

# NUTRITIONAL ASSESSMENT of ENDURANCE ATHLETE

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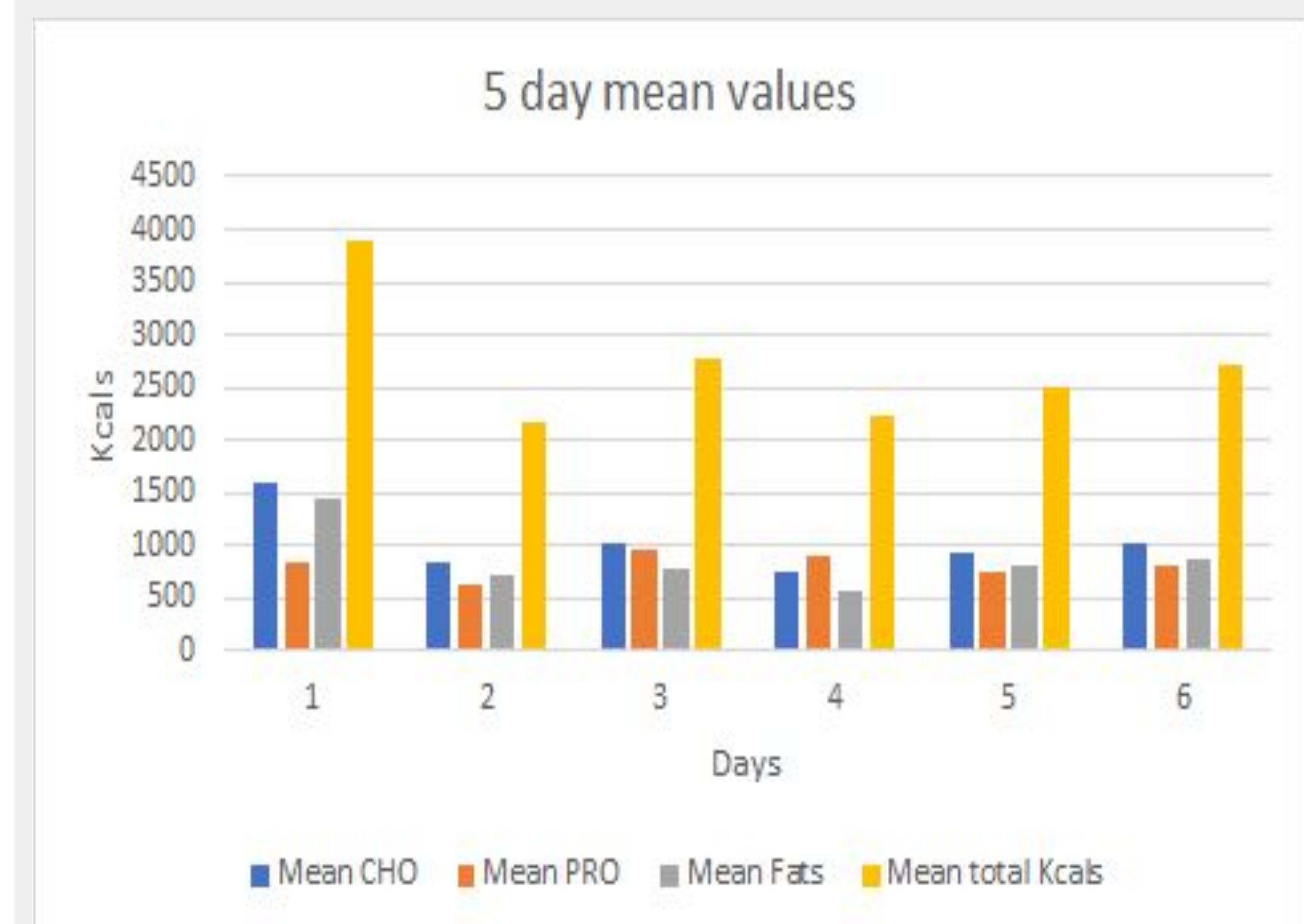
## Introduction

The subject that was chosen was a male endurance athlete that works out several times a day. The subject is 180.34 centimeter tall and weighs 97.7 kilograms. His estimated caloric needs was 3,111 calories per day. Based upon the anticipated activity level of this individual, caloric quantity should be primarily centered around high increments of protein and nutritious forms of carbohydrates. Subject will readily use these macronutrients for energy and to build muscle.

