

First Name: \_\_\_\_\_ Last Name: \_\_\_\_\_

**CASE STUDY #2 – NUT 116AL**  
**~ Cardiovascular Disease ~**  
DUE Monday 11/23/15 (DATE CHANGE)

**Instructions:**

Review the pt's medical record below. Answer each question and show your calculations for each, if required, on a separate sheet. Reference all calculation formulas with the text and page number from PR (i.e., PR p. \_\_\_\_). Only use the PR for all calculations. You may use lecture notes (NUT 116A or 116AL) and the textbook for all other questions. You must type your answers! If not, questions will not be graded and you will receive 0 points. CS #2 is worth 50 points.

To familiarize yourself with medical terminology, utilize an online dictionary such as:  
<http://www.medilexicon.com/medicaldictionary.php>

**Hxxxxx, Rxxxxx, Male, 59 yo**

**Allergies:** NKA

**Pt. Location:** RM 1104

**Code:** FULL

**Physician:** A. Baum

**Isolation:** NONE

**Admit Date:** 9/1

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**Pt Summary:** RH is a 59-year old male admitted through the ED (emergency department) for an emergency coronary angiography with angioplasty (surgical repair/unblocking of coronary artery) of the infarct-related artery.

**Hx:**

Onset of disease: 59 yo male who noted the sudden onset of severe precordial pain on the way home from work. The pain is described as pressure-like pain, radiating to the jaw and left arm. The pt has noted an episode of emesis and nausea. He denies palpitations or syncope. He denies prior hx of pain. He admits to smoking cigarettes (1 pack/day for 40 years). **He denies HTN, DM, or high cholesterol. He denies SOB (shortness of breath).**

Medical hx: not significant before Dx of MI

Surgical hx: cholecystectomy 10 yrs ago, appendectomy 30 yrs ago

Medications at home: none

Allergies: sulfa drugs

Tobacco use: 1 ppd for 40 yrs

Alcohol use: none

Family hx: father with CAD (coronary artery disease); MI age 58

**Demographics:**

Marital status: married, 59 yo spouse

Children: grown and away from home

Years education: BS degree

Language: English

Occupation: Project Manager for a refuse company

**MD Progress Note:**

Review of Systems

Constitutional:	negative
Skin:	negative
<b>Cardiovascular:</b>	<b>no carotid bruits</b>
Respiratory:	negative
Gastrointestinal:	negative
Neurological:	negative
Psychiatric:	negative

Physical Exam

General appearance:	<b>mildly overweight male in acute distress from chest pain</b>
Heart:	PMI located at 5th ICS, MCL on the left. S1 nl intensity. S2 nl intensity and split. S4 gallop at the apex. No murmurs, clicks, or rubs.

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**HEENT:**

Head: normocephalic  
 Eyes: EOMI, fundoscopic exam WNL. No evidence of atherosclerosis, diabetic retinopathy, or early hypertensive changes.  
 Ears: TM nl bilaterally  
 Nose: WNL  
 Throat: tonsils not infected, uvula midline, gag nl  
 Genitalia: WNL  
 Neurologic: No focal localizing abnormalities; DTR symmetric bilaterally  
 Extremities: No C, C, E  
 Skin: diaphoretic and pale  
 Chest/Lungs: clear to auscultation and percussion  
 Peripheral vascular: PPP  
 Abdomen: RLQ scar and midline suprapubic scar. BS WNL. No hepatomegaly, splenomegaly, masses, inguinal lymph nodes, or abdominal bruits

**Vital Signs:**

Temp: 98.4                      Pulse: 92                      Resp Rate: 20  
 BP: 118/78                      **Ht: 5'10"**                      **Wt: 185 lbs**                      **BMI: 26.6**

