

Subject Information

The purpose of this project is to demonstrate proficiency in the collection of food consumption data, development of appropriate consumption recommendations, and the development of suggested changes based upon comparing consumption patterns with recommendations.

The subject of this Nutritional Assessment Project (NAP) is an average non-athlete student. The subject is a college age 19 year old male who is lightly active. The subject is 72 inches tall and weighs 185 pounds.

According to Cornell University Medical College, the Basal Metabolic Rate (BMR) is the rate of which calories are burned at rest. Therefore, calculations of BMR do not include physical activity. The Harris Benedict equation for calculating the BMR for men is $66.5 + (13.75 \times \text{kg}) + (5.003 \times \text{cm}) - (6.775 \times \text{age})$. The subject's Basal Metabolic Rate: ~2004 kilocalories (kcal) per day.

According to the Centers for Disease Control, the Estimated Energy Requirement (EER) is amount of kcal needed daily to maintain current body mass but the calculations also includes estimated daily physical activity or exercise. Factors that affect EER are gender, height, weight, and activity level. To find the EER multiple the subject's BMR by a value that is reflective of the subject's activity level. The subject was considered lightly active which is given a multiple value of 1.375. Therefore, the subject's Estimated Energy Requirement: ~2755 kcal per day.

According to Mcguire and Beerman (2011), recommended macronutrient ranges for healthy adults are as follows:

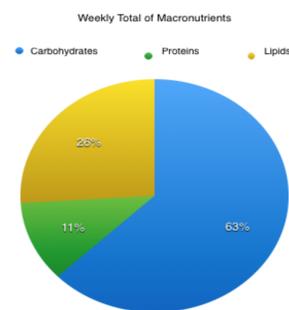
-Carbohydrates (Between 45% and 65% Total Daily Kcals): 1239.82 Kcals to 1790.85 Kcals

-Protein: (Between 10% and 35% Total Daily Kcals): 275.52 Kcals to 964.31 cal

-Lipids: (Between 20% and 35% Total Daily Kcals): 551.03 kcal to 964.31 kcal

According to the USDA's Dietary Reference Intake the subject's recommended micronutrient ranges for Vitamin C and Calcium are ~1000mg/day and ~1500 mg/day respectively.

Week 1 Average Daily Macronutrient Consumption



-Carbohydrates: 617 kcal

-Proteins: 109 kcal

-Lipids: 255 kcal

- Daily Kcals: 981 kcal

Week 2 Vitamin C and Calcium Consumption

Micronutrient Data Week 1

	Vitamin C (DRI 90mg-2000mg daily)	Calcium (DRI 1000mg-2500mg daily)
Monday	0mg	20mg
Tuesday	0.2mg	0mg
Wednesday	0mg	0mg
Thursday	0mg	0mg
Friday	72mg	20mg

Recommendations After Week 1

Upon review of week 1 data, the subject's food log and calculations after week 1, it was concluded the subject should consider the following changes.

- Subject needs to consume more kcal daily.
- Subject needs to drink more water, preferably 8 to 10 glasses daily.
- 63% of the consumed macronutrient consisted of carbohydrates. Because this is the high end of the range, the subject should consume more proteins and lipids to help balance out the macronutrient ratios. A ratio of approximately 60% CHO, 20% PRO, and 20% Lipids is recommended for the subject.
- The subject's consumption of both vitamin C and Calcium are significantly lower than recommended. Until better micronutrient eating habits can be developed, the subject should take a vitamin C and calcium supplement.

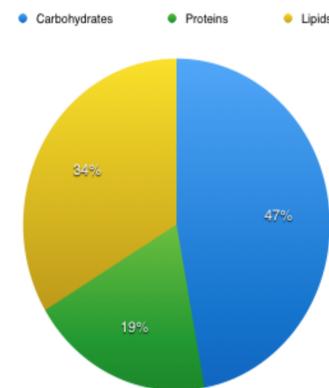
Week 2 Average Daily Macronutrient Consumption

-Carbohydrates: 524 kcal

-Proteins: 215 kcal

-Lipids: 374

- Daily Kcals: 1113



Week 1 Vitamin C and Calcium Consumption

Micronutrient Data Week 2

	Vitamin C (DRI 90mg-2000mg daily)	Calcium (DRI 1000mg-2500mg daily)
Monday	0mg	140mg
Tuesday	72mg	140mg
Wednesday	72mg	0mg
Thursday	0mg	10mg
Friday	0mg	1733.33mg

Week 2 Review

Upon viewing the subject's food log and calculations after week 2, it was concluded the subject:

- Increased kcal consumed daily but is still below recommendation.
- Subject made effort to increase water intake but could still increase intake.
- 47% of the consumed macronutrient consisted of carbohydrates. This is near the bottom of the CHO range but it does indicate the subject made an effort to reduce CHO consumption. A ratio of approximately 60% CHO, 20% PRO, and 20% Lipids is still recommended for the subject.
- The subject's consumption of both vitamin C and Calcium increased but remains chronically low. Supplementation was utilized but not consistently. It is critical to eat with priority given to both micronutrients and macronutrients.

Good and Bad Days

The subject has stated that he does not usually consume a large volume of food. The second week of consumption was higher than the first and the subject stated it was merely due to the Holiday week.

The most unusually low consumption day was the Friday in the first week where only sweet tea, water, apple, and an orange were consumed.

The most unusually high consumption day was Thursday of the second week, the reason for the high consumption was because of the Thanksgiving Holiday.

Conclusion

In conclusion, the subject needs to eat healthier foods, keep a healthy balance of macronutrients throughout the week, consume a higher amount of water, and consume more micronutrients.

References

(n.d.). Retrieved from <https://www.nal.usda.gov/fnic/dri-calculator/index.php>.

Harris-Benedict Equation. (n.d.). Retrieved from <http://www-users.med.cornell.edu/~spon/picu/calc/beecalc.htm>.

Inc. (n.d.). Eat This Much, your personal diet assistant. Retrieved from <https://www.eatthismuch.com/>.

McGuire, M., & Beerman, K. A. (2011). Nutritional sciences: from fundamentals to food. Australia: Wadsworth Cengage Learning.