



# The Relationship between the body Composition and anaerobic power in non-athlete girls

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**Abstract:** The purpose of this investigation is to determine the relationship between the physical combination and anaerobic power. The female student athletes of the Shomal-Amol university had formed the statistic body of the investigation that were 50 persons. First the individual characteristics of the samples registered and the sizes of anthropometric and physical form included: length, weight, BMI, fat percent, the circles of crag, arm, shin, Renee, forearm, the epicondyle of the forearm and the epicondyle of the Renee were measured. Anaerobic power was measured by RAST test. The peiersoun correlation coefficient was used for correlation between variants and kolmogorov – smirnov test was used in order to have natural datum and for certainty of the natural contribution of the testees. Average and sannital standard digression of the testees: 20.84±1.23 year, length: 161.84 ±6.42 cm, weight 59.04 ± 9.36 kg and BMI 22.54 ± 3.30. These present findings of research showed that there isn't any meaningful relationship between anaerobic power with physical form and athletes, specially, the ones of the explosive filed such as: volleyball must deposit more concentration on anaerobic system of their bodies.

**Keywords:** body composition, anaerobic power, anthropometric, BMI, fat percent.

## INTRODUCTION

Research shows that anthropometric characteristic, the body composition and anaerobic power are effective in the primary recognition of the athletes' capacity – finding, skill improvement and motional physical performance (1,2,3), so that for reaching to a high level of physical performance, they disposed essential and private information about the factional characteristic and increasing the level of skill and performance for coaches and athletes.

Success in any athletics filed needs the real perception of the special physiologic and physical capacities. We can say that maybe first step in choosing capable athletes in the course of realistic recognition is personal capabilities. There the prone measurement of physiologic and bio mechanic exercise have prominence. However, assembling the tools and suitable tools measurement is one of the chief steps in programming the right physical exercise and improvement of the computational performance of athletics (4). The potency is used for representing the amount of done activity in the measure of time. Speed or intensity of the activity performances are determinative factors (5).

So speed and intensity of the replacement of body in the measure of time is regarded as the potency. Many factors impress the potency that include: physical, activity time and performance, muscular mass, muscle temperature, kind of contraction, speed of muscle contraction and joint movement side hill the potency simultaneous product of power and speed are interdependent (6,8).

Organs are not subtle in the active muscle contraction and due to the skeet of their ambulant, muscle can be effective for impressive physical performance. Low body fat and favorite muscle weight are key factors because the high body fat causes proportional reduction of the power of athletes and their performance. Fleck and Wilmor suggested that the body fat of the male athletics must be between 11-12% and women must be at the range of 16 – 25 % be depended to the athletics activity (10). The indicator of the body mass (MB) as an authentic indicator for the measurement of the body form and scale of persons' overweight on the base of length and weight, it's the main reason of persons' distribution in different weight groups in the different fields such as resting jiu-jitsu and weight lifting. So BMI is a criterion for evaluating the persons to company in different athletics competitions and it should not be used to determine the measure of fat because it does not break up the fat and fatless weight (11,14). The purpose of the ponder test of anaerobic power by the physiological view is to determine the existent capacity power comparison with the confirmed criteria of the control of the physiological capacity changes resulted by exercise and also to determine the characteristics of athletes, fixing the good during the rehabilitational program and recognition the talents (9,12).

The usage of the authentic filed tests proportional reveals the strengths and defects and causes programs that simplify the realistic improvement of athletics. These tests should have special characteristics such as: muscular power measuring based on the indirect evaluation of biological, chemic and physiological indicators, the maximum of muscular perseverance, power, muscular exhaustible and also be easy performance, economical and executable in all of the laboratories in athletics science. In general, these kind of tests should be safe and have a high level of reliability (7). Most of the athletics fields need to the fast and short term activity performance with a maximum of power efficiency. The power extension capacity is numerated as the factor in the success of heroes. The coaches of different athletics fields specially sprint, flings, jumps, football and volleyball that anaerobic power is important in them, are continually searching the improvement of ways of anaerobic power measuring test that is counted as the most authentic anaerobic power measuring test. And the anaerobic preparation valuating (13,17,18) the purpose of this investigation is considered to survey the relationship between the anaerobic power and body composition of the persons. Then by using these results, we can take a step to the improvement and accession of the athletes in related physical fields (15,16).

