

## Body Composition of Adolescent and Adult Elite Male Handball Player

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**Background:** The factors that are milestones to contribute to an athlete's success are genetic aptitudes, proper sport training methods, optimal body composition, age, lifestyle, environmental factors as well as nutrition. Monitoring of the body composition in handball, which is a great popularity in our country, has been the object of several researches. The object of my research was the assumption that the methods developed for the average population (BMI, BMI-percentiles) do not give relevant information about the nutritional status, however, adequacy to recommendations relating to the body fat percent is in measurable connection with the performance.

**Method:** In my analysis I used the data of adult-(n=66), youth-(n=59), U16-(n=40) and U14-(n=38) age male handball players. I performed the body composition measurements with multifrequency Inbody 720 bioelectrical impedance analysis.

**Results:** The BMI-percentiles ( $\chi^2=53,038$ ,  $p<0,001$ ) or the BMI ( $\chi^2=8,208$ ,  $p<0,05$ ) do not predict the body compositional characteristics.(body fat percentage). Examining the connection between the game position and body composition the circle runners' BMI ( $28,33 \pm 1,225$ ) was significantly higher than the goalkeepers', ( $25,00 \pm 2,121$ ;  $p<0,05$ ),the centers' ( $24,83 \pm 1,835$ ;  $p<0,01$ ), the left and right back players' ( $25,17 \pm 1,993$ ;  $p<0,01$ ), or the wingers' ( $25,13 \pm 2,323$ ,  $p<0,05$ ). Regarding to the body fat percentage they were also the players on the circle runner post who showed measurably higher degree ( $14,94 \pm 3,607$ ) compared with the centers ( $9,45 \pm 4,579$ ,  $p<0,05$ ) and the backs( $10,25 \pm 4,044$ ,  $p<0,05$ ).

**Conclusion:**My research confirms the significance of using body composition measurement in professional sport. Being aware of valid data with optimization of body composition we can contribute to successes in sport.

**Descriptors:** handball, body composition, body fat percentage, BIA