PHAR 632:

PN Applications

1- A patient needs 105 grams of AA. How many mL will a patient need, if the available amino acid solution is 15%?

2- A patient with total caloric need of 3500 Kcal. Calculate how many grams of lipid would the patient need (assuming 30% of the caloric need is from fat). And calculate the number of milliliters needed from 30% fat emulsion.

3- If the daily maintenance fluid requirement for 2 Kg premature infant is 120mL/Kg/day and an order of dextrose 5% 10.8 ml/hour x 24 hours was prescribed for him. Does this order provide the patient with daily maintenance fluid requirements?

- 2-1 TPN

4- A 40 year old, 132 lb, 5'6" female in a hospital with right leg skin infection. Her current stress factor should account for 50% increase in her total energy requirements and her activity factor is 1.3.

Calculate

i. The resting metabolic energy need (RME) and the total daily energy requirement for this patient, in Kcal/day.
ii. The total fluid needed.
iii. The protein need and the protein Kcal.
iv. If the patient is on a fluid restriction, which among the following protein solution would you use?
    a. Protein 20%
    b. Protein 15 %
    c. Protein 10 %

5- Calculate the caloric requirement and the mL of dextrose 70% and protein 15% solutions needed for a 56 yr old female patient weighing 121 pounds with a height of 5ft 3in (stress factor 1.4, activity factor 1.2)

3-1 TPN

6- Calculate the caloric requirement and the mL of dextrose 50%, lipid 20% and protein 20% solutions needed for a post op surgical 46 yr old male in the ICU weighing 187 pounds with a height of 5ft 8in. (stress factor 1.75, activity factor 1.2*).*

2-1 TPN

7- A 55 year old, 170 lb, 5 feet 6 inches male in a hospital with right leg skin infection (limited movement, activity factor =1.2). His current stress factor should account for 50% increase in his total energy requirement.

a. Calculate the resting metabolic energy need (RME) =

b. Calculate the total daily energy requirement for this patient, in Kcal/day

2- Calculate the total fluid needed per day (use 35mL/ kg.day)

		Source	mL
Amino acid 10%	**450 mL**	**Amino acid 10%**	
Dextrose 50%	**500 mL**	**Dextrose 50%**	
Sodium chloride	**25 mEq**	**4 mEq/ml**	
Potassium chloride	**20 mEq**	**2 mEq/ml**	
Potassium phosphate	**21 mmol**	**3 mmol/ml**	
		Total ml=	

8- A patient is prescribed 70 ml/hour of the above order

Calculate the number of calories from the protein source and the number of calories from non-protein source. (Assume that the bag will be replaced with another one when empty).

9- Circle the appropriate response below regarding the fluid requirement in patients with:

Fever:	**Increased**	**Decreased**
Renal failure:	**Increased**	**Decreased**
Congestive heart failure:	**Increased**	**Decreased**
Diarrhea:	**Increased**	**Decreased**

A bonus question in your coming exam will test your search for the following:
Using the disease states below, list and describe 2 major concerns in terms of the critical monitoring for the patients' <u>safety</u> while receiving TPN?

Acute renal failure
Pulmonary disease
Cardiac disease
Diabetic patient