**Nursing Assessment:**

	9/1
<b>Abdominal appearance</b> (concave, flat, rounded, obese, distended)	Flat
<b>Palpation of abdomen</b> (soft, rigid, firm, masses, tense)	soft
<b>Bowel function</b> (continent, incontinent, flatulence, no stool)	continent
<b>Bowel sounds</b> (P=present, AB=absent, hypo, hyper)	
RUQ	P
LUQ	P
RLQ	P
LLQ	P
Stool color	Light brown
Stool consistency	
Tubes/ostomies	NA
<b>Genitourinary</b>	
Urinary continence	Catheter in place
Urine source	Catheter
Appearance (clear, cloudy, yellow, amber, fluorescent, hematuria, orange, blue, tea)	Clear, yellow
<b>Integumentary</b>	
Skin color	Pale
Skin temperature (DI=diaphoretic, W=warm, dry, DL=cool, CLM=clammy, CD+=cold, M=moist, H=hot)	D, M
Skin turgor (good, fair, poor, TENT=tenting)	TENT
Skin condition (intact, EC=ecchymosis, A=abrasions, P=petechiae, R=rash, W=weeping, S=sloughing, D=dryness, EX=excoriated, T=tears, SE=subcutaneous emphysema, B=blisters, V=vesicles, N=necrosis)	Intact
Mucous membranes (intact, EC=ecchymosis, A=abrasions, P=petechiae, R=rash, W=weeping, S=sloughing, D=dryness, EX=excoriated, T=tears, SE=subcutaneous emphysema, B=blisters, V=vesicles, N=necrosis)	Intact
<b>Other components of Braden Scale:</b> special bed, sensory pressure, moisture, activity, friction/shear (>18=no risk, 15-16=low risk, 13-14=moderate risk, <12=high risk)	Activity; 22

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**Orders:**

IV heparin – 5000 units bolus followed by 1000 unit/hour continuous infusion with a PTT at 2 x control.

Chewable ASA 160 mg PO and continued every day

Lopressor 50 mg 2x/day

Lidocaine prn

NPO (nothing by mouth) until procedure completed

Type and cross for 6 units of packed cells

**Nutrition:**

Meal type: clear liquids, no caffeine  
 Hx: appetite good. Has been trying to change some things in his diet. Wife indicates that she has been using “corn oil” instead of butter and has tried not to fry foods as often.  
 Food allergies/intolerances/aversions: None  
 Previous nutrition tx: Yes, last year, community dietitian  
 Food purchase/preparation: Spouse  
 Vit/min intake: None

**24-hour recall:**

Breakfast:	None
Mid-morning Snack:	1 large cinnamon raisin bagel with 1 tbsp fat-free cream cheese, 9 oz grapefruit juice, 16 oz coffee
Lunch:	1 c canned vegetable beef soup, sandwich with 4 oz roast beef, lettuce, tomato, dill pickles, 2 tsp mayonnaise, 1 small apple, 8 oz 2% milk
Dinner:	2 lean pork chops (3 oz each), 1 large baked potato, 2 tsp margarine, ½ c green beans, ½ c coleslaw (cabbage with 1 tbsp salad dressing), 1 slice apple pie
Snack:	8 oz 2% milk, 1 oz pretzels

Patient reports that this pattern is fairly typical of his usual weekday intake.

**Laboratory Results:**

	Ref. Range	9/1 1957	9/2 0630	9/3 0645
<b>Chemistry</b>				
Sodium (mEq/L)	136-145	141	142	138
Potassium (mEq/L)	3.5-5.5	4.2	4.1	3.9
Chloride (mEq/L)	95-105	103	102	100
Carbon dioxide (CO <sub>2</sub> , mEq/L)	23-30	20 !↓	24	26
BUN (mg/dL)	8-18	14	15	16
Creatinine serum (mg/dL)	0.6-1.2	1.1	1.1	1.1
Glucose (mg/dL)	70-110	136 !↑	106	104
Phosphate, inorganic (mg/dL)	2.3-4.7	3.1	3.2	3.0
Magnesium (mg/dL)	1.8-3	2.0	2.3	2.0
Calcium (mg/dL)	9-11	9.4	9.4	9.4
Osmolality (mmol/kg/H <sub>2</sub> O)	285-295	292	290	291
Bilirubin, direct (mg/dL)	<0.3	0.1	0.1	0.2
Protein, total (g/dL)	6-8	6.0	5.9 !↓	6.1
Albumin (g/dL)	3.5-5	4.2	4.3	4.2
Prealbumin (mg/dL)	16-35	30	32	31
Ammonia (NH <sub>3</sub> , umol/L)	9-33	26	22	25
Alkaline phosphatase (U/L)	30-120	75	70	68
ALT (U/L)	4-36	30	215 !↑	185 !↑
AST (U/L)	0-35	25	245 !↑	175 !↑
CPK (U/L)	30-135 F 55-170 M	75	500 !↑	335 !↑
CPK-MB (U/L)	0	0	75 !↑	55 !↑