## Week 1

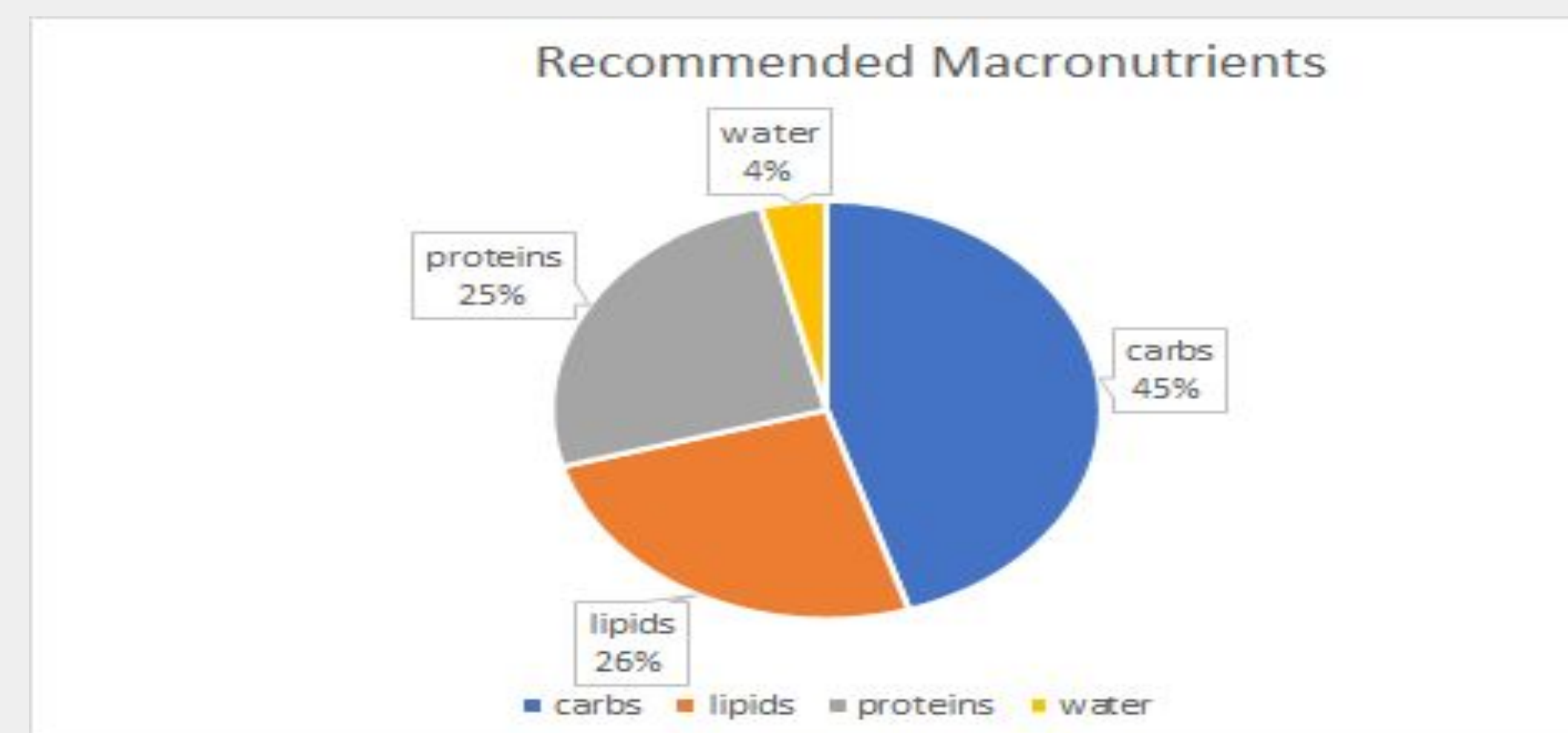
Highest caloric intake was 3893 kcals. This occurred during the first day of consumption. Average caloric distribution was 2715 total kcals compared to the recommended AMDR value of 3111 kcals per day. Consumed calcium and iron levels were considerably low compared to the DRI. Food eaten on the day that was furthest away from recommendations included a low percentage of daily carbohydrates that were high in fat and protein. Food groups included lean meats, cheeses, and leafy green vegetables. Subject also ate calorie deficient foods such as candy and cake. Total caloric intake totaled to be 2175.8 kcals. Diet should include fruits and vegetables. Food eaten on the day that was closest to the recommendations included foods high in protein and moderate in fat. Foods included eggs, lean meats, potatoes, and various dairy products. Caloric intake totaled to be 2775.4 kcals. Dietary maintenance should include high protein and whole foods groups. Unnecessary empty calories such as cake and candy should be removed from the diet all together. Compared to the recommended values, the subject should increase carbohydrate consumption by at least 10 percent, and continue consumption of foods high in protein and lower in fat content. 1000 mg of calcium was recommended. Calcium content should be increased ten-fold to supply proper bone growth. This could occur by consuming a supplement or introducing milk into the diet. According to (Coutinho, 2016), "lipid and protein intakes corresponds to recommendations for both sexes; however, insufficient intakes of calcium, fruits, and vegetables are seen amongst athletes". To maintain proper nutrition, the subject should increase daily amounts of these food groups.

