

Nutrition Support Calculations
NDFS 356
WINTER 2013
35 Points

1. Determine the following for Ensure at 68 ml/hour (Note: when working with volumes of formula for enteral formula, it is expressed in total volume/ml not as cans or ounces. For example: 1200 ml's, not 5 cans)
 - a. Total volume: 1,632 ml
 - b. Total calories: 1,714 kcals ($1.05 \text{ cal/ml} \times 1,632 \text{ ml}$)
 - c. Protein (grams): 62g

2. Determine the following for Jevity1.2 at 120 ml/hour:
 - a. Total volume (ml): 2,880ml
 - b. Total calories: 3,456 kcals ($2,880 \text{ ml} \times 1.2 \text{ cal/ml}$)
 - c. Total protein (g): 160g
 - d. Free water (ml): 2,333 ml ($81\% \times 2880 \text{ ml}$)
 - e. Fiber (g): 52g

3. How much Perative would need to be delivered to provide about 2,500 calories and about 130 protein?
Total volume in ml's: 1,923ml

4. Calculate the following for Procalamine at 100 ml x 24 hours. 2,400mls
 - a. Protein (grams): 70g
 - b. Total calories: 592 kcals
 - c. Total non-protein calories (NPC): 312 kcals

5. Calculate how much Impact is necessary to provide 80 grams of protein. What is the total volume, calories and free fluid that it would provide?
 - a. Total volume (ml): 1,429ml
 - b. Total calories: 1,429kcals
 - c. Free fluid (water) (ml): 1,215ml

6. How many cans of Nutren 2.0 are necessary to provide 1250 calories? How much protein does it provide? How much free fluid? (when supplements are consumed PO, they are usually expressed in cans/day)
 - a. # of cans: 2.5 cans/day
 - b. Protein (g): 50g
 - c. Free Fluid: 438ml

7. Determine the following for someone who consumed 3 and one-half cans of Boost.
 - a. Calories: 840kcal

 - b. Protein (g): 35g

8. How much of the following nutrients would be provided in 2 Glucerna meals bars?
 - a. Kcal: 440kcal

 - b. Protein: 20g

 - c. Overall % of DV: 40%

9. For the following Standard TPN solution, calculate the requested information:
2800 ml of 50% CHO and 8.5% AA.
 - a. Protein (grams): 119g

 - b. Total NPC: 2,380 kcal

 - c. Total calories: 2,856 kcal

10. Calculate the nutritional provisions in a standard solution of 2,450 ml 50% CHO, 10% protein, and 10% lipids (500ml's) QOD
 - a. Protein (grams): 122.5g

 - b. Total NPC: 2,358 kcal

 - c. Total calories: 2,848 kcal

11. Calculate the following: 1,200 ml of 70% CHO; 1,000 ml of 8.5 % protein; and 20% lipids (in 500 ml bag) given QOD to a 74 kg person.
 - a. Protein (grams): 85g
 - b. Total NPC (average/day): 3,356 kcal
 - c. Total calories: 3,696 kcal
 - d. Fat load: 0.76
 - e. CHO load: 7.88
 - f. What is the max amount of CHO for this person: 746g

12. MC is starting on TPN (wt. 61 kg). You determined his needs to be 2,650 kcal/day and

protein needs at 91 grams. He will get 10% lipids 3 times/week. Write a TPN order using 60% dextrose and 8.5% AA (include protein calories) to meet his needs:

- a. Volume CHO (60%): 1,005 ml
- b. Volume Pro (8.5%): 1,071 ml
- c. Average daily lipid calories: 236 kcals
- d. Fat load: 0.34
- e. CHO load: 6.9

13. Design a TPN formula to provide 1840 calories and 65 grams of protein for a 59 kg person. Remember the minimum lipid requirements. Make sure the person receives adequate fluid.

	%	Volume (ml)	
CHO	40%	988ml	
Protein	8.5%	765ml	
Fat	10%	Volume: 500ml	Frequency: 3x/week
Fat load	0.37		
CHO load	4.6		

14. JT is receiving both Procalamine and Jevity 1.0. He is tolerating Jevity at only 40 ml/hour which doesn't meet his protein needs of 90 grams. How much Procalamine does he need and at what rate over 24 hours to meet his total protein needs?
- a. Procalamine (grams protein): 48g
 - b. Procalamine (volume): 1,655 ml
 - c. Rate of Procalamine: 69ml/hr
 - d. Kcals provided by Jevity: 1,017 kcals (960ml x 1.06 cal/ml)
15. Find a product that will provide 1,200 calories and >60 grams pro in less than 1,000 ml and osmolality less than 600 mOsm. How much must be delivered?
 Vital AF 1.2 Cal: 1200 kcals, 1000 ml, 75 g protein, 435 mOsm

16. Calculate the following for Jevity 1.5 half strength (diluted in equal water—i.e. $\frac{1}{2}$ of the total volume is added water) at 83 ml/hour over 22 hours.

- a. Calories: 1,370 kcals
- b. Protein: 58g
- c. Total volume: 1826 ml
- d. Free fluid from Jevity 1.5: 694 ml
- e. Total free fluid provided (added water plus Jevity free fluid): 1,607 ml

17. Design a tailor-made formula providing 112 grams protein, 2,875 total calories, and 3,100 ml's total fluid (± 100 ml's) for an 89 kg person. Complete the table below.

	Initial Stock concentration	Total grams	Total volume
Amino acids	8.5%	112g	1,318ml
Dextrose	50%	470g	940ml
Fat	10%	75g	750ml
CHO load	3.7		
Fat load	0.8		
Final AA concentration	3%		
Final dextrose concentration	15%		
Total final volume	3,008ml		