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“Effect of Alcohol Beverage Preference and Exercise on Diet”

The 2015-2020 Dietary Guidelines for Americans states that a healthy diet should be composed of vegetables, fruits, grains, dairy, proteins, and oils and should limit the intake of added sugar, saturated fats, sodium, and alcohol. The Healthy Eating Index-2015 Score (HEI) is based on these dietary guidelines and assesses an individual's diet quality. Based on the HEI, the average American diet failed to meet the 2015-2020 Dietary Guidelines. Failure to meet these dietary guidelines may lead to malnutrition and diet-related chronic diseases. The current study examined whether alcohol beverage preference affected diet quality in a subset of participants enrolled in an ongoing prospective, longitudinal, interventional study, ALIVE-Ex. The primary goal of the ALIVE-Ex study is to determine the effects of a 10-week aerobic exercise intervention in participants with fasting dysglycemia and at-risk alcohol use on metabolic health. We hypothesized that both alcoholic beverage preference and exercise would affect diet quality. Participants that had successfully completed the exercise intervention were included in this sub-study. The Timeline Followback (TLFB) was used to assess alcohol preference and intake over the previous 30 days. Participants were categorized into one of three categories, beer drinker, wine/liquor drinker or nondrinker, based on their alcoholic beverage preference ($\geq 50\%$ of total alcohol consumed). Diet was assessed prior to and following the exercise intervention using the Automated Self-Administered 24-Hour Diet Recall (ASA24), which documented food consumption over the previous 24 hours. Exercise sessions consisted of 30 aerobic exercise sessions over the course of 10 weeks. Sex, race, marital status, and education did not differ across beer, wine/liquor or nondrinkers; however, age, income, and BMI did differ by alcoholic beverage preference. Overall, the wine/liquor drinkers were younger, reported higher incomes and had a BMI ≥ 30 . Using the data from ASA24, we found that daily protein, fat, carbohydrate, and caloric intake were similar among the beer, wine/liquor and nondrinkers and the exercise intervention did not significantly alter these measures. A significant interaction between exercise and alcohol beverage preference was detected for HEI-total protein, suggesting that total protein scores increased following exercise in the wine/liquor drinkers, but decreased in the beer drinkers. A significant main effect of alcohol beverage preference was found for HEI-saturated fat and HEI-total score, with wine/liquor drinkers having higher scores. Overall, these data suggest that alcohol beverage preference may impact dietary choices and overall diet quality, however, these effects may be influenced by demographic factors, such as education and income. Further analyses are needed to understand the complex relationship between alcohol preference and diet. This research was supported by NIH NIAAA T35AA021097 to PEM.