Week 10 Pre-Lab

BIOE 320 Systems Physiology Laboratory

Info: Each group must select one member to fast 12 hours prior to lab (i.e. do not eat or drink anything except water after midnight). This group member can bring their lunch to lab and will be allowed to eat outside following data collection.

1. Describe the concept of indirect calorimetry, referencing the rate of oxygen utilization associated with carbohydrate, fat, and protein metabolism. Consider the composition of the typical American diet and show how this information is used to calculate the "energy equivalent" of oxygen.
2. What unit of measure is ordinarily used to discuss metabolism? Considering this measure, how much energy is available per gram of carbohydrate, protein, and fat? Comment on which is the most efficient energy source.
3. Define Basal Metabolic Rate (BMR). What activities or functions in the body are capture when measuring BMR? What factors could account for difference in BMR between individuals? What criteria must be met in order to assess "true" basal metabolic rate?