

**An Examination of Psychological and Biochemical Parameters  
of American Football Players and Volleyball Players:  
A Discriminate Analysis**

Mehmet Guclu<sup>1\*</sup>, Metin Yaman<sup>1</sup>, Gokhan Caliskan<sup>1</sup>, Hatice Pasaoglu<sup>2#</sup>,  
Erdal Isik<sup>2</sup> and Ayse Fitnet Tuncer<sup>2</sup>

<sup>1</sup>*Gazi University, School of Physical Education and Sports, GaziMah, AbantSok. No: 12,  
06330, Yenimahalle, Ankara, Turkey*

<sup>\*</sup>*E-mail: mguclu@gazi.edu.tr*

<sup>2</sup>*University of Gazi, Medical Faculty, Gazi University, School of Physical Education and  
Sports, GaziMah. Abant Sok. No: 12, 06330, Yenimahalle, Ankara, Turkey*

<sup>#</sup>*E-mail: pasaogluh@gazi.edu.tr*

**KEYWORDS** Anxiety. Catecholamines. Free Testosterone. Personality. Serotonin

**ABSTRACT** This study was carried out to determine the psychological and biochemical parameters of the American Football players who chose this high-contact sport, and to compare those parameters with those of the players of volleyball, a non-contact sport. Participants were 39 American Football Players, and 21 volleyball players. According to t-test results, there were some statistically significant differences between the average points of conscientiousness, competition anxiety, and intensity of the American football as compared to those of the volleyball players. Discriminate analysis revealed one significant function. According to discriminate function, analysis were correctly placed at 79.5 percent to the American footballers (n=31), and 85.7 percent to the volleyball players (n=18). However, 20.5 percent of the American footballer (n=8) and 14.3 percent of the volleyball players (n=3) were wrongly placed. According to dissociation analysis, the 81.7 percent players were correctly classified. In conclusion, it was revealed that the American Football Players took more self-responsibility; are more prone o worry about failure, and had more intensity and stress levels than the Volleyball Players. Nevertheless, both the American Football Players and volleyball players showed psychological and biochemical differences that obviously discriminated them according to their particular sport.