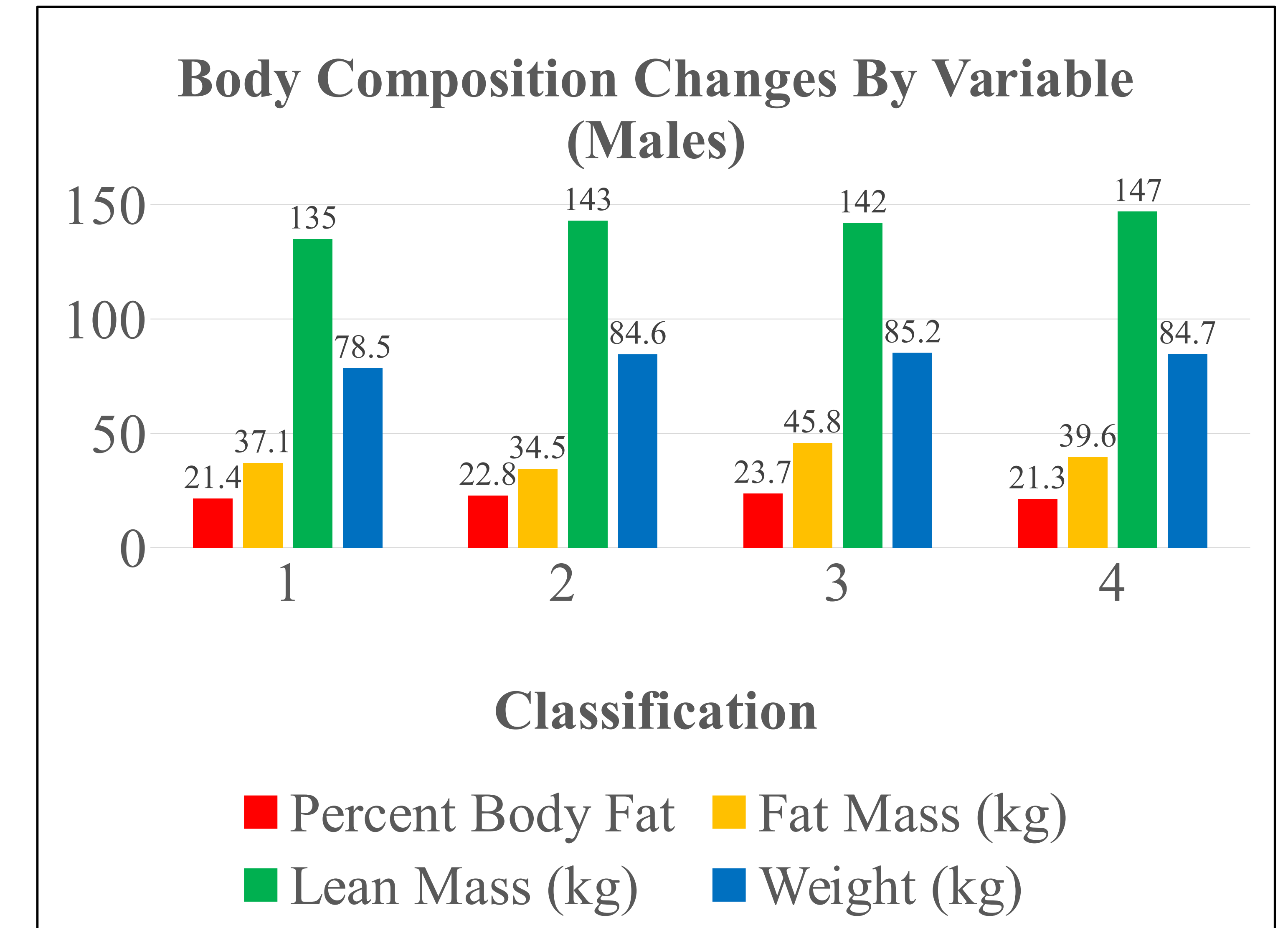
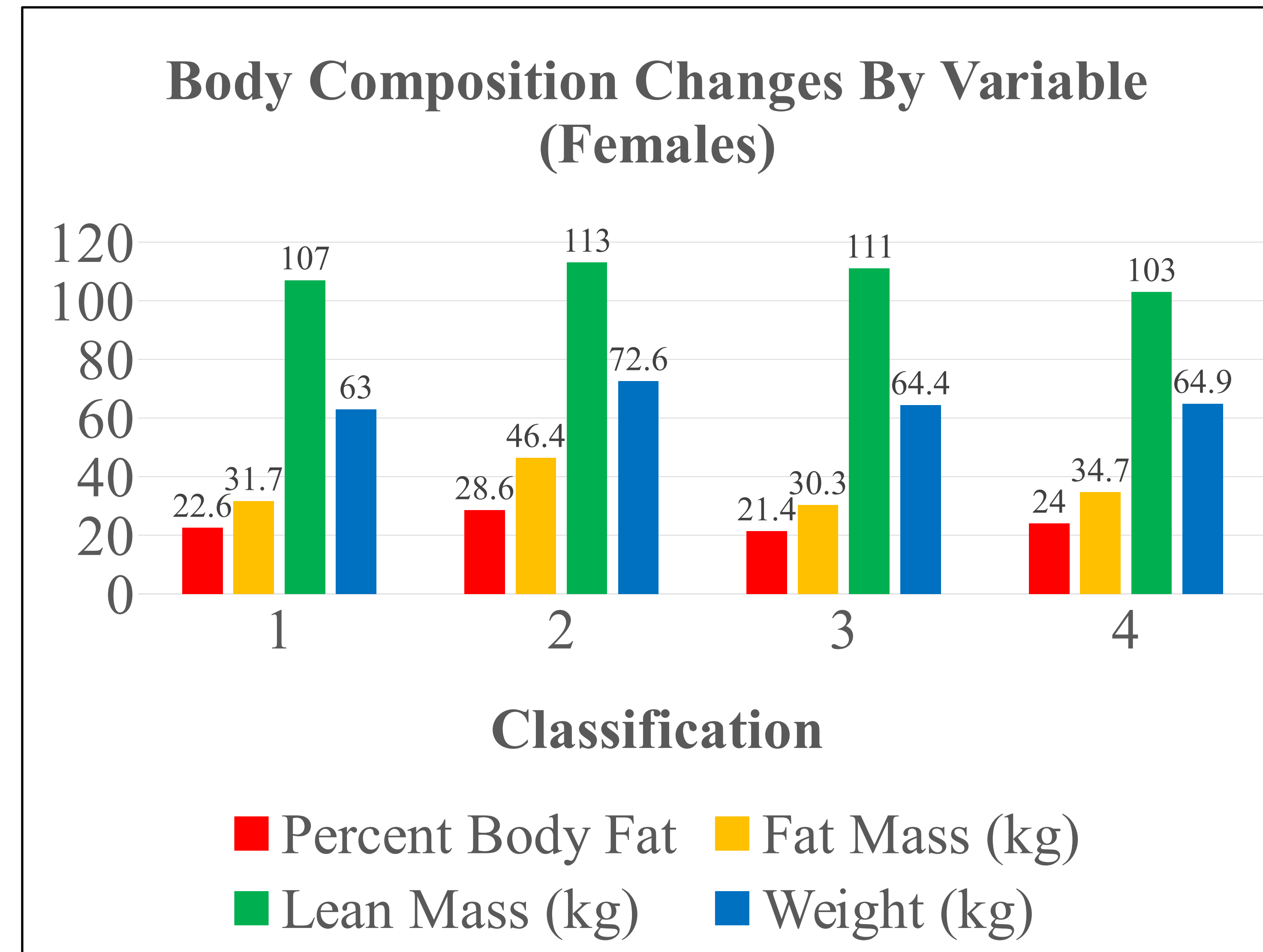