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Lactate dehydrogenase (U/L)	208-378	325	685 !↑	365
Troponin I (ng/dL)	<0.2	2.4 !↑	2.8 !↑	
Troponin T (ng/dL)	<0.03	2.1 !↑	2.7 !↑	
Cholesterol (mg/dL)	120-199	235 !↑	226 !↑	214 !↑
HDL-C (mg/dL)	>55 F, >45 M	30 !↓	32 !↓	33 !↓
LDL (mg/dL)	<130	160 !↑	150 !↑	141 !↑
LDL/HDL ratio	<3.22 F <3.55 M	5.3 !↑	4.7 !↑	4.3 !↑
Apo A (mg/dL)	101-199 F 94-178 M	72 !↓	80 !↓	98
Apo B (mg/dL)	60-126 F 63-133 M	115	110	105
Triglycerides (mg/dL)	35-135 F 40-160 M	150	140	130
<b>Coagulation (Coag)</b>				
PT (sec)	12.4-14.4	12.6	12.6	12.4
<b>Hematology</b>				
WBC (x 10 <sup>3</sup> /mm <sup>3</sup> )	4.8-11.8	11.0	9.32	8.8
RBC (x 10 <sup>6</sup> /mm <sup>3</sup> )	4.2-5.4 F 4.5-6.2 M	4.7	4.75	4.68
Hemoglobin (Hgb, g/dL)	12-15 F 14-17 M	15	14.8	14.4
Hematocrit (Hct, %)	37-47 F 40-54 M	45	45	44
MCV (um <sup>3</sup> )	80-96	91	92	90
MCH (pg)	26-32	30	31	30
MCHC (g/dL)	31.5-36	33	32	33
RBC distribution (%)	11.6-16.5	13.2	12.8	13.0
Platelet count (x10 <sup>3</sup> /mm <sup>3</sup> )	140-440	320	295	280
<b>Hematology, Manual Diff</b>				
Neutrophil (%)	50-70	55	58	62
Lymphocyte (%)	15-45	17	23	35
Monocyte (%)	3-10	4	4	7
Eosinophil (%)	0-6	0	0	0
Basophil (%)	0-2	0	0	0
Blasts (%)	3-10	3	3	4
Segs (%)	0-60	45	47	52
Bands (%)	0-10	15 !↑	17 !↑	8
<b>Urinalysis</b>				
Color	-	Pale yellow	Pale yellow	Pale yellow
Appearance	-	clear	clear	clear
Specific Gravity	1.003-1.030	1.020	1.015	1.018
pH	5-7	5.8	5.0	6.0
Protein (mg/dL)	Neg	Neg	Neg	Neg
Glucose (mg/dL)	Neg	Neg	Neg	Neg
Ketones	Neg	Trace !↑	Neg	Neg
Blood	Neg	Neg	Neg	Neg
Urobilinogen (EU/dL)	<1.1	Neg	Neg	Neg
Leukocyte esterase	Neg	Neg	Neg	Neg
Protein check	Neg	Neg	Neg	Neg
WBCs (/HPF)	0-5	0	0	0
RBCs (/HPF)	0-5	0	0	0
Bacteria	0	0	0	0

**1. RH had a myocardial infarction. Explain what happened to his heart during his MI. (1 pt)**

During an MI, a coronary artery becomes blocked and results in a lack of blood and oxygen flow to the heart, which results in damage to the muscle and possible necrosis of the damaged tissue.

Source: NUT116A CVD Lecture

**2. RH's chest pain resolved after two sublingual NTG at 3-minute intervals and 2 mgm of IV morphine. In the cath lab he was found to have a totally occluded distal right coronary artery and a 70% occlusion in the left circumflex coronary artery. The left anterior descending was patent. Angioplasty of the distal right coronary artery resulted in a patent infarct-related artery with near normal flow. A stent was left in place to stabilize the patient and limit infarct size. Left ventricular ejection fraction was normal at 42%, and a posterobasilar scar was present with hypokinesis.****Explain and describe what is an angioplasty and what is a stent placement. What is the purpose of these medical procedures? (2 pts)**

An **angioplasty** is a surgical intervention that frees blocked arteries. The purpose of an angioplasty is to ideally restore normal blood flow to the heart or, if this is not possible, increase it.

