The Hashemite University
Faculty of Allied Health Sciences
Internship in Medical Nutrition Therapy
Dr. Suhad AbuMweis
Final Exam (21/4/2014)

Student's Name: _____ Student ID:_____

Answer sheet:

Que.	Ans.		Que.	Ans.		Que.	Ans.		Que.	Ans.
1			26			51			76	
2			27			52			77	
3			28			53			78	
4			29			54			79	
5			30			55			80	
6			31			56			81	
7			32			57			82	
8			33			58			83	
9			34			59			84	
10			35			60			85	
11			36			61			86	
12			37			62			87	
13			38			63			88	
14			39			64			89	
15			40			65			90	
16			41			66			91	
17			42			67			92	
18			43			68			93	
19			44			69			94	
20			45			70			95	
21			46			71			96	
22			47			72			97	
23			48			73			98	
24			49			74			99	
25			50			75			100	

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PT is a 65 yo M who comes to the emergency room complaining of chest pain. Several diagnostic tests conclude that he has suffered an MI. The registered dietitian is consulted for nutrition education. PT reports that he has gained 12 kg in the previous year due to his hectic work schedule, which forces him to eat out often. In addition, he is physically inactive. PT also reports that he has a family history of heart disease and his father died of an MI.

HT: 168 cm WT: 90 kg Waist Circumference: 105 cm BP: 140/93

Cholesterol: 259 LDL: 180 HDL: 58 TG: 234

Diet Hx:

B	Egg and sausage Coffee	
D		Chicken breast Mashed potatoes Iced tea
L	Burger and cheese sandwich on white bread Potato chips Soda	
		Cheesecake

1. Which of the following is an alterable risk factor that contributed to his condition?
   a. obesity
   b. family history
   c. age
   d. gender
2. Should the MD decide to put PT on medication to lower his cholesterol, what would be an optimal LDL level for him to achieve?
   a. 150
   b. 130
   c. 100
   d. 120
3. In addition to suffering an MI, what other diagnosis can the MD make based on the available clinical data?
   a. PVD
   b. metabolic syndrome
   c. hyperhomocysteinemia
   d. CHF
4. PT's diet is high in which nutrient?
   a. saturated fat
   b. polyunsaturated fat
   c. monounsaturated fat
   d. vitamins
5. The registered dietitian may recommend which of the following additions to PT's diet to help decrease the absorption of lipids and increase their excretion?
   a. nuts
   b. soluble fiber
   c. folate
   d. complex carbohydrates

M L is retired and 76 years old and lives alone. Her only daughter lives two hours away. She has a past medical history of heart attack, smoking for 20 years, hypertension, and type 2 diabetes. She complains of decreased appetite and disinterest in food.

6. Ms. L is admitted to the cardiac unit with shortness of breath and fluid retention in her extremities. What is the most likely diagnosis?
    a. Stroke
    b. Congestive heart failure
    c. COPD
    d. Myocardial Infarction
7. Which medication is appropriate to improve her fluid status?
    a. Diuretic
    b. Vasodilator
    c. Insulin
    d. Anti-coagulant
8. Which diet is the most appropriate for her condition?
    a. High-calorie, high-protein
    b. 2 g Na
    c. Low-fat
    d. 2 g Na/ no concentrated sweets
9. Which is the likely cause of her condition?
    a. age
    b. hypertension
    c. high consumption of fat
    d. gender
10. Ms. L is discharged from the hospital and returns to her doctor due to constipation for greater than 3 days. Which of the following is likely contributing to her change in bowl pattern?
    a. Decreased activity
    b. Diuretic usage
    c. Decreased intake of diet and liquids
    d. All of the above

JK is a 19 yo M college student with T1DM. He is away from home and is reportedly drinking and eating poorly. His school schedule is erratic so he eats at all different times of the day. He currently takes an extended long-acting analogue insulin once per day. Around 8 pm, his blood sugars are falling very low.

