



A Literature Based Review- Assessing The Body Composition Of Judo And Wrestling Players

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Introduction

Body composition is a way of reducing the body to its core: fats, proteins, minerals and body fluids. It accurately describes your weight and provides a better view of your whole life than traditional methods. Body composition analysis can accurately show changes in fat mass, muscle mass, and body fat percentage.

Body composition plays a very important role in any sport. Our discussions about diet and exercise often focus on the amount of weight we want to gain and lose. What they fail to assume is that two people of the same sex and weight may look completely different from each other because they have different physical characteristics. Body composition refers to the amount of fat, bone, water, and muscle in the body. Measuring your body composition will tell you your unique body shape and help you see areas where you can work to improve your overall health and well-being.

Judo

Judo is a tremendous and dynamic combat sport that demands both physical prowess and great mental discipline. From a standing position, it involves techniques that allow you to lift and throw your opponents onto their backs. On the grounds, it includes techniques that allow you to pin your opponents down to the ground, control them, and apply various chokeholds or joint locks until submission.

Wrestling

Wrestling is a combat sport that involves grappling techniques such as clinical fighting, throwing and pulling, integrated locks, pins and other grips. This sport can be a real competition or a sporting event. Wrestling comes in a variety of styles:

1. Such as freestyle, Greco-Roman, wrestling, judo, sambo and more. A wrestling match is a physical contest, between two competitors (sometimes more) or rival partners, who are trying to gain and maintain a high position. There are a variety of styles with different rules for both historical and modern styles. Wrestling techniques are incorporated into other martial arts as well as martial arts.

2. Wrestling represents one of the oldest forms of wrestling. The origins of wrestling go back 15,000 years with cave paintings. Icons of Babylon and Egypt depict wrestlers using the vast majority of the archers in modern sports. References to the text in it appear at the beginning of the Old Testament and in the ancient Indian Vedas. In the book of Genesis, the patriarch Jacob is said to have rebelled against God, or an angel.

Three models of body composition: in the 3-C model FFM is divided into two parts, its water content and remaining residue (PM, MM, Gn). Therefore the three garages are FM, TBW and the rest. Four models of body composition: in the remaining 4-C model solids are divided into proteins and minerals. Therefore, the four parts are FM, TBW, proteins and minerals (Moore, 1963).

Prieske, 2020 aimed to monitor long-term seasonal developments in measures of anthropometry, body composition, and physical fitness in young judo athletes, and to compute associations between these measures and sporting success. Forty-four young judoka (20 females, 24 males) volunteered to participate. Tests for the assessment of anthropometry (e.g., body height/mass), body-composition (e.g., lean body mass), muscle strength (isometric handgrip strength), vertical jumping (e.g., countermovement-jump (CMJ) height), and dynamic balance (Y-balance test) were conducted at the beginning and end of a 10-month training season. Additionally, sporting success at the end of the season was recorded for each athlete. Analyses revealed significant time \times sex interaction effects for lean-body-mass, isometric handgrip strength, and CMJ height ($0.7 \leq d \leq 1.6$). Post-hoc analyses showed larger gains for all measures in young males ($1.9 \leq d \leq 6.0$) compared with females ($d = 2.4$) across the season. Additionally, significant increases in body height and mass as well as Y-balance test scores were found from pre-to-post-test ($1.2 \leq d \leq 4.3$), irrespective of sex. Further, non-significant small-to-moderate-sized correlations were identified between changes in anthropometry/body composition/physical fitness and sporting success ($p > 0.05$; $-0.34 \leq \rho \leq 0.32$). Regression analysis confirmed that no model significantly predicted sporting success.