A **stent placement** can be done during an angioplasty to further improve flow through a damaged artery. A stent works by being placed inside a coronary artery and expanded to hold the artery open. Over time, the damaged artery will heal around the stent and increase blood flow. The purpose of this medical procedure is to help keep the damaged or clogged coronary artery open, improve blood flow to the heart, and reduce the chance of an MI.

Source: Mayo Clinic: Coronary Angioplasty and Stents (<http://www.mayoclinic.org/tests-procedures/angioplasty/basics/definition/prc-20014401>)

**3. What are the current recommendations for the progression of nutritional intake during a hospitalization following a myocardial infarction? (2 pts)**

- Liquid diet for 24 hours
- No caffeine
- Restricted sodium if HTN, edema, or CHF is present
- Lower cholesterol following AHA/TLC guidelines

Source: NUT116A CVD Part 3 Lecture

**4. Examine the chemistry results for RH. Which labs are consistent with the MI diagnosis and why? Why were the levels higher on day 2? (4 pts)**

High cholesterol, low HDL, high LDL/HDL ratio, high Troponin I, Troponin T, CPK, and CPK-MB labs are consistent with an MI diagnosis.

High cholesterol results in an accumulation of it in cells, which can cause the growth of cholesterol plaques and eventually block blood flow in the arteries, or form a blood clot that may cause an MI. Additionally, high cholesterol down-regulates LDL receptors, which results in LDL accumulating. Since LDL is the raw material of cholesterol plaques, it is related to MI's. RH's cholesterol and LDL results, which are both higher than the reference range, are consistent with an MI diagnosis. Also related to his HDL results is low Apo-A, which is a lipoprotein that is a component of HDL. By extension, low Apo-A will result in low HDL.

RH was within reference range for both CPK and CPK-M values on Day 1. However, these values are elevated and over the reference range during Day 2 because the former is released from damaged or necrotic cells, while the latter is an isoform found on cardiac muscle cells and used as a cardiac marker to diagnose an MI. RH's elevated CPK and CPK-M values on Day 2 is consistent with an MI diagnosis because cells within and around the heart are damaged or killed as a result of an MI, which would then trigger the release of the two substances. It is expected that RH's CPK and CPK-M values would start from a normal value (Day 1), and then become elevated for a period of time (Day 2) before beginning to eventually return back down to baseline (Day 3). This explains why both CPK and CPK-M values were higher on Day 2 than Day 1.

Additionally, Troponin I and Troponin T were over the reference range on Day 1, and increased further on Day 2. Troponin I and T are structural proteins that regulate muscle contractions, such as the heart, and are released into blood circulation from injured muscle cells during cardiac attacks. The high levels of these proteins are consistent with an MI diagnosis because various tissues within and around the periphery of the heart can be damaged, which would then trigger their release into the blood.

Source: NUT116A CVD Lecture

Medline Plus (Troponin): <https://www.nlm.nih.gov/medlineplus/ency/article/007452.htm>

5. Interpret the results of RH's lipid panel, identifying which of the lipids are elevated based on the NCEP ATP III Guidelines. List the desired therapeutic goals (TLC goal parameter) based on the NCEP guidelines. (3 pts)

Parameter	RH's Value in mg/dL	Interpretation based on NCEP classification	Therapeutic goal
Total Cholesterol	235 mg/dL	Borderline High	<200 mg/dL
LDL Cholesterol	160 mg/dL	High	<130 mg/dL
HDL Cholesterol	30 mg/dL	Low	>60 mg/dL
Apo A	72 mg/dL	Low (based on ref. range)	94-178 mg/dL (Men)
Triglycerides	150 mg/dL	Borderline High	<150 mg/dL

Source: Pocket Guide pg. 14

NUT116AL CVD Lecture

**Overall, what does RH's lipid panel suggest?**

RH's lipid panel suggests that he has more than 2 CHD risk factors according to the NCEP ATP III guidelines, which puts him at higher risk for developing CHD, vascular disease, or diabetes. Since he has more than 2 risk factors as well as an LDL cholesterol between 130-160 mg/dL, it is recommended that he initiate both TLC in conjunction with drug therapy.