Figure 1: Week one mean macro nutrient values totaling over a 5-day span



## Recommendation

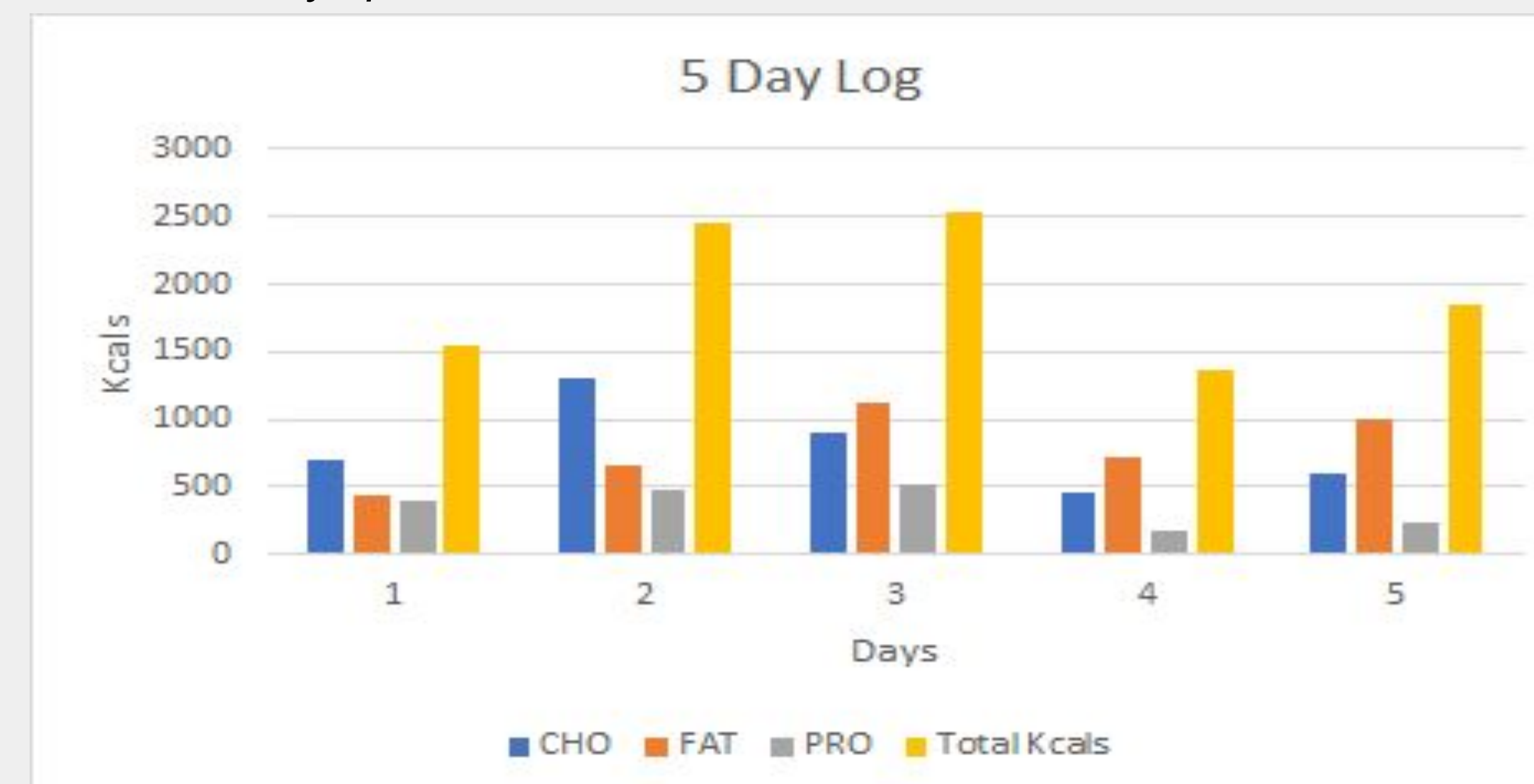
According to the Acceptable Macronutrient Distribution Range (AMDR), the subject should be consuming approximately 20% of protein, 55% of carbohydrates, and 25% of lipids within the total caloric intake for each day. The caloric intake needs to be approximately 3,111 kcal due to the sex, height, weight, and activity level of the subject. The subject's water intake should be 165 oz of water per day. The subject did not meet the require amount of kcal in week one. The recommendation is that the subject consume 622 kcal of protein, 1711 kcal of carbohydrates and 777 kcal a day to meet the needs of the AMDR. The subject met all goals except carbohydrates. The subject should focus on eating more carbohydrate rich food. Also the subject did not meet the daily water intake goal. It is recommended that the subject try to find ways to get more water.



