Research on the Basic Exchange of Students

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ABSTRACT

The article determined the energy consumption of the body of student athletes, based on how many times a week they go in for sports, taking into account some anthropometric indicators. There was a correlation between their basal metabolic rate and the energy they expend during exercise. In addition, energy costs were calculated when a student ran a distance of 100 m, depending on the speed and weight of the girls. Based on the results obtained, appropriate conclusions were drawn.

Keywords: Basic Metabolism, Chemical Work, Muscle Contraction, ATF, Energy Consumption, Reed Formula.

Introduction

The human body performs various functions continuously throughout its life [1-3]. Such works include 1) mechanical work - muscle movement; 2) chemical work - in the synthesis of complex compounds in cells; 3) electrical work - in the formation of a potential difference between the protoplasm and the external environment; 4) osmotic work - occurs when scarce substances are transferred from the external environment into the cell, where there are many of them [4-11].

Of these 4 main types of work, the decrease in ambient temperature also occurs due to the transfer of heat through the human body, radiation and radiation. The body receives energy from the environment in the form of potential energy contained in the chemical bonds of molecules of fats, proteins and carbohydrates [12-19]. Complex organic molecules oxidize over a period of time, during which energy is released when chemical bonds are broken. The accumulation of energy occurs mainly in the high-energy phosphate bonds of ATP. However, ATF also serves as a means of transporting energy as it travels by diffusion to areas where energy is needed [19-26]. When energy is required, the bond of the terminal phosphate group is broken by hydrolysis and the chemical energy it contains is released. The use of this form of energy by cells determines life. It is distributed as follows: liver-27%, brain-19%, muscles-18%, kidneys-10%, heart-7% use this energy for survival [27-31].

During exercise, only 20% of the energy is cleared for muscle contraction and converted into mechanical energy, while the remaining 80% is released as heat. The fact that the amount of heat generated in the body at a given time (for example, within 20-24 hours) exactly corresponds to the amount of heat energy that can result from a complete cycle of oxidation of nutrients entering the body. authority to manage these processes [32-39]. When calculating the energy consumption of athletes, it is also necessary to take into account the energy that supports the vitality of the athlete's body - the main metabolic energy. In addition, this exchange also

depends on environmental conditions, sex, age and climatic conditions [40-42].

We conducted the main exchange with 10 students studying at the Faculty of Physical Education of the Fergana State University [30-36]. When laying the subject on his back, the pulse is counted in a relaxed and emotionally calm state, the maximum and minimum blood pressure is measured according to the Korotkov method on the right arm 3 times in a row with an interval of 1-2 minutes. . The minimum values for the calculation are obtained [37-45].

Basic metabolism can be studied in men and women using special formulas.

Base exchange was calculated using the following formulas.

For women = 655 + (9.5 hours of weight, kg.) + (1.9 hours of height, cm) - (4.7 hours of age, years) for men = 66 + (13.8 hours of weight, kg.) + (5 hours of growth, cm.) - (6.8 hours of age, year)

Reed's formula for determining the degree of deflection;

The frequency of read-deviation was used = 0.75 - (75 imp/min + (40 pulse-pressure - 0.74)) - 72. Initially, some anthropometric measurements of female students were obtained [46-49].

Table 1. Coefficient for calculating energy consumption for a week of physical culture and sports:

An exercise	Multiply by factor
I don't do	1,2
i do light work	1,375
I train an average of 3 and 5 times a week	1,55
I train 8 times a week. It's heavy	1,725
I train 2 or 3 times a day before a race. it's too hard	1,9

Based on the results of the above experiment, the following conclusions can be drawn. There is a directly proportional relationship between the energy a student spends on basal metabolism and the energy she spends in class [50-56].

The differences in student criteria are compelling:

X = 1639.8 U = 2509.2 d = 870 t-statistics-22.2 R = 0.001 tst = 1.85

According to the correlation analysis: Dx = 7691.3 Dy = 32232.7 r = + 0.83

The amount of energy expended on exercise also led to an increase in basal metabolic rate [57].

In addition to the experimental results presented above, we also studied the energy lines that occur when female students run 100 meters.

100 m depending on the speed and weight of the students. energy consumption during running is determined by the following formula.

$$\sum \upsilon = 1{,}54 + 0{,}526 \cdot P + 0{,}049 \cdot P \cdot \upsilon^2$$

kJ/min (kcal/min)

where P - girl's weight (kg.) y - speed, m/s

100 m running speed $\overline{x}$ = 5,47 m/s. equals, *Dx* = 0,08 m/s. and energy consumption during this exercise $\overline{y}$ = 424,86 kkal *Dy* = 21,2. Correlation coefficient γ = +0,66 t_{ϕ} = 3,4 tgt = 2,26. P = 0,05

We performed a correlation analysis between these anthropometric measurements to determine which were associated with basal metabolic rate.

The main exchange is associated with the growth of students

H = 166,43 y = 1643,23

Dx = 10,52 DX = 7443

Correlation coefficient r = +0,71 St=57,7

T_{kp}= 1,86 P = 0,001

It was also shown that the coordination of the students was highly proportional to the quality of the students.

X = 56 y = 1643,6 Dh = 17,5 Du = 7443

r = 0,94 t_{st} = -57,8 t_{kp} =1,86

The basic exchange rate is low, but is strongly tied to the age of the students.

H 23,9 y 1633,5 Dx 1,43 Du 75630,4

r = + 0,35 t_{st} = -57,8 P = 0,001 t_k =1,86.

Conclusions

1. There is a directly proportional relationship between the energy that a student spends on basic metabolism and the energy that he spends on learning.
2. An increase in basal metabolism also leads to an increase in the amount of energy expended on exercise.
3. The speed at which female students run is 100m depending on their height and weight. energy expenditure during running is correctly correlated.
4. The dependence of basal metabolism on the height and weight of students has been confirmed.

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