RH has the following risk factors:

1. Total Cholesterol: **235 mg/dL (Borderline High)**
2. LDL Cholesterol: **160 mg/dL (High)**
3. HDL Cholesterol: **30 mg/dL (Low)**
4. Triglycerides: **150 mg/dL (Borderline High)**

Source: 116AL CVD lecture

6. List & number RH's risk factors for CHD, based on the presentation data from his medical record. (2 pts)

1. Low HDL: **30 mg/dL**
2. Cigarette smoking: **1 ppd for the last 40 years**
3. Family hx.: **Father has CAD and had an MI at 58 y.o.**
4. Borderline Hyperlipidemia: **141 mg/dL**
5. Overweight: **BMI = 26.6**
6. Male >45 y.o.: **RH is 59 y.o**

7. Using RH's 24-hour recall and the food exchange lists, calculate the total number of servings of each exchange group and number of calories he consumed as well as the energy distribution of calories for protein, carbohydrate, and fat using the exchange system. (5 pts)

Exchange	kcal	PRO g	CHO g	FAT g
14.33 starches	1250kcal	43g	215g	24g
2.125 fruits	130kcal	0g	32g	0g
11 lean meats	590kcal	80g	15g	23g
5 fats	225 kcal	0g	0g	25g
2 veg	60kcal	4g	10g	0g
2 LF milk	250 kcal	16g	24g	10g
<b>Total</b>	<b>2495 kcal</b>	<b>143g</b>	<b>296g</b>	<b>82g</b>
<b>% of total kcals</b>		<b>23%</b>	<b>47%</b>	<b>30%</b>

Source: Choose Your Foods (pg. 10-55)

8. Compare RH's 24-hour recall with the TLC dietary plan. Briefly discuss the overall adequacy of RH's diet and what recommendations you can make to align RH's current consumption with the TLC plan. (3 pts)

	<b>TLC Goals:</b>	<b>Your Recommendations:</b>
Total calories:	2300-2400kcal/d	Current intake is ~2500 kcal during weekdays. Suggest intake of 2100-2200 kcal/day
Total fat:	25-35% kcal	Currently at 30% of total kcal, satisfies TLC goal
Saturated fat:	<7% kcal	Does not meet TLC goals. This may due to high consumption of animal fats, salad dressing, and mayonnaise in current diet. Highly recommend reducing SFA intake.
Monounsaturated Fat:	<20% kcal	Increase consumption of MUFA's (i.e. nuts, avocado)
Polyunsaturated Fat:	<10% kcal	Current diet meets TLC goal for PUFA intake
Carbohydrate:	50-60% kcal	Currently at 47% kcal; recommend increasing to 50% to meet TLC goal
Fiber:	20-30 g/d	RH should consume more vegetables and whole grains to increase fiber intake
Protein:	15% kcal	Currently at 23% kcal; recommend reducing protein intake by decreasing meat consumption
Cholesterol:	<200 mg/d	No longer recommended as part of TLC diet
Sodium:	<2400 mg/d	Be aware of foods high in sodium (i.e. processed foods such as canned soup)
Potassium:	4700 mg	RH can use potassium/sodium-free seasonings, such as Mrs. Dash
Plant stanols/sterols	3-4 g/d	RH can use sterol-fortified spreads and replace margarine/butter. Can also use cooking oils which contain stanols/sterols

Source: NUT116AL CVD Lecture & PR pg. 4 (TLC EER)

9. RH was prescribed the following medications on discharge. Provide the generic name and indication of each medication (specific to RH) and its effects. Also note any dietary recommendations, contraindications/precautions, and interactions. What effect will these medications have on his nutritional care? Refer to the medication information in the Food-Medication Interactions text. (5 pts)

