NUT 116AL – CASE STUDY #1

Due 11/12/14

Instructions:

Review the pt's medical record below. Answer each question and show your calculations for each, if required. Reference all calculation formulas with the text and page number from PR (i.e., PR p. ___). You must type your answers! If not, questions will not be graded and you will receive 0 points. CS#1 is worth 50 points.

Client Name: ZZ

DOB: 2/15/89

Sex: Female

Education: High school diploma; some vocational school

Occupation: Office receptionist

Hours of work: Monday – Friday 9:00 – 5:00

Household members: Mother 45, younger siblings (18, 20)

Ethnic background: Biracial (African American and Caucasian)

Religious affiliation: None

Referring physician: D. Smith, M.D.

Chief complaint:

Family noticed that ZZ appears to stop breathing for several seconds several times a night. She is extremely irritable when she gets up in the morning. She reports getting very sleepy while at work and fell asleep at her desk yesterday.

Pt hx:

Pt describes sleep disturbance for the past several years, including: sleeping with her mouth open, cessation of breathing for at least 10 seconds (per episode), snoring, restlessness during sleep, h/o enuresis, and morning headaches. ZZ's co-workers have described deficits in attention span at work. Additionally, she has been overweight since she was born (14# at birth).

Onset: Actual date of onset unclear; pt first noticed onset of the above-mentioned symptoms about 1 year ago.

Type of Tx: None at present.

Meds: None at present.

Smoker: No

Family Hx: Mother: possible gestational DM; grandmother: type 2 DM.

PE:

General appearance: Somewhat tired and irritable 25 yo female.

Anthropometrics: ht: 5'7"; wt: 201#

Vitals: Temp 98.5°F, BP 123/80 mmHg, HR 85 bpm, RR 17 bpm.

Heart: Regular rate and rhythm, heart sounds nl.

HEENT: *Eyes*: Clear; *Ears*: Clear; *Nose*: nl mucous membranes; *Throat*: Dry mucous membranes, no inflammation, tonsillar hypertrophy

Genitalia: nl

Neurologic: Alert, oriented x 4

Extremities: No joint deformity or muscle tenderness, but pt complains of occasional knee pain. No edema.

Skin: Warm, dry; reduced capillary refill (approximately 2 seconds); slight rash in skin folds

Chest/lungs: Clear

Abdomen: Obese

Nutrition Hx:

General: Very good appetite with consumption of a wide variety of foods. Pt's physical activity level is generally low. Pt reports feeling too exhausted to exercise after work. Prefers to watch television or read books. *24-hour recall*:

Breakfast:	2 breakfast burritos, 4 oz whole milk, 4 oz apple juice, 8 oz coffee with ¼ c cream and 2 tsp sugar
Break:	12 oz coffee with ¼ c creamer and 2 tsp sugar
Lunch:	2 bologna & cheese sandwiches (2 slices enriched bread with 1 slice bologna & 1 slice American cheese with 1 Tbsp mayonnaise per sandwich), 1-oz pkg corn chips, 2 mini donuts, 12 oz Coke
Snack:	Peanut butter & jelly sandwich (2 slices enriched bread with 2 Tbsp peanut butter and 2 Tbsp grape jelly), 12 oz Coke
Dinner:	Fried chicken (2 legs and 1 thigh), 1 c mashed potatoes (made with whole milk and butter), 1 cup fried okra, 20 oz sweet tea
Snack:	3 c microwave popcorn, 12-oz Coke

Food allergies/intolerances/aversions: NKA

Previous nutrition therapy? No

Food purchase/preparation: Primarily mother

Vit/min intake: Daily MVI

Dx:

R/O OSA secondary to obesity and physical inactivity

Tx Plan:

Polysomnography to diagnose OSA, FBG, HbA1C, lipid panel, psychological evaluation, nutrition assessment

ZZ's Non-fasting Lab Values

Questions:

1. ZZ has been diagnosed with OSA. Define *sleep apnea* and explain the relationship between sleep apnea and obesity.(2 pts)

OSA stands for obstructive sleep apnea. Sleep apnea occurs during sleep, where breathing repeatedly stops and starts. During obstructive sleep apnea, there is a blockage of the upper airway. The risk of sleep apnea increases with excess adipose, especially in the throat/neck area because of excessive weight affecting respiratory function. Excess fat also compresses the lungs, causing shallow breathing.