Ryan Reid, Adam Parker
Angelo State University

Introduction

Body composition is an important component of physical fitness that measures the percentage of fat, muscle, bone, and water in the human body. The use of bioelectrical impedance is an affordable, accurate, and non-invasive method of assessing one's body composition. A well known phenomenon of weight gain in college students has been thoroughly investigated and reported. This weight gain is commonly referred to as the freshman 15 (6.8 kg), although the average weight gain ranges from 1-6 kg (Vadeboncoeur, 2015). Some research has tracked weight gain beyond the first year of college, indicating students continue to gain weight in subsequent years (Lloyd-Richardson, 2009).



InBody 770

Purpose of the Study

The purpose of this project is to analyze the body compositions of different age groups among college students at Angelo State University in order to detect any positive or negative trends concerning body fat or lean mass. Various approaches to support or disprove the "freshman 15" phenomenon have been carried out, with most focusing on only 1st year students. This study is focused on analyzing the body composition changes among college students across all 4 classifications. Body composition differences between the two genders (male and female) were also analyzed.

Methods

To analyze body composition changes across the four college classifications, 46 participants (23 males and 23 females) of various classifications were analyzed using the InBody 770 body composition analyzer. This machine was utilized because of its ability to quickly and accurately assess the body composition of participants. This test involves standing barefoot on a scale that has electrodes that are stood upon, as well as electrodes that are grasped by the hands of the participant. A small, non-detectable electrical current is passed through the participant's body. Based upon the time it takes for this electricity to pass through the body (impedance), and the participant's height, weight, age, and gender, the machine calculates body composition. Lean tissue allows the current to travel faster, while fat tissue, bone, and air slows the current down. The results of the body composition analysis, including percent body fat, fat mass, lean mass, and weight, were recorded as well as the participant's age, height, and classification. The collected data was analyzed using a two-way ANOVA using gender and classification as the variables.

Results

Analysis of the data found no significant difference for percent body fat or fat mass between genders or classifications, with each having a p-value ≥ 0.05 . There was also no gender by classification interaction for percent body fat or fat mass. A significant difference was found in lean mass by gender with a p-value = 0.00, but there was no significant difference for lean mass between classifications or a gender by classification interaction. There was also a significant difference found between genders with a p-value = 0.00, but no significant difference was found for weight between classifications as well as no gender by classification interaction.

Conclusions

The current study did not show any significant changes in body composition in regards to the Freshman 15 phenomenon. A larger increase in percent body fat, fat mass, lean mass, and weight was found between the 1st year and 2nd year participants when compared to the other classification increases. However, it was not substantial enough to be considered significantly different. This study contained several limitations that may have impacted the results of the study, such as low sample size, a non-longitudinal approach, and a lack of physical activity and dietary information collected.