Louise, 2019 studied physique traits of a range of elite athletes have been identified; however, few detailed investigations of Olympic combat sports (judo, wrestling, taekwondo and boxing) exist. This is surprising given the importance of body composition in weight category sports. We sought to develop a descriptive database of Olympic combat sport athletes, compare variables relative to weight division and examine differences within and between sports. Additionally, we investigated the appropriateness of athletes' self-selected weight classes compared to an internationally recognised classification system (the NCAA minimum wrestling weight scheme used to identify minimum 'safe' weight). Olympic combat sport athletes (56♂ , 38♀) had body mass (BM), stretch stature and dual-energy X-ray absorptiometry derived body composition assessed within 7–21 days of competition. Most athletes were heavier than their weight division. Sport had an effect ($p < .05$) on several physique traits, including; lean mass, lean mass distribution, stretch stature and BMI. BM was strongly positively correlated ($r > 0.6$) with; fat free mass, fat mass and body fat percentage, however, was not predictive of total mass/weight division.

Timothy, 2012 studied the quantifying human body composition has played an important role in monitoring all athlete performance and training regimens, but especially so in gravitational, weight class and aesthetic sports wherein the tissue composition of the body profoundly affects performance or adjudication. Over the past century, a myriad of techniques and equations have been proposed, but all have some inherent problems, whether in measurement methodology or in the assumptions they make. To date, there is no universally applicable criterion or 'gold standard' methodology for body composition assessment. Having considered issues of accuracy, repeatability and utility, the multi-component model might be employed as a performance or selection criterion, provided the selected model accounts for variability in the density of fat-free mass in its computation.

Conclusion-

Body composition: Variations of body composition is responsible for almost 70% of the differences of VO₂ max value in individuals. The effect of body composition on aerobic capacity is related to body surface area, body mass, fat free body mass or limb volume. Research suggests 43% difference in VO₂ max of untrained man and woman differing in body composition. When the value expressed in per unit of body weight women still 20% lower than men. Much of the differences in VO₂ max between men and women is attributed to body composition. Although there are other biologic differences between the sexes, the size of the contracting muscle mass is an important factor for aerobic capacity of an individual. Because of the above factors, the aerobic capacity values available worldwide varies significantly from country to country, from race to race, from job to job dependent on physical activity levels. There are different factors like climate, season, local topography which have influence on physical activity pattern. Extremes of heat, cold, heavy rain and draught change the range of habitual activity and modify the physical fitness and working capacity.

References-

- Prieske, O., Chaabene, H., Gäbler, M., Herz, M., Helm, N., Markov, A., & Granacher, U. (2020). Seasonal changes in anthropometry, body composition, and physical fitness and the relationships with sporting success in young sub-elite judo athletes: An exploratory study. *International Journal of Environmental Research and Public Health*, 17(19), 7169.
- Reale, R., Burke, L. M., Cox, G. R., & Slater, G. (2020). Body composition of elite Olympic combat sport athletes. *European journal of sport science*, 20(2), 147-156.
- Jonnalagadda, S. S., Skinner, R., & Moore, L. (2004). Overweight athlete: fact or fiction?. *Current sports medicine reports*, 3(4), 198-205.
- Durnin JV, Womersley J. Body fat assessed from total body density and its estimation from skinfold thickness: measurements on 481 men and women aged from 16 to 72 years. *Br J Nutr* 1974; 32: 77–97.
- Ziegler, E. E., A. M. O'donnell, S. E. Nelson, And S. J. Fomon, 1976, Body composition of the reference fetus. *Growth* 40: 329–341.

- Spady, D. W., 1987, A description of the changing body composition of the growing premature infant. *J. Pediatr. Gastroenterol. Nutr.* 6: 730–738.
- S. P. Singh and P. Malhotra, 1989, Kinanthropometry Human size, shape, proportion, PAGE 151 composition, maturation and gross function. Lunar Publications, patiala, India.
- Wang ZM, Deurenberg P, Guo SS, Pietrobelli A, Wang J, Pierson Jr RN et al. Six-compartment body composition model: inter-method comparisons of total body fat measurement. *Int J Obes Relat Metab Disord* 1998; 22: 329–337.

