INTRODUCTION

Football players are at increased risk of developing metabolic syndrome (METS) due to the metabolic demands of training and playing football (13). The metabolic health of college football players is important to consider for the purpose of tailoring their training regimen and eating habits to maintain healthy lifestyles, rather than just to perform better on the field. PURPOSE: The purpose of this study was to examine the relationships between the offensive line, defensive line, and skilled positions and metabolic health status in Division III first-year players. METHODS: The following data was collected. Body Mass Index (BMI), percent body fat (n), cholesiterol levels, fasting glucose, blood pressure, and abdominal circumferences. Data were coded into three categories by the position they played (offensive line, defensive line, skilled). Metabolic data was evaluated in terms of position and relationships were examined via correlation. RESULTS: The study included 33 male first-year football players. There were three offensive lines, five defensive lines, and 25 skilled players. Four players met the criteria for METS (12%), 3 men (11%), and 1 skilled player. The mean weight for the offensive line was higher than the defensive line and skilled positions (122.5 kg, 107.1 kg, and 84.6 kg respectively). There were also significant differences between BMI, abdominal and umbilical circumferences (F = 11.0, F = 18.5, F = 7.2, p < 0.05, respectively). On Post-Hoc analysis, BMI and umbilical circumference differences were found among all three groups (p < 0.05). For umbilical circumferences, differences were only found between the offensive line and skilled players (p < 0.05). Suprailiac circumference was positively correlated (p = 0.05) with BMI (r = 0.31), percent body fat (r = 0.69), triglycerides (r = 0.43) and systolic blood pressure (r = 0.53) and negatively correlated with high-density lipoprotein cholesterol (r = -0.44). CONCLUSION: The study suggests that first-year football players are at risk for METS, with linemen having the highest risk. The supraileac circumference is related to the highest number of METS indicators. Division III football players should consider using the supraileac circumference as a measurement for pre-season health evaluations to identify high risk players.

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Metabolic syndrome (METS) is diagnosed by meeting three of the following criteria: high waist circumference, hypertension, elevated fasting blood glucose, high triglyceride levels and low high-density lipoprotein (HDL) cholesterol (4). Metabolic syndrome puts the individual at a higher risk of type II Diabetes Mellitus and cardiovascular disease (5). As with other professional sports, football players are assumed to have a decreased risk of METS and cardiovascular disease due to their increased rate of physical activity. American football players develop a training and dietary regimen based on the game's position. Skilled players tend to focus on agility and speed while linemen tend to focus on being larger and more powerful than their opponent for blocking purposes. Ideally, increased weight for linemen is composed of higher muscle mass. Instead there is a trend of higher adipose tissue and particularly abdominal fat with offensive and defensive linemen, particularly at the Division III level. These players face an increased risk of METS, diabetes and cardiovascular disease after their football careers have ended. This increased risk may be caused by the lack of emphasis on cardiovascular training for linemen and a common misconception of the primary goal to be weight gain rather than strength and power through increased muscle mass. The metabolic health of Division III football players can potentially be affected by their awareness of this increased risk, and as a result early screening for METS indicators may decrease their likelihood of developing diabetes and cardiovascular disease.

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