## Week 2

Highest caloric intake for a day recorded was 2540 kcals. Average caloric distribution was 1948 total kcals compared to the recommended AMDR value of 3111 kcals per day. Calcium and iron content remained low compared to the DRI. Highest calcium consumed in 1 day was 33 mg and iron at 120 mg. Food eaten on the day that was furthest away from the daily recommended values included a high intake of fat content. Food groups included fast food products, and processed foods. Total kcals consumed for this day were 1370. This day lacked proper nutrition and dinner was obsolete. This event could have occurred due to time restraints. Food eaten on the day that was closest to the daily recommended values included percent distribution for carbohydrates being 35%, for fats 44%, and for protein 20%. Food groups included lean meat, red meat, and potato-based products. Dinner was absent for this day. To ensure better days occur, higher carbohydrate intake should occur through the consumption of leafy green vegetables and healthy fruits. Less fat should be consumed, and no meals should be skipped. The subject appeared farther away from the recommendations in the second week. This could have been due to time restraints or lack of interest to remain healthy.

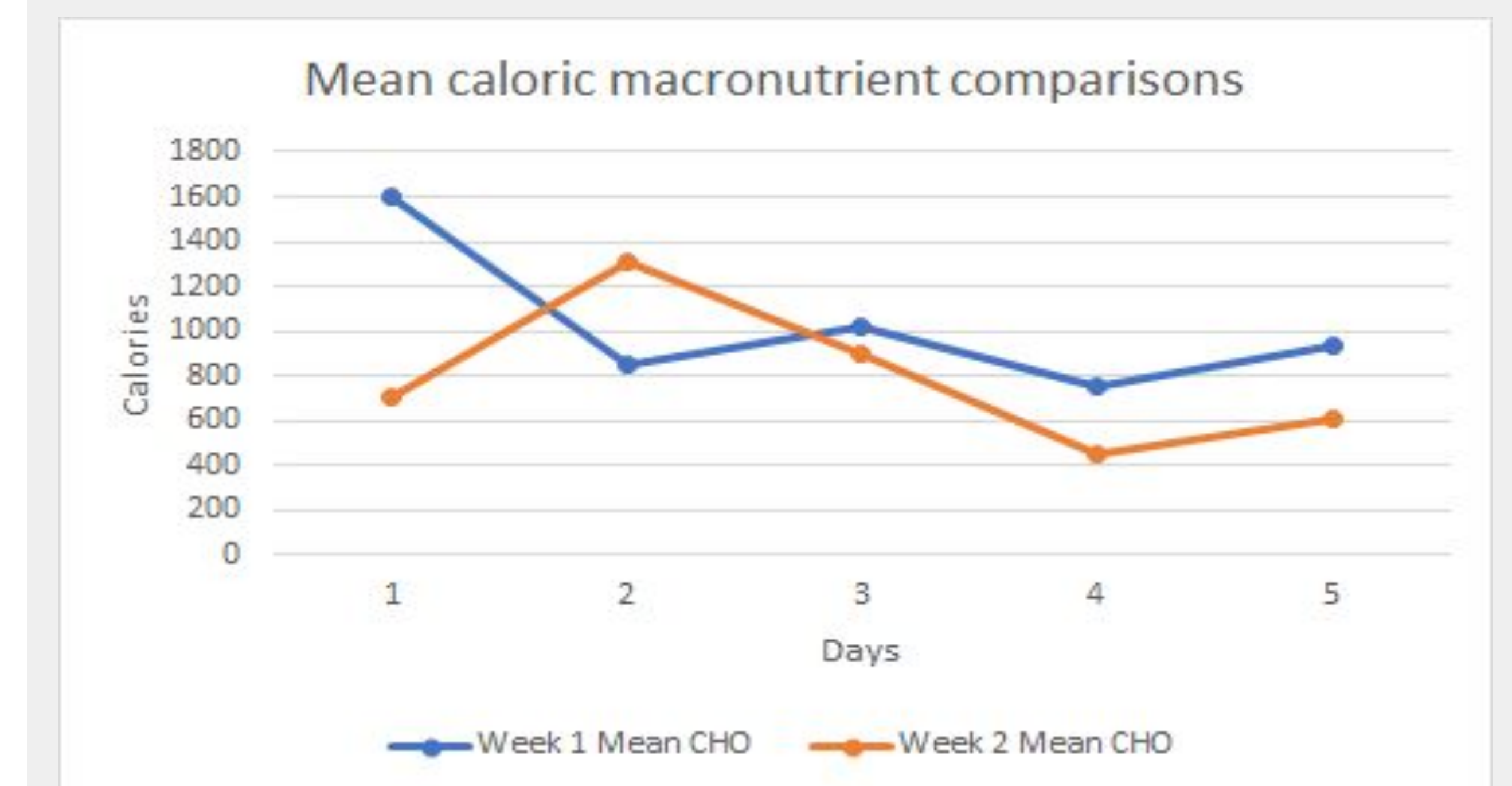
Figure 2: Week two mean macro nutrient values totaling over a 5-day span



## Comparison

Overall, week one carbohydrate intake was higher than any other day that occurred over a two-week period. Mean carbohydrate intake for week one peaked at 1600 kcals. (Figure 4) The lowest mean number of kcals for week one occurred during days two and four and was near 800 kcals. Week two mean kcals for carbohydrates began around 700 and rose during day 2 of login. Carbohydrate intake lowered throughout the events of week two. Food groups consumed during both week one and two contained very low amounts of carbohydrates and were high in fat and protein. The subject's diet should include higher volumes of healthy carbohydrate-filled food groups.