HT: 175 cm WT: 81 kg Hemoglobin A1c 9%

11. What range did the MD likely use to calculate JK's initial insulin regimen?
    a. 0.3-0.5 units/kg
    b. 0.5-0.8 units/kg
    c. 0.8-1.1 units/kg
    d. 1.1-1.4 units/kg
12. What is likely the cause of JK's low blood sugar at 8 pm?
    a. his insulin dosage is to high
    b. he is eating too much
    c. his insulin schedule is not matching his intake
    d. low blood sugar is desirable for someone with T1DM

13. Given his schedule, what may work better for JK?
    a. conventional therapy
    b. multiple daily injections
    c. split-dose insulin
    d. single-dose insulin
14. If JK's MD adopts the above option, JK will have to work with the dietitian to learn:
    a. carbohydrate counting.
    b. how to inject insulin for maximum benefits.
    c. changing his schedule.
    d. changing his diet to all sugar-free foods.
15. If JK does not take his insulin because he no longer wants to inject himself, what acute illness is he at risk for developing?
    a. hypoglycemia
    b. cardiovascular disease
    c. renal failure
    d. DKA
16. When is the peak time for long-acting analogue insulin?
    a. 2 hours after the injection
    b. there is no peak
    c. before the third meal of the day (dinner)
    d. at bedtime

FG is a 30 yo F who has just been diagnosed with T2DM. Her doctor told her she had IFG a year ago, but she did not make any lifestyle changes. She is now very concerned with her new diagnosis and has decided to see a registered dietitian.

HT: 155 cm WT: 94 kg Hemoglobin A1C 10%

17. What is the likely cause of her condition?
    a. weight
    b. family history
    c. her hemoglobin A1C
    d. high intake of carbohydrates
18. Which of the following can FG do to help control her blood glucose?
    a. Lose weight
    b. Try a low-carbohydrate diet
    c. Take chromium supplements
    d. Start glucagon injections
19. Which of the following medications will FG need to take to treat her diabetes?
    a. Warfarin
    b. Metformin
    c. Insulin injections
    d. Diuretics
20. The typical nutrition prescription for FG who needs approximately 2000 kcal/day would be:
    a. 50% carbohydrate, 20% protein, and 30% fat.
    b. 50% fat, 20% protein, and 30% carbohydrate.
    c. 50% protein, 20% fat, and 30% carbohydrate.
    d. 50% carbohydrate, 20% fat, and 30% protein.

21. The registered dietitian meets with FG and teaches her the exchange system for meal planning. FG reports that she eats a turkey sandwich for lunch every day and two bananas. How many starch exchanges does this amount to?

a. 3 b. 4 c. 2 d. 5

22. Which of the following is a good long-term measurement of how well FG is doing with her blood sugars?

a. fasting plasma glucose
b. oral glucose tolerance test
c. hemoglobin A1C
d. weight

23. If FG does not keep her blood glucose under control, she may develop which macrovascular disorder?

a. retinopathy
b. cardiovascular disease
c. nephropathy
d. DKA

24. What would be an optimal hemoglobin A1C for FG once she begins her new meal plan?

a. 7%
b. 8%
c. 6%
d. 9%

25. Fifteen years pass and FG is experiencing some visual impairments. Her eye doctor explains that it could be:

a. diabetic nephropathy.
b. diabetic hypoglycemia.
c. diabetic retinopathy.
d. diabetic gastroparesis.

LK is a 40 yo F s/p gastric resection 2 weeks ago due to a perforated ulcer from complicated PUD. Prior to her surgery, she was experiencing severe pain and upset stomach. She is now complaining of persistent diarrhea after she eats.

HT: 160 cm WT: 77 kg UBW: 85 kg

Usual intake: Diet: NPO
AM juice and fruit Snack toast with butter Noon half a tuna sandwich
Snack candy bar PM mashed potatoes with gravy Snack ice cream
Labs:

Na: 151 Cl: 107 BUN: 8
Glucose: 140
K: 3.5 CO_2: 28 Cr: 1.1

26. What % IBW is LK?

a. 122% b. 156% c. 133% d. 158%

27. Calculate and describe LK's % weight loss.

a. 9%, intentional
b. 10%, intentional
c. 9%, unintentional
d. 10%, unintentional

28. What is the likely cause of LK's persistent diarrhea?
    a. outlet obstruction
    b. hiatal hernia
    c. dumping syndrome
    d. dehydration
29. The registered dietitian assesses LK's diet and determines that it is lower in _____ than is recommended for her condition.
    a. fat
    b. protein
    c. fluids
    d. carbohydrate
30. Which of the following is not a nutritional recommendation that the registered dietitian will suggest for LK?
    a. plenty of fluids with meals
    b. small, frequent meals
    c. avoid lactose
    d. supplement with calcium and vitamin D
31. The registered dietitian may prescribe which vitamin due to the reduction in surface area of the stomach?
    a. C
    b. pyridoxine
    c. folate
    d. B_{12}

R M is a healthy 79-year-old, retired factory worker. His past medical history includes arthritis and irregular bowel movements. His wife urges him to go to the emergency department of the local hospital after 3 episodes of blood in his stool.