**Lopressor®** 50 mg daily

Generic name:	<b>Metoprolol</b>
Classification:	<b>Beta Blocker</b>
Indication:	<b>MI Treatment</b>
Diet:	<b>Take with food to increase bioavailability. Decreased Na and calorie intake may be recommended</b>
Possible Food-Medication Interactions:	<b>Natural licorice</b>
Potential Nutrition/Oral/GI Side Effects:	<b>N/V, diarrhea, dry mouth, dyspepsia, flatulence, constipation. May hide symptoms of hypoglycemia, may reduce release of insulin in response to hyperglycemia</b>

**Zestril®** 10 mg daily

Generic name:	<b>Lisinopril</b>
Classification:	<b>ACE Inhibitor</b>
Indication:	<b>Post MI or CHF</b>
Diet:	<b>Adequate fluid intake/hydration. Decreased Na and calorie intake may be recommended. Avoid salt substitutes. Caution with IV iron and K supplements. Limit alcohol.</b>
Possible Food-Medication Interactions:	<b>Avoid licorice and be cautious of Ca/Vit. D supplements</b>
Potential Nutrition/Oral/GI Side Effects:	<b>Dry mouth, N/V, GI irritation, diarrhea, constipation</b>

**Zocor®** 20 mg/day

Generic name:	<b>Simvastatin</b>
Classification:	<b>HMG-CoA Reductase Inhibitor; Statin</b>
Indication:	<b>Hyperlipidemia</b>
Diet:	<b>Lower fat, cholesterol, and calories if needed</b>
Possible Food-Medication Interactions:	<b>Avoid grapefruit/related citrus. Avoid substantial alcohol intake</b>
Potential Nutrition/Oral/GI Side Effects:	<b>Nausea, dyspepsia, abdominal pain, constipation, diarrhea, flatulence</b>

**Nitrostat®** 0.4 mg sl prn chest pain

Generic name:	<b>Nitroglycerin</b>
Classification:	<b>Antiangina</b>
Indication:	<b>Chest pain</b>
Diet:	<b>Unless doctor instructs otherwise, follow normal diet</b>
Possible Food-Medication Interactions:	<b>Avoid alcohol</b>
Potential Nutrition/Oral/GI Side Effects:	<b>Dry mouth, N/V, abdominal pain, headache, dizziness, blurred vision, rash, tachycardia, restlessness, hypotension, weakness, syncope</b>

**ASA®** 81 mg daily

Generic name:	<b>Aspirin</b>
Classification:	<b>Analgesic</b>
Indication:	<b>Myocardial infarction, pain, fever, arthritis, inflammation</b>



Diet:	<b>Insure adequate fluid intake/hydration, increase intake of foods containing Vit. C &amp; Folate. Avoid or limit natural products which affect coagulation. Limit caffeine to reduce GI effects</b>
Possible Food-Medication Interactions:	<b>Food decreases rate of absorption. Avoid alcohol. Caution with diabetes. Not for patients susceptible to vitamin K deficiency</b>
Potential Nutrition/Oral/GI Side Effects:	<b>Risk of hemolytic anemia, may cause sudden, serious gastric bleeding, N/V, dyspepsia, black tarry stools</b>

Source: Food-Medication Interactions Text

**10. Make an overall statement as to the discharge dietary advice you would give RH regarding his medications above. (1 pt)**

RH should avoid alcohol, limit caffeine (current intake: 16oz. coffee); avoid grapefruit/related citrus (current intake: 9oz. grapefruit juice). He may also need to decrease sodium and total caloric intake. While taking these medications, RH should drink a sufficient amount of fluids and stay hydrated.

**11. What is metabolic syndrome & does RH meet the criteria? Why or why not? (2 pts)**

Metabolic syndrome (MetS) describes a set of conditions that increase the risk of heart disease, stroke, and diabetes. MetS is diagnosed by having 3 or more of the following:

1. Abdominal Obesity (Men Waist: >40in.)
2. Raised Blood Triglycerides: (TG  $\geq$  150 mg/dL)
3. Low HDL (Men: <40mg/dL)
4. High BP ( $\geq$  135/85 mg Hg)
5. High blood glucose (Fasting glucose  $\geq$  100 mg/dL)

No, RH does not meet the criteria to be diagnosed as having metabolic syndrome as he has 2 risk factors rather than the 3 required.