Reference: Web MD

2. ZZ's BMI is ___31.5 ___, which indicates that she is __obese___ Class __1__. (2 pts)

Her body weight at 91.17 kg and she is 170 cm tall, or 1.7 meters**.** BMI = kg/(m^2). 91.17/(1.7^2) = 31.547

Ref: PR 09 pg. 22

3. ZZ's IBW is __61.2 kg_____ and her percent IBW is ___149%_____. (2 pts)

5'7", IBW = 100 + 5(7) = 135 lbs

135 lbs x 0.45359 kg/lb = 61.2347 kg

%IBW = current BW/ideal BW = 91.17 kg/61.2 = 148.97%

Ref: PR 09 pg. 6

4. Using the Mifflin-St Jeor equation (from PR), calculate ZZ's kcal needs for weight maintenance. (2 pts) _2,365 kcal_

RMR = (9.99 x 91.17 kg) + (6.25 x 170 cm) – (4.92 x 25 yrs) – 161

= 910.7883 + 1062.5 – 123 – 161

= 1689.2883

AF = 1.4, 1689.2883 x 1.4 = 2,365.00362

Ref: PR 09 pg. 7

5. How much protein does ZZ need? (2 pt) ___48.96 g _____

61.2 kg IBW x 0.8 g/kg = 49 g

Ref: PR 09 pg. 14

6. How much fluid does ZZ need each day? (1 pt) __2735 ml_____

   Based on her 24-hr recall, is she receiving ☐ adequate ☐x **inadequate** fluid in her diet?

Her intake: 84 oz x 30 ml/oz = 2520 ml

Recommended (method 1) = 91.17 kg x 30 ml = 2735.1 ml

Ref: PR 09 pg. 15

7. List 2 nutrients or dietary components (not kcals) that you might be concerned about for this patient, stating the reason for your concern. (2 pts)

I am concerned about her fiber intake and if she is meeting the minimum requirements for her vitamins and minerals. She does not consume many fruits and vegetables, and it does not state if she takes a daily vitamin pill. With a lack of whole grains, fruits, and vegetables in her diet, she may be lacking in both proper fiber intake and her vitamins and minerals.

8. Why did Dr. Smith order a lipid profile and blood glucose tests? What lipid and glucose levels are considered altered (i.e., outside of normal limits)? Evaluate ZZ's lab results. (2 pts)

Dr. Smith ordered a lipid profile and blood glucose tests because dyslipidemia and diabetes are common in individuals who are obese. ZZ also has a family history of type 2 DM. ZZ's cholesterol is high, HDL is low, and LDL and VLDL are in a normal but borderline high range.

9. Write an "ADIME" note for ZZ. Select two nutrition problems and complete PES statements for each within the note. For each PES statement written, establish an ideal goal (based on signs and symptoms) and an appropriate intervention (based on etiology). Include calculations on an attached sheet, including references for equations (PR p.__). (4 pts each = 16 pts)

A:

ZZ is a 25 y.o. Female who has a BMI classified in the obese class 1 category. She has family hx of type 2 DM, has prehypertension, low HDL, and high (in the normal range) LDL and VLCL. She has an excessive caloric intake with low PA. Pt reports feeling exhausted frequently. Dr. suspects that she has sleep apnea.

D:

1. Pt has excessive caloric intake r/t eating more portions than necessary in every meal, aeb BMI of 31.5 and obese abdomin.

2. Pt is not getting enough sleep r/t sleep anea, aeb pt reports of exhaustion and sleepiness at her work.

I:

Counseling on diet recommendations and healthier food choices to improve pt diet and continual collaboration with Dr. about polysomnography.

M/E:

Set goals to improving diet in the next month along with receiving nutrition education. F/u in 1 month to monitor and analyze weight and diet.

Jean Liu

11/11/14, 7:00

You see ZZ two months later in the out-patient clinic and she is 4 weeks s/p T&A and is ready and motivated to work on her weight. She has maintained her weight at 200#. She states that her sleeping habits have improved and she is ready to change her lifestyle. She is following no special diet. With adequate sleep she has more energy and she is able to exercise now and is currently walking her dog 10 minutes per day after work.