32. Mr. M is found to have infection in the diverticula. What will his immediate treatment include?
    a. Antibiotics
    b. High-fiber diet
    c. Laxatives
    d. None of the above
33. The diet progression for Mr. M would be the following:
    a. NPO, clear liquid, high fiber, low residue.
    b. NPO, high fiber, low residue, clear liquid.
    c. High fiber, low residue, NPO, clear liquid.
    d. NPO, clear liquid, low residue
34. Four weeks later, Mr. M returns to the hospital. After an extensive work-up he is found to need surgery due to extensive damage in a portion of his colon. What type of surgery will he have?
    a. Diverticulosis
    b. Colostomy
    c. Ileostomy
    d. Stoma
35. Six months have passed and Mr. M is back in the hospital to have the surgery. How would you estimate M's protein needs?
    a. 0.8 g/kg b. 0.8-1.2 g/kg
    c. 1.2-1.8 g/kg d. 1.6-2.2 g/kg

36. After recovery, what type of diet should he follow to ensure regular bowel movements?
    a. Clear liquid
    b. Bland
    c. Low residue
    d. High fiber

Ms. S is a 40 yo F admitted to the hospital with nausea and vomiting. She had a Roux en Y gastric bypass 2 mo ago. She reports that her symptoms have been persistent for 2 weeks and she cannot keep any food down, not even soup. She reports not taking any vitamin and mineral supplements recommended by the RD because "they taste bad."

HT: 160 cm WT: 91 kg UBW: 111 kg

Usual intake: Diet: NPO

AM	toast with butter		
Noon	half a tuna sandwich	Snack	cereal bar
PM	mashed potatoes with sauce	Snack	ice cream

37. Which of the following is not an indicator used for nutrition assessment?
    a. food/nutrition-related history
    b. Anthropometric measurements
    c. nutrition-focused physical findings
    d. nutrition counseling
38. Data from which of the following nutrition assessment domains would **not** be collected during your initial interview with Ms. S?
    a. biochemical data, medical tests, and procedures
    b. food/nutrition-related history
    c. client history
    d. anthropometric measurements
39. Identifying Ms. S's calorie and protein needs based on recommendations for post-gastric bypass surgery involves which domain of the nutrition assessment terminology?
    a. biochemical data, medical tests, and procedures
    b. comparative standards
    c. client history
    d. anthropometric measurements
40. After you interview Ms. S and prioritize her problems, you determine that the nutrition diagnosis for her would come from which domain?
    a. intake b. clinical c. behavioral-environmental
41. Which of the following is a potential "etiology" for the nutrition diagnosis's PES statement? Keep in mind the domain that you have chosen in question 40.
    a. lack of nutrition education
    b. psychological effects of surgery
    c. harmful beliefs about food
    d. altered function of the GI tract
42. Which of the following would be an appropriate monitoring and evaluation parameter for your next visit to Ms. S?
    a. tolerance of diet
    b. weight change
    c. assessment of biochemical parameters
    d. assessment of knowledge

43. If your patient has been falling victim to fad diets, the nutrition diagnosis would likely fall under which domain?
    a. psycho-social
    b. clinical
    c. intake
    d. behavioral-environmental

Ms. Smith is an 85-year-old female admitted to the hospital with a hip fracture and dehydration. She is awaiting surgery. Her family reports that she lives alone and has been showing signs of dementia in the last month. The medical doctor requests a nutritional consultation because the nurse reports that Ms. Smith is not eating well.