He has the following risk factors:

1. Raised Blood Triglycerides: 150 mg/dL
2. Low HDL: 30 mg/dL

\*It was noted that his blood glucose lab was taken non-fasted.

Source: NUT116A Diabetes Lecture

**12. You talk with RH and his wife, an elementary school teacher. They are friendly and seem cooperative. They are both anxious to learn what they can do to prevent another heart attack. List 4 questions you might ask them that will assist you in assessing their lifestyle. (2 pts)**

1. How many minutes of physical activity do you two engage in every week?
2. As a project manager for a refuse company, is RH constantly stressed? If so, does he turn to eating and smoking cigarettes for comfort?
3. Does RH drink alcohol on the weekends (pt. reports 24 hr. recall as accurate for his weekday intake)?
4. How is your food usually prepared? i.e. baked, broiled, fried?

**13. List 4 lifestyle factors you might recommend to support realistic, successful lifestyle changes for RH? (2 pts)**

1. Gradually decreasing amounts of cigarettes smoked per day and eventually quit completely
2. Increase PA by walking at work more often
3. Keep track of PA by using a PA log
4. Keep track of food intake using a food log

**14. RH is Muslim and from the SF Bay Area. Describe and explain Islamic dietary laws and any dietary restrictions you would need to consider when counseling RH. (2 pts)**

Individuals who are Muslim are allowed to only eat foods that are considered halal, which is any object or action that is acceptable according to Islamic law.

Prohibited foods for Muslims include:

1. Animal products from non-halal animals (i.e. lard, tallow)
2. Pork
3. Fish/Shellfish (depending on the school)
4. Cheese (depending on the school)
5. Intoxicants and alcoholic beverages

When counseling RH, we would need to be sure not to recommend any food items that would violate Islamic law. In particular, the protein sources suggested to RH should be considered carefully as well as any other animal-derived products. If combination foods are to be recommended, to be considered halal, no other component of the dish may be in contact with a food that is haram (forbidden).

Source: Islamic Services of America (ISA): <http://isa-iowa.org/Content/Halal-Information/What-is-Haram.aspx>

**15. List and number 4 major teaching points (dietary advice) that you will need to discuss with RH in order for him to understand and follow the NCEP TLC diet. (2 pts)**

1. Portion control; what a serving of particular food groups look like (i.e. meats, fruits and vegetables, starches)
2. Reducing overall fat in diet
3. Identifying which foods in RH's diet have SFA's and offering alternatives that have PUFA/MUFA's
4. Balancing calorie intake and expenditure to maintain a healthy weight

**16. You have seen RH one day post-MI and one day after his cardiac procedure. He has been advanced to a regular cardiac diet and will be discharged the next morning. He is approved for 12 weeks of Cardiac Rehabilitation, including 3 visits to an RD. Summarize your observations, assessment and plan of action in an ADIME note. Base your note on the pertinent information given in the presentation data, 24 hr recall, and questions above. Write the ADIME note below and attach a separate sheet with all calculations. Include two PES statements. (12 points)**

A:

**Reason for admission:**

Patient has been admitted into the ED for emergency coronary angiography with angioplasty of an infarct-related artery. Patient reports of severe chest pain that radiates to the jaw and left arm as well as several episodes of vomiting and nausea. Patient admits to smoking a PPD of cigarettes for the last 40 years and denies previous hx. of pain, palpitations, syncope, HTN, DM, high cholesterol, and SOB. Wife, who purchased and prepares food for patient, reports that his appetite has been good and has been trying to change things in his diet.

**Reason for RD visit:** Pt. and his wife would like to be educated on what dietary or behavioral changes can be made in order to reduce the chance of another MI occurring. Concerns are based off of the pt. just having a surgery related to an MI and family hx. of CAD.

**MD Orders:**

- a. IV heparin (5000 units followed by 1000 units/hr continuous infusion w/ a PTT at 2 x control)
- b. Chewable ASA (160 mg PO and taken every day)
- c. Lopressor (50 mg 2x/day)
- d. Lidocaine prn
- e. NPO until procedure was completed

**Anthropometrics:**

Age: 59

Gender: M

Ht: 5'10"/177.8cm

Wt: 185#/84.09kg.

BMI: 26.6

IBW: 166lbs./75.45kg

% IBW: 111.44%

Nutrition focused physical finding:

Overall Appearance: Slightly overwt.

