

## Body Mass Index Profiles of Police Cadets Belonging to Three Different Academy Classes

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# BODY MASS INDEX PROFILES OF POLICE CADETS BELONGING TO THREE DIFFERENT ACADEMY CLASSES

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## ABSTRACT

Body mass index (BMI) is a method frequently utilized for assessing an individual's health status, and for predicting morbidity and mortality risk. Although BMI has been criticized as being inaccurate for individuals with larger body frames and greater muscle mass, it does provide an easy and cost-effective health risk assessment tool that can be used to broadly determine if more invasive measures of body composition are warranted.

**Purpose:** To assess the general health status of police cadets attending three separate training academies from one US based law enforcement agency.

**Methods:** Archived data for police cadets (n = 127) from one US law enforcement agency was provided to the primary investigator for analysis. BMI was then calculated using the Quetelet Index Formula ( $BMI = \text{kg/m}^2$ ).

**Results:** Surprisingly, 2% of all cadets were classified as underweight, 33% as normal weight, 44% as overweight, and 22% as obese.

**Conclusions:** Based on these findings, it appears that the majority of police cadets attending training academy would be classified as overweight or obese. These results can be used to inform cadets about their general health status and guide training programs to reduce the risk of premature morbidity and mortality in this population.

## INTRODUCTION

Body mass index (BMI) can be used to classify individuals into different categories of health. Based on their BMI score an individual may be classified into one of six major categories:

- Underweight ( $BMI < 18.5 \text{ kg/m}^2$ )
- Normal weight ( $18.5 < 25 \text{ kg/m}^2$ )
- Overweight ( $25 < 30 \text{ kg/m}^2$ )
- Low obesity ( $30 < 35 \text{ kg/m}^2$ )
- Medium obesity ( $35 < 40 \text{ kg/m}^2$ )
- Extremely obese ( $> 40 \text{ kg/m}^2$ )

Individuals that have a BMI of 25 or higher, are shown to be at higher risk for certain medical complications, such as heart disease, hypertension, type 2 diabetes, gallstones, and some types of cancers (1,2,3).

Even though BMI has been critiqued for being inaccurate for some individuals with larger body frames, and greater muscle mass, it does provide an easy and cost effective health risk assessment.