## **METHODOLOGY**

The manner of investigation

50 students unphysical-training of Amol-Shomal university are selected and first the physical and physiological characteristics of testees such as length, weight, age, circuitry crag, circuitry forearm, circuitry shin, the measurement of the epicondyles, forearm and leg were measured in order to determine the body composition. Seven-point way was used to measure the percent of fat. For measuring percent of the under skin fat of regions under the shoulder, breast, triceps brachial, ranees, abdomen and superior spine, caliper instrument whit regard to the done result, BMI (with deviation of the weight (kg) on the square of length (cm) index, WHR (the deviation of the circuitry girdle on the ranees cycle) of testees were computed. The tester again performed the rast test, for acquitting the testees. The best was performed on a hard and flat surface and persons were running a certain distance of 35 meters in the 8 alternation and between each phase of the activity, there was 10 minutes for rest.

Statistic courses

Parametric tests such as average and standard deviation was used for analyzing the datum and the Pearson coefficient correlation was used for evaluating the relationship and the degree of correlation between variant.

Kolmogorov – smirnov also was used for the naturalness of the datum and for ensuring the naturalness of the tests distribution. SPSS soft was considered with 0.05 meaningful level.

**RESULT**

The findings of investigation

The maximum and minimum of the anaerobic power and standard deviation of the tiredness indicators get by the rast test is represented in table: 2 and also the average and standard deviation of the descriptive finding of the body composition from testees (andomorph, mesomorph, ectomorph) can be seen in the table3.

**Descriptive Statistics**

Table 1 anthropometric eximious indicators of the testees

	N	Minimum	Maximum	Mean	Std. Deviation
<b>age</b>	50	19.00	23.00	20.8400	1.23487
<b>height</b>	50	148.00	175.00	161.8400	6.42813
<b>weight</b>	50	41.15	80.50	59.0470	9.36478
<b>Waist</b>	50	60.00	88.00	73.4800	7.38584
<b>Hip</b>	50	83.00	112.00	99.2600	6.50215
<b>MUAC</b>	50	23.00	38.00	28.4700	3.34483
<b>Away leg</b>	50	31.00	49.00	38.1800	3.42226
<b>BMI</b>	50	16.28	29.65	22.5400	3.30145
<b>WHR</b>	50	.65	.85	.7398	.05046
<b>BODYFAT</b>	50	3.89	6.93	5.1306	.66258

The meaningful relationship was not earned between anaerobic power with thw body composition that is represented in table 4.

**Discussion and conclusion**

The finding of the present research showed that there is not any meaningful relationship between body composition and anaerobic power, so that it disposes basic and special information about the motional characteristics, increasing the level of skill and performance for coaches and athletes.

Mostly the training fields have anaerobic power system, that this criterion is different in divergent fields. Fields such as volleyball, tennis, etc..., and the findings of ready research is peered with the findings of shimal koly et al. They oppugned the relationship between BMI and the percentage of the fat and results of the research showed a meaningful relationship between BMI and the fat present (22), with regard to the findings of the present research we can say that athletes, specially the athletes of anaerobic power such as volleyball, tennis, etc., in order to reach the climax level of their performance should concentrate more on the improvement of their anaerobic system of their bodies and by using the related exercise and suitable nourishment, supply the essential energy of the anaerobic system to the possible bound.

Athletes who have a lower fat present, consequently enjoy speedy deftness and vantage anaerobic power. But this phenomenon due to the extra exercise on the anaerobic power system and pronging time exercise system of the anaerobic power activates, causes fat metabolism and its reduction. Explosive activities attain their energy from the anaerobic system which has two kinds: phosphocreatine pc system, glycolic or lactic acid for supplying the energy. As you see, fat does not have any station among these materials, so we can conclude that the explosive activities which is armed on anaerobic system, does not have any role in burning the fat and its transmutation of the energy with regard to this information can be better used in the related exercise in a marked goal.

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