**Labs:**

- a. Troponin I (ng/dL): 2.4 (Ref Range: <0.2); **High (biomarker for cardiac damage; high value suggests MI)**
- b. Troponin T (ng/dL): 2.1; (Ref Range: 2.1); **High (biomarker for cardiac damage; high value suggests MI)**
- c. Cholesterol (mg/dL): 235; (120-199); **High (24 hr. food recall suggests high intake of SFA)**
- d. HDL-C (mg/dL): 30; (Ref Range: >45 M); **Low (24 hr. food recall suggests high intake of SFA)**
- e. LDL (mg/dL): 160; (Ref Range: <130); **High (24 hr. food recall suggests high intake of SFA)**
- f. LDL/HDL ratio: 5.3 (Ref Range: <3.55 M); **High (24 hr. food recall suggests high intake of SFA)**
- g. Apo A (mg/dL): 72 (Ref Range: 94-178 M); **Low (Component of HDL; low levels result in low HDL)**

**Medications**

- a. Lopressor: 50mg/d
- b. Zestril: 10mg/d
- c. Zocor: 20mg/d
- d. Nitrostat: 0.4mg sl prn chest pain
- e. ASA: 81mg/d

**Estimated Nutrient Needs:**

EER (TLC): 2300-2400kcal/day (AF: Sedentary)

EER (MSJ): 2300-2400 kcal/day (AF: OOB/ambulatory/low activity)

EPR: 75-85g protein/d (Minor Surgery)

Fluid: 1mL/kcal = 2300-2400 mL/day

**24-hr Recall Analysis Data:**

- a. Total Kcal: 2495
- b. PRO (g): 143g; 23% total kcal
- c. CHO (g): 296g; 47% total kcal
- d. FAT (g): 82g; 30% total kcal
- e. Pt. reports that this recall is representative of usual weekday intake

**Food & Nutrition History:**

Wife handles food purchase and preparation in household. Recently, she has tried to change some things in RH's diet, such as using corn oil instead of butter when cooking, and reducing frying of foods.

**Family and Social History:**

RH is married and has children but are grown and not living within household. Father has CAD and had an MI at 58 y.o.

**Concerns with meds & labs:**

**Meds:** Avoid grapefruit and related citrus, natural licorice, decrease sodium intake and total caloric intake.

**Labs:** Lipid panel suggests high total cholesterol and LDL, low HDL levels

Source: Pocket Guide pg. 2, 4

**D:**

**PES 1:**

Less than optimal intake of types of fats ; SFA intake too high (NI-5.6.3) r/t intake of large meat portions and not ideal fat sources AEB lipid lab values indicating high LDL, low HDL, and high LDL: HDL ratio.

**PES 2:**

Undesirable food choices (NB-1.7) r/t food and nutrition-related knowledge deficit (NB-1.1) AEB 24 hr. food recall indicating adequacy in most areas of diet but high saturated fat intake from animal fats and other sources.

**I:**

**MNT Goal:** Reduce SFA intake to less than 7% of total kcal intake through education and selection of more suitable food choices.

**Recommendations:**

1. Decrease total calorie intake
2. Decrease current protein intake, total fat intake, and increase fiber intake
3. Decrease total fat intake
4. Diet Rx.:  
Kcal: 2100-2200 kcal/d  
Pro. (g): 75-85g/d

**Specific Rec's:**

1. Total Fat: 25-35% total kcal
2. Decrease SFA Intake to <7% kcal
3. CHO: 35-60% total kcal
4. Increase fiber intake to 20-30g/d
5. Decrease protein intake to ~15% of total kcal

**Behavioral:**

1. Increase PA by beginning to walk more often while working
2. Begin tracking PA by using a log
3. Begin tracking food intake by using a log

**Compliance:**

1. RH and his wife are in the Action stage of change. RH's wife, who handles food purchasing and preparation has reported already beginning to modify current eating behaviors and are willing to accept advice on specific actions and plans in order to reach MNT goal.

**M/E:**

1. Monthly follow-up at in-person appointment every month for 3 months
2. Monitor weight, lipid, and chemistry lab values, food intake with food log, PA with PA log.