Ht: 163 cm	Wt: 50 kg	UBW: 57 kg (6 months ago)
Alb 2.8 g/dL	Hgb 12 g/dL	Prealbumin 14 mg/dL
TLC 2500		

44. Which of the following types of food and nutrition data gathering would be the most appropriate for Ms. Smith?
    a. food frequency questionnaire
    b. 24-hour recall
    c. calorie count
    d. food diary
45. Depending on Ms. Smith's physical limitations, you may need to measure and calculate her height using:
    a. a stadiometer.
    b. a knee-height caliper.
    c. her arm span.
    d. a tape measure.
46. Calculate and interpret Ms. Smith's percent (%) unintentional weight change.
    a. 13.6, significant
    b. 13.6, severe
    c. 12, significant
    d. 12, severe
47. Given Ms. Smith's history, what would be the best and most sensitive biochemical indicator of her nutritional status?
    a. prealbumin
    b. albumin
    c. TLC
    d. Hgb
48. Which biochemical indicator would be used by the medical doctor to determine Ms. Smith's inflammatory status?
    a. IGF-1
    b. fibronectin
    c. CRP
    d. albumin

49. If you were to determine Ms. Smith's energy needs using the Harris-Benedict equation, which activity factor would you use?

a.1.0 b.1.1 c.1.2 d.1.3

MT is a 60 yo F admitted into the hospital with a Crohn's disease exacerbation. After performing a detailed nutrition assessment, you determine that MT has lost more than 10% of her body weight and is experiencing malabsorption. Drug prednisone

50. As a result of your findings, you would prescribe which of the following?
    a. MCT
    b. Polycose
    c. vitamin E
    d. LCFA

51. Why are steroids often used to treat Crohn's and ulcerative colitis?
    a. to increase muscle tissue
    b. for their anti-inflammatory properties
    c. to stimulate the immune system

52. Which of the following is not a complication of steriods?
    a. hyperglycemia
    b. nitrogen wasting
    c. osteoporosis
    d. increased lipogenesis

53. When you interview MT, you want to build a relationship and obtain valuable information. Which of the following is the beginning of an open-ended question?
    a. Is...?
    b. How...?
    c. Did...?
    d. When...?

54. Because you are worried about GI intolerance as MT begins consuming liquids after medical procedures, which of the following would be the best choice?
    a. ice cream
    b. prune juice
    c. malted milk
    d. tomato juice

55. Before discharge, you meet with MT again and deliver nutrition education combined with educational materials. What is the most important detail regarding the material you provide MT?
    a. that it is clear
    b. that it provides complete information about Crohn's disease
    c. that it includes common foods that MT consumes
    d. that it is in large print

PD is an 24-month-old M with FFT. His mother brought him in to visit you at an outpatient nutrition center in the local pediatric hospital. LT: 88 cm WT: 13 kg, birth WT 3.0 kg

56. Calculate PD's daily kcalorie needs.
    a. 700 kcal b. 1100 kcal
    c. 1400 kcal d. 1600 kcal

57. Calculate PD's daily protein needs.
    a. 8 g b. 10 g
    c. 14 g d. 20 g

58. PD's daily iron needs.
    a. 4 mg b. 7 mg
    c. 18 mg d. 27 mg
59. PD's body weight was around ……kg at 12 months of age.
    a. 5 b. 7
    c. 9 d. 11
60. All of the following are appropriate protein source for PD except:
    a. milk
    b. hummus
    c. hot dog
    d. ground meat

Use the growth chart below for questions 61-65.

61. After looking **ONLY** at the growth chart, what condition might be suspected by a pediatrician?
    a. Autism b. Cerebral palsy
    c. FTT d. Spastic quadriplegia
62. The condition in question 61 may occur from a complex interplay of medical and environmental factors that include all of the following **EXCEPT**:
    a. pediatric AIDS.
    b. digestive problems such as gastrointestinal reflux.
    c. post-term birth and high birth weight.
    d. asthma.
63. At what age does intervention occur?
    a. 12 months
    b. 16 months
    c. 18 months
    d. 21 months
64. The child weight at age 24 months is around ……kg

65. The child length at age 24 months is around …….cm

66. When measuring growth in infants, you should do all the following **EXCEPT** _____ to avoid measurement errors.
    a. use measurement equipment that has been recently calibrated
    b. confirm the scale is on zero before starting
    c. make sure the infant has a diaper on to keep surfaces clean
    d. make sure that neither hips nor knees are bent
67. Using the standard rule of thumb, a toddler who is 3 years old would require what serving size of food?
    a. 3 teaspoons
    b. 3 tablespoons
    c. $^1/_8$ cup (4 tablespoons)
    d. Dependent on the amount of fruit juices served

