

Please refer to the article: Hall KD, Chen KY, Guo J, Lam YY, Leibel RL, Mayer LES, Reitman ML, Rosenbaum M, Smith SR, Walsh BT, and Ravussin E. Energy expenditure and body composition changes after an isocaloric ketogenic diet in overweight and obese men. *Am J Clin Nutr* 2016;104:324–33.

Answer all questions *with as much specificity and detail as you can* **NUMBERED AND IN ORDER**.

DO NOT USE PHRASES OR SENTENCES FROM THE ARTICLE (points will be deducted).

When using a figure or table, read the caption carefully and notice whether the “differences” you see are statistically significant (if they are not, then they are NOT different).

1. In your own words, using specific information about metabolic pathways (steps, hormones), describe the “carbohydrate-insulin” model of obesity and how it differs from the “conventional model” of obesity and weight loss, according to these authors. (4)
2. Explain (all steps, including the hormones involved) how transition from the Baseline Diet (BD) to the Ketogenic Diet (KD) caused an increase in blood levels of Free Fatty Acids. (3)
3. Was the Ketogenic Diet a low protein diet? How did the protein content of the KD compare with the average protein requirement of the subjects? Show your calculations. (2)
4. Given the differences between the composition of the Baseline and Ketogenic Diets:
 - a) State the effects (significant only!) that the Ketogenic Diet had on plasma levels of glucose and triglycerides; **identify the Figure/panel or Table** that is the source of your information (2)
 - b) Describe what effects that you might have expected, given the carbohydrate and fat contents, of the Ketogenic diet on plasma levels of glucose and triglyceride, and WHY (2)
 - c) Explain HOW you think the Ketogenic Diet *actually produced* the results you stated in part a. (2)
5. A) What was the hypothesis of the study? (2)
B) What was the author’s conclusion (that is, was the hypothesis correct)? (1)
C) What was the author’s major evidence for the conclusion? (**state Tables, Figures/panels**) (2)