A 24-hour recall reveals:

Breakfast: (on way to work)	**Lunch: (work cafeteria)**	**Dinner: (at home)**
McDonald's Egg McMuffin	Cheeseburger (double)	Collard greens with bacon
Hash browns x 2	Small salad (lettuce, tomato)	Macaroni and cheese
Large coffee	Ranch dressing	Green salad
4 creamers	Large diet soda	Blue cheese dressing
2 packets sugar		1 can soda

Snack: 1 can soda

10. If ZZ's goal is to reduce her weight to 160 pounds in the next 6 months how many kcals should she eat each day? (2 pt) (assume that there are 4.3 weeks per month) _____1,590_____kcals/day

> Losing 40 lbs in 6 months, 4.3 weeks/month = 6 x 4.3 = 25.8, losing 1.55 lb/week
>
> 3,500 cal/lb of fat x 40 lbs/180.6 days in 6 months = 775.19 cal/day deficit
>
> 2,365 kcal needed for maintenence – 775.2 cal = 1589.8 kcal/day → 1590 kcal

11. Do you think that a goal of losing this much weight in 6 months, by diet alone, is a realistic one for ZZ? Why or why not? (1 pt)   □ yes   □x **no**

> I do not think that this is a realistic goal. A calorie deficit of 775.2 calories a day is much less than what she would typically be consuming to maintain her weight. Losing 1-2 pounds a week is recommended, but it does not seem realistic because ZZ would be making drastic diet changes along with no exercise. ZZ has not increased PA much or made changes to her diet, so the deficit would be very challenging. Maintaining this deficit for 6 months is also unrealistic.

12. ZZ is in which stage of the "Stages of Change?" Provide evidence for your choice. (1 pts) Stage # __3, preparation__**.**

> ZZ is in the preparation stage in the Stages of Change. She states that she is ready to change her lifestyle and that she needs to make changes to improve her health. She has started to do a little bit of PA and is ready to make more improvements.

13. List 4 dietary (food) strategies that ZZ can incorporate into her eating pattern to make her diet healthier. (1/2 pt ea = 2 pts)

> 1. Drink water instead of soda (1 can)
>
> 2. Replace the creamers with non-fat milk
>
> 3. Use non fat dressings for salads
>
> 4. Add 1 more servings of fruit per day

14. List 4 realistic ways for ZZ to increase her physical activity, aside from going to a gym. (1/2 pt ea = 2 pts)

> 1. Walking her dog for 15-20 minutes

6

2. Also walk her dog on the weekends, not just after work

3. With every chance she gets, take the stairs instead of the elevator (e.g. at work)

4. Purposely park at a farther parking spot in the parking lot so she can walk more

15. List 4 behavioral strategies (other than diet/physical activity) that ZZ could use to reduce her kcal intake.(1/2 pt ea =2 pts)

1. Try to make and prepare lunch at home to bring to work

2. Go to the grocery store with her mother or siblings, so she has accountability

3. To go grocery shopping when she is not hungry – this will prevent temptations while buying food

4. To try to "shop around the perimeter" when she goes grocery shopping, where they have the dairy, produce, meat sections but not the processed foods in between aisles.

16. ZZ's long-term (outcome) goal is to weigh 175 pounds; she will need measurable short-term goals as well. Please choose one strategy from each of the questions 14-16 and set a measurable goal for each of these that ZZ can work toward during the two-week period between her appointments with you. Remember…SMART goals. (3 pts)

For a dietary goal, ZZ can work on replacing one can of soda with water every day. For PA, she can work up to walking more after work every day, along with increasing her walking days of walking one more day every week (working up to walking every day of the week by the end of the 2 week time period). For behavioral strategies, she can bring her lunch to work for at least half of her work days in the 2 week time period.

17. If the above interventions do not work and ZZ reaches a plateau after losing 20 pounds, what do you think the next appropriate step should be and why? (1 pt)

If there is a plateau, that may mean that ZZ has become accommodated to a routine. I would recommend adding a different intervention, like increasing her fruit and vegetable intake as well as increasing her PA. Adding a new type of PA besides walking may be helpful (ex. Yoga, light jogging, weight lifting, etc)

18. What is the optimal length of weight management therapy for ZZ? (1 pts)

The optimal length of weight management therapy for ZZ is 6 months – 1 year.

19. ZZ asks about gastric bypass surgery. Is she a candidate for gastric bypass surgery? Why or why not? (2 pt)

No, ZZ is not a candidate for gastric bypass surgery. The surgery is recommended for people with a BMI of 40 of greater, or 35 and greater with complications. ZZ has a BMI of 31.5 so she does not qualify for the surgery.

20. What would you assess during this follow-up counseling session? (2 pts)

I would assess her willingness to take the goals and challenges that are suggested. ZZ is more willing to make the right steps to improving her health. Her weight was about the same, which is good that the weight was maintained. It's good that she feels better in her sleep and that her energy has increased. It appears that the interventions have been effective.