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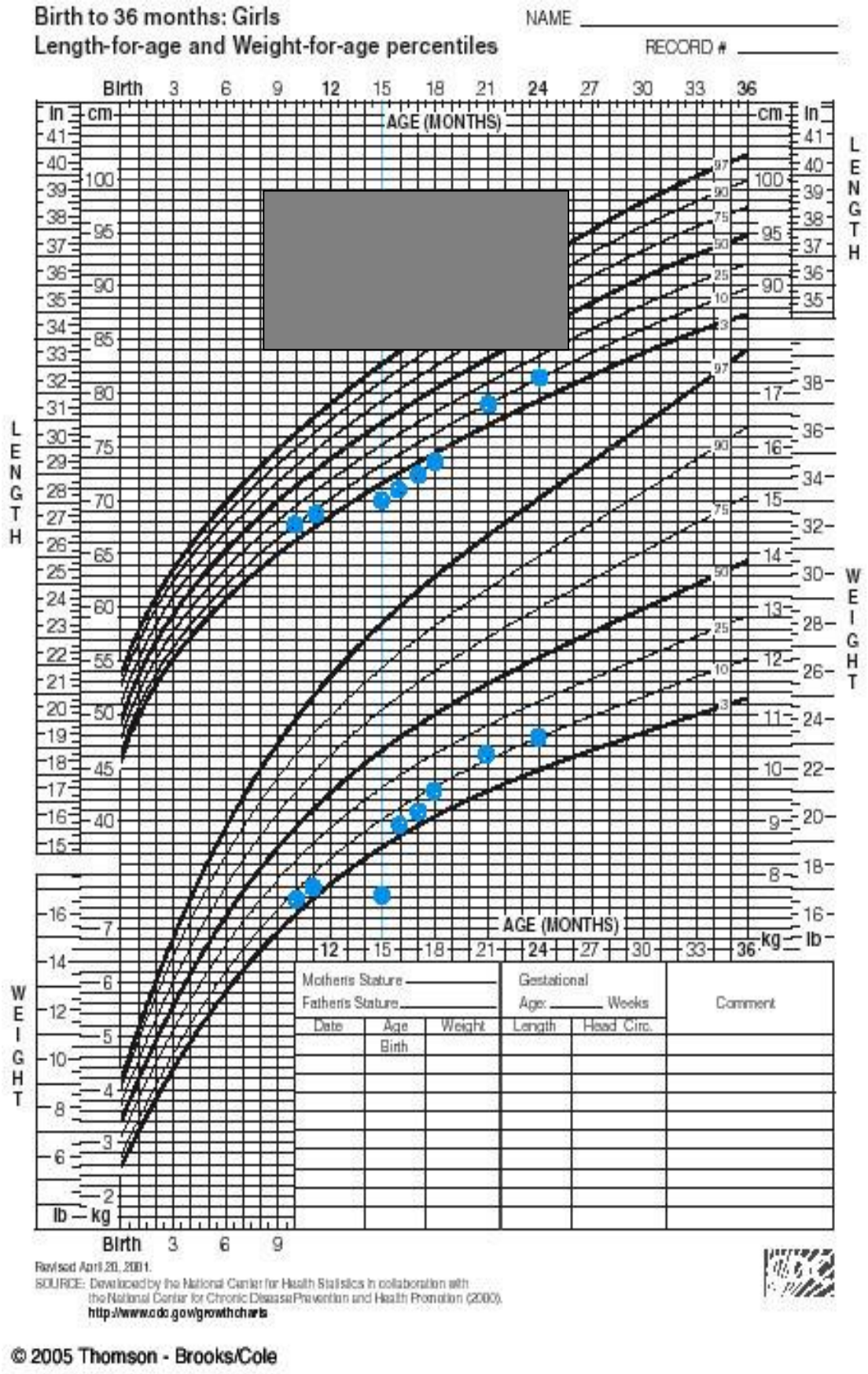


BD is a 15 yo female who is seen by her physician for her yearly check up. The physician determines that BD has microcytic anemia. Her diet recall is as follows:

B- bread with cream cheese
½ cup milk

L- turkey sandwich on whole-wheat bread
lettuce
mayonnaise
potato chips
2 cups tea