Figure 4: Mean CHO comparison between week one and two



## Conclusion

All in all, the subject did not meet his estimated caloric need, which was 3,111 kcals per day, any throughout the two week period. With that being said, each macronutrient group lacked as well. Since the subject is an athlete, all macronutrients are important; however, protein is one more focused on. According to (Phillips, 2011), "Our consensus opinion is that leucine, and possibly the other branched-chain amino acids, occupy a position of prominence in stimulating muscle protein synthesis..". The subject is also burning a number of calories in his estimated one-hour of exercise per day; therefore, eating enough food is highly significant. According to (Cotugna, 2005), "Nutritional needs for peak athletic performance include sufficient calorie intake, adequate hydration, and attention to timing of meals." The subject lacked water intake, as well as timing out his meals correctly; moreover, if he was to focus more on his nutritional health, his athletic performance could enhance.

## Reference

- Coutinho, L. A., Porto, C. P., & Pierucci, A. P. (2016). Critical evaluation of food intake and energy balance in young modern pentathlon athletes: a cross-sectional study. *Journal of the International Society of Sports Nutrition*, 13, 15. doi:10.1186/s12970-016-0127-x Retrieved from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4818861/>
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- Cotugna, N., Vickery, C. E., & McBee, S. (2005). Sports nutrition for young athletes. *The Journal of School Nursing*, 21(6), 323-328.