Differences in Body Composition of Female Soccer Players at Different Positions

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Abstract

The purpose of this study was to evaluate the difference of body composition of female soccer players at different positions.

Methods

The subjects then used a handheld bioelectrical impedance analysis (BIA), which gives a reading of body fat percentage. This reading also gave a calculated body mass index (BMI). Once all the data was collected, a two tailed t-test was run to determine the significance of the findings. The level for significance was set at p ≤ 0.05.

Results

The average age for the offensive players was 27.4 ± 8.78 years and 28.2 ± 6.44 years for the defensive players. The average height for the offensive players was 57.02 ± 1.15 inches and 25.88 ± 0.73 inches for the defense. The average weight for the offense was 57.02 ± 1.15 kilograms and 73.86 ± 15.50 kilograms for the defense. These demographics can be found in Table 1. The percent body fat calculated from the seven skinfold sites was 18.98 ± 2.62% for the offense and 25.57 ± 5.87% for the defense, which also had a statistically significant difference (p = 0.02). This information is pictured in Figure 1. The BMI, which was read from the handheld device, was 18.13 ± 0.68 for the offense and 25.72 ± 1.15 for the defense. This also had a statistically significant difference (p = 0.03). This information is pictured in Figure 2. The waist to hip ratio measured was 0.71 ± 0.03 for the offense and 0.76 ± 0.058 for the defense. This trended towards a significant difference (p = 0.07). The waist to hip ratio information can be seen in Figure 4.

Table 1: Demographics of Offensive and Defensive Players

<table>
<thead>
<tr>
<th></th>
<th>Age (years)</th>
<th>Height (inches)</th>
<th>Weight (kilograms)</th>
<th>% BF by Skinfolds</th>
</tr>
</thead>
<tbody>
<tr>
<td>Offense</td>
<td>27.4 ± 8.78</td>
<td>57.02 ± 6.42</td>
<td>18.98 ± 2.62</td>
<td></td>
</tr>
<tr>
<td>Defense</td>
<td>28.2 ± 6.44</td>
<td>73.86 ± 15.50</td>
<td>25.57 ± 5.87</td>
<td></td>
</tr>
</tbody>
</table>

Conclusions

The results of this study indicate that defensive players have a higher overall body composition of fat mass when compared to offensive players. This was found through skinfold measurements, bioelectrical impedance analysis, and body mass index. These statistical differences were significant when compared between offense and defense on all three measurements. Waist to hip ratio was also measured. This statistical difference approached a significant difference between offense and defense. These differences may be further attributed to many different characteristics such as age, training techniques, or daily activity level.