D- 1 cup of pasta
½ cup tomato sauce
2 pieces garlic bread
2 cups tea

S- candy bread

68. What is likely the cause of her anemia?
    a. menstruation
    b. age
    c. supplementing with B vitamins
    d. family hx

69. BD is usually consuming all food groups recommended to her age.
    a. True
    b. False

70. The registered dietitian recommends iron supplements for BD. She should also educate BD on _____, given it is a common complaint when using iron supplements.
    a. constipation
    b. strength of dosage
    c. taste
    d. intolerable injection

71. Which of the following foods could be added to BD's diet in order to enhance iron absorption?
    a. high-fiber cereal
    b. orange juice
    c. apple juice
    d. banana

72. Looking at BD's diet history, which food interferes with iron absorption?
    a. pasta
    b. bagel
    c. cream cheese
    d. tea

73. What substance in this food inhibits iron absorption?
    a. phytates
    b. non-heme iron
    c. tannins
    d. metallic ions

Give the DRI recommendations (RDA or AI) for the following nutrients for 19- to 30-year-old women.

74. Caclium:……
75. Iron:……..
76. Vitamin A:……
77. Vitamin C:……

HF is a 57 yo M admitted with infection. PMH: ESRD on HD x 3X/ week.

Ht 173 cm Wt: pre dialysis 79.5 kg post dialysis 77.7 kg usual dry 77.2 kg Urine output=420 cc/day

Labs:

	Na mEq/L	Cl mEq/L	BUN mg/dl	Glu mg/dl	K mEq/L	CO2 mEq/L	Cr mg/dl	PHOS mg/dl	ALB g/dl
Pre	136	93	96	125	5.5	21	6.7	6.3	4.1
Post	138	96	62	108	5.0	25	4.3	4.9	

78. The post-BUN value is acceptable in this case: a. True b. False
79. This patient is at risk for malnutrition: a. True b. False
80. The K values are not acceptable in this case: a. True b. False
81. The PHOS values are acceptable in this case: a. True b. False
82. This patient is acidotic: a. True b. False

Diet hx: He reports following a renal diet.
Mr. HF food record is reported below. Add up the levels of sodium, potassium, phosphorus, protein, and kcalories in the food record below.

Food/Beverage	**Na+ (mg)**	**K+ (mg)**	**Phos (mg)**	**Protein (g)**	**Kcal**
Breakfast					
½ cup grape juice					
1 cup cereal					
1 egg, scrambled					
2 tsp sugar					
½ cup whole milk					
Lunch					
2 slices white bread					
1 small breast chicken (roasted, no skin)					
1 medium orange					
1 cup spinach, canned					
Dinner					
1 small steak (grilled)					
1 cup white rice					
1 cup cooked broccoli					
1 slice white bread					
Totals:	83.	84.	85.	86.	87.

Calculate the nutrition needs for F.H., a 52-year-old male who has recently been diagnosed with atherosclerosis and hypertension. F.H. reports his physical activity level is low-active, height: 6'2", and current weight: 197#. Assume that his EER =2870 Kcal/day

Nutrient	Recommended Intake	Nutrient	Recommended Intake
Estimated Energy Requirement (EER)	2870	Cholesterol	92.
Saturated Fat	88.	Carbohydrate	93.
Polyunsaturated Fat	89.	Fiber	94.
Monounsaturated Fat	90.	Protein	95.
Total Fat	91.	Sodium	96.

G is a pleasant 30 year old male who has had
type 1 diabetes for 20 years. • He has been carbohydrate counting and trying
to follow a consistent carbohydrate meal plan. G's pre-meal target BG is 6 mmol/L; his actual BG is 11.2; his insulin:carb ratio = 10; his ISF = 2.

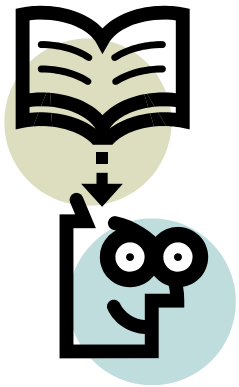
Lunch
salami & cheese sandwich
1 cup orange juice
1/2 cup yogurt
1 small apple
50g bag potato chips

97. G' total CHO intake at lunch is:.....

98. G's supplemental dose is:.....

99. G's meal bolus is:.....

100. G's total insulin dose before lunch is:.....



GOOD LUCK!!!!!