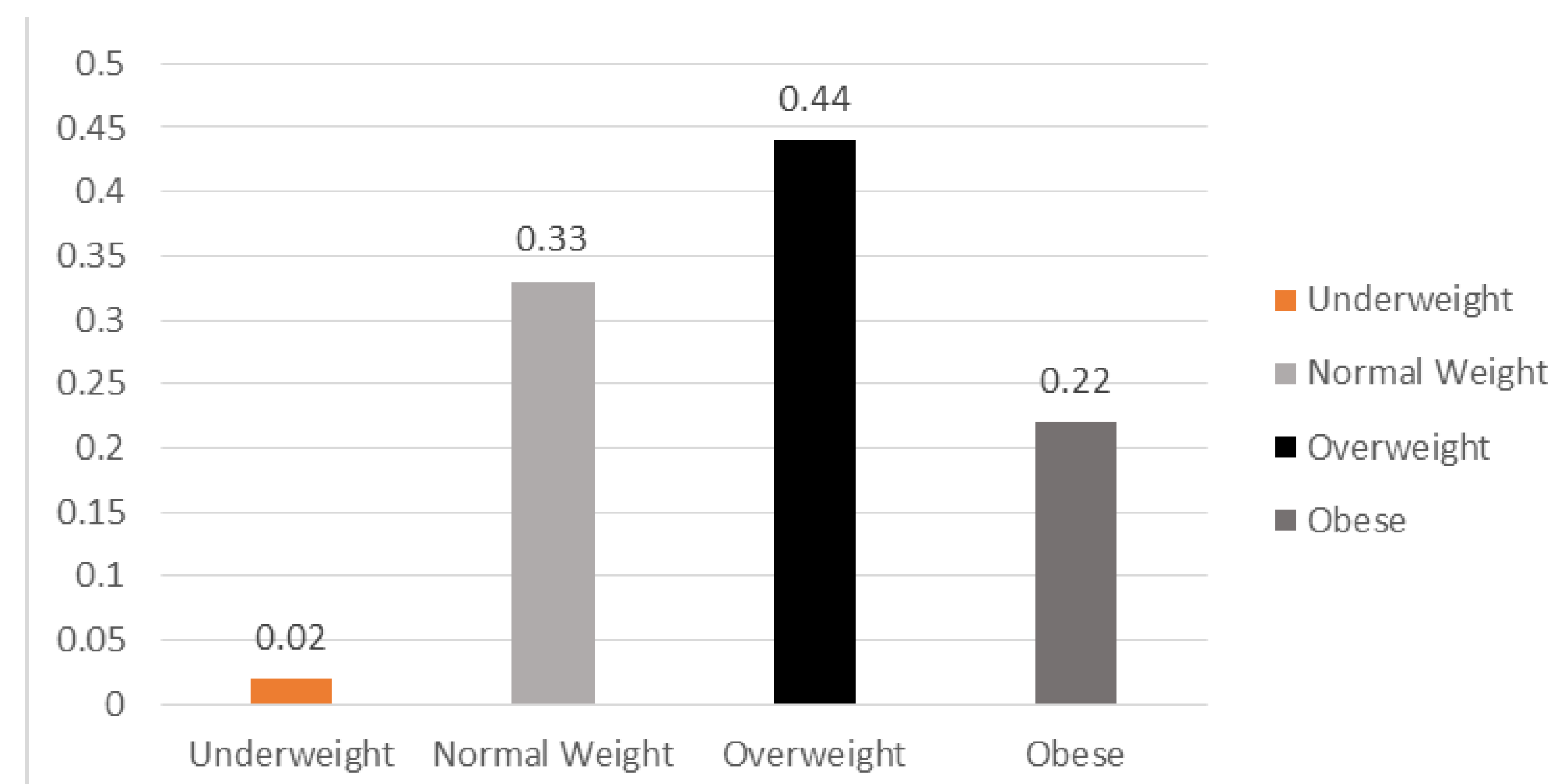


## METHODS

Archived data for 127 (M=111, F=16 age =  $31.3 \pm 7.3$  yrs ; Ht= $178.4 \pm 8.9$  cm; Wt =  $87.5 \pm 16.7$  kg;  $BMI = 27.4 \pm 4.6 \text{ kg/m}^2$ ) police cadets was utilized for this analysis. Prior to academy training, cadets had their height and weight measured via a doctor's beam scale in order to track changes in body mass during academy training and to assess general health status. BMI was calculated by dividing body mass in kilograms (kg) by height in meters squared ( $\text{m}^2$ ). Based on their BMI score, individuals were classified into one of four major categories: underweight ( $BMI < 18.5 \text{ kg/m}^2$ ), normal weight ( $BMI = 18.5 - 24.9 \text{ kg/m}^2$ ), overweight ( $BMI = 25 - 29.9 \text{ kg/m}^2$ ) obesity ( $BMI \geq 30 \text{ kg/m}^2$ ).

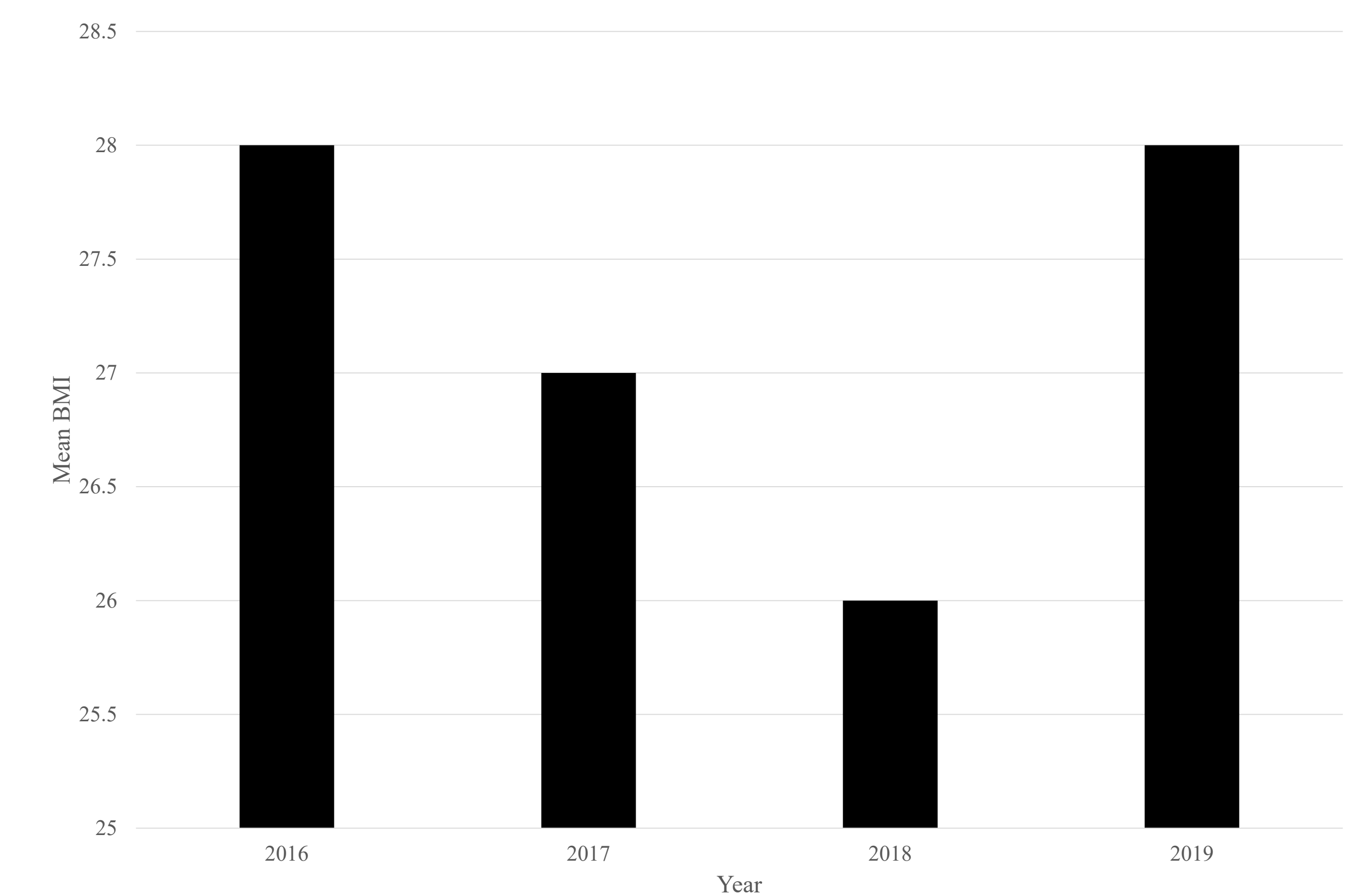
## RESULTS

Figure 1. BMI classifications



## RESULTS (CONT.)

Figure 2. Average BMI classifications for cadets by year



## CONCLUSIONS

Based on these findings, it appears that the majority of police cadets attending training academy would be classified as overweight or obese. These findings are concerning based on the known health risk associated with failure to attain and maintain an ideal body mass level. BMI may provide a simple measurement of preliminary health status for cadets participating in academy training that can later be used for providing physical activity and nutritional recommendations.

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