 (mg/dL),
  - ↑ LDL/HDL ratio: 3.23 ()

**Drug Nutrient Interaction:**

- Not applicable

**Estimated Energy Need:**

\[
1,779 \text{ kcal / day}
\]

Based on: *TEE grams/kg*

**Estimated Protein Need:**

\[
49.7 \text{ g/day}
\]

Based on: *DRI (0.95 g/kg; Ages 4-13)*

**Estimated Fluid Need:**

\[
1,779 \text{ ml / day}
\]

Based on: *1 mL/kcal*

**Nutrition Diagnosis (D)**

<table>
<thead>
<tr>
<th>A - Assessment (A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>State no more than 2 priority Nutrition Diagnosis statements in PES Format. Use Nutrition Diagnosis Terminology ND Term (Problem) related to (Etiology) as evidenced by (Signs and Symptoms):</td>
</tr>
</tbody>
</table>

1. **Intake Domain: Excessive Energy Intake** (NI-1.3) as related to food and nutrition related knowledge deficit concerning energy intake, as evidenced by patient’s 24-hour recall with intake of high caloric density or large portions of foods/beverages (e.g. twinkies, fried chicken legs, coca cola, sweet tea, etc.).
2. Behavioral-Environmental Domain: Physical Inactivity* (NB-2.1) as related to sedentary lifestyle, as evidenced by patient’s BMI (95th percentile), lack of sleep, and leisure activities of reading and video games.

3. Clinical Domain: Overweight/Obesity (NC-3.3) as related to disordered eating pattern, as evidenced by large portion of meals and snacks from 24-hour recall (e.g. 2 breakfast burritos, fried chicken, 1 cup mashed potatoes, etc.).

### Nutrition Intervention (I)

#### P - Plan

List Nutrition Interventions. Use Nutrition Intervention Terminology. (The intervention(s) must address the etiology of problems (diagnoses).

1. Modify distribution, type, or amount of food and nutrients within meals or at specified time (ND-1.2):
   - Based on patient’s 24-hour recall, total of 5,751 kcal/day, a target of 1,400 kcal/day should be aimed. Incorporating meal-by-meal substitutions with reduced dietary fat foods and energy-dense beverages to manage caloric intake; e.g. grilled over fried, low-fat over whole, water over carbonated/sweet.

2. Recommended modification (E-1.5): Suggest exercises/physical activity, perhaps by enrolling in an after-school program, and monitor; “are you reading less?, playing less video games?”, change in BMI, “is she sleeping better?”

3. Purpose of nutrition education (E-1.1): Portion control education applied towards meals and snacks.
   - General/healthful diet (ND-1.1): Educate patient, and parents, concept of food group varieties and to allow more robust sustenance preferences through substitution of energy dense foods with greater availability of low-caloric foods.

   **Goal(s):**
   - Patient will comprehend portion control and adjust meals.
   - Patient will engage in physical activity (e.g. running, bike-riding, sports, etc..)
   - Patient will understand different food groups and adjust towards robust food choices.

### Plan for Monitoring and Evaluation (M E)

List indicators for monitoring and evaluation. Use Nutrition Assessment and Monitoring & Evaluation Terminology. (Upon follow-up, the plan for monitoring would indicate if interventions are addressing the problems).

- General, healthful diet FH-1.1.1.1: monitor 24-hour recall and note improvement in 2 weeks upon return.
- Consistency FH-6.3.2- monitor by asking patient’s parent(s); “Is she reading less? Playing less video games? Is she sleeping better?”
- General, healthful diet FH-1.1.1.1: monitor by checking patient’s weight and asking general questions.

---

Signature: Hector William Ayarza

Date: 12/4/2015