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Сушков Д.М.

РАСПРЕДЕЛЕНИЕ ПОДКОЖНОЙ ЖИРОВОЙ КЛЕТЧАТКИ В ЗАВИСИМОСТИ ОТ СПОРТИВНОЙ АКТИВНОСТИ

Научный руководитель – к.филол.н., доцент Гордеева О.Н.

Башкирского государственного медицинского университета, Уфа

В статье рассмотрено распределение подкожной жировой клетчатки в зависимости от спортивной активности. Исследование проводилось с помощью биоимпедансометрии, антропометрии и ультразвуковой диагностики. Места с наибольшей локализацией и места с наименьшей локализацией у обеих групп оказались различные.

Ключевые слова: подкожная жировая клетчатка, ультразвуковая диагностика, жировая ткань

Sushkov D.M.

DISTRIBUTION OF SUBCUTANEOUS FAT DEPENDING ON ETHLETIC ACTIVITY

Scientific supervisor – Ph.D., Associate professor Gordeyeva O.N.

Bashkir State Medical University, Ufa

The article considers the distribution of subcutaneous fat depending on sports activity. The study was conducted using bioimpedance measurement, anthropometry and ultrasound diagnostics. The places with the highest localization and the places with the lowest localization were different for both groups.

Key words: subcutaneous adipose tissue, ultrasound diagnostics, adipose tissue

Body weight and body composition are factors of performance and endurance in many sports. BMI (body mass index) indicates a moderate association with body adipose tissue and disease risk compared to estimates based on height and body weight. Weight or adipose tissue mass limits There are currently no generally accepted lower and upper limits for male and female athletes. MRI(magnetic resonance imaging) is considered the gold standard for determining body adipose tissue content and its distribution. MRI(magnetic resonance imaging), absorptiometry, bioimpedance - are characterized by very high accuracy, but are not available for daily use due to their high cost and poor cost-benefit ratio. Caliperometry has a low reproducibility. The ultrasonic method of measuring the pancreas avoids the compression and movement of tissues that occur when using a caliper and caliper, demonstrates high reproducibility and can be used to differentiate subcutaneous adipose tissue from visceral adipose tissue, as well as to measure skin folds. Ultrasound provides the most accurate measurements of the pancreas due to a significantly higher image resolution than MRI (0.1 mm versus 1.3 mm) ultrasound of the pancreas is a relatively new method of studying the pancreas, for which there are still no boundaries of the norm, especially for people involved in sports, in addition, national differences have not been studied. The purpose of the study. To study the distribution of body adipose tissue depending on the level of athletic activity.

Material and methods

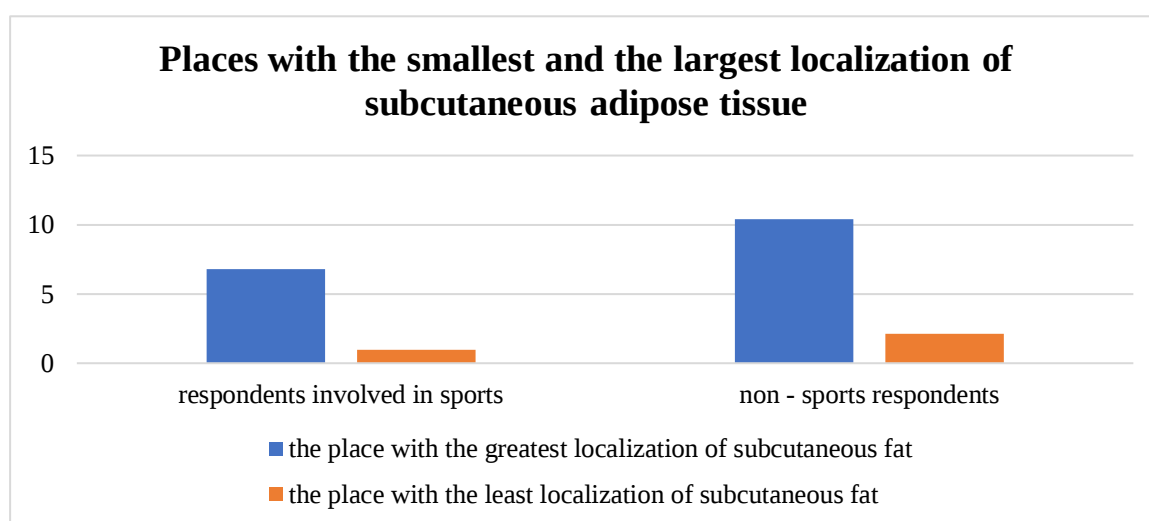
59 male respondents from among the students of BSMU were surveyed, who were divided into 2 groups: the first (main) group included 33 respondents engaged in sports, the second control

group composed of 26 respondents who do not engage in sports. The study included a questionnaire (sports, social history), anthropometry (including measurement of subcutaneous adipose tissue at 56 points using ultrasound), and a study of body composition (bioimpedance). The analysis of the obtained data was carried out using the Statistica 10 application software package.

Results and discussion

When comparing the two groups, there were no differences in age, height and weight ($p \geq 0.05$). At the same time, the body mass index in both groups was more than 20 and less than 25. The duration of sports in group 1 is 7 [6;11] years. When comparing the results of subcutaneous adipose tissue measurement using ultrasound, it was found that the thickness of skin folds in the respondents from group 2 was statistically greater ($p \leq 0.05$ in all cases), compared with similar parameters from the main group, at the following points: above the shoulder, above the forearm, above the triceps of the shoulder, over the chest, over the abdomen, over the back, over the buttocks, over the thigh and shin.

When measuring the proportion of adipose tissue, it was found that the proportion of adipose tissue in the respondents from the first group was less: it was 15.7 [11.3; 16.6], in the control group similar values were 17.4 [31.2; 29.7], the level of reliability of differences was $p = 0.031627$.



Non-sports respondents (group 2)			
localization	Median	25 percentile	75 percentile
Above the biceps of the shoulder	2,24	1,27	2,8
Above the forearm in front	2,13	1,62	3,4
Above the scapular area	4,82	2,06	6,3

Above the buttocks	5,38	2,8	10,0
Above the back of the thigh	10,4	4,3	21,0
Above the squares of the shin	4,73	3,3	5,3

Respondents involved in sports (1 group)

localization	Медиана	25 перцентиль	75 перцентиль
Above the biceps of the shoulder	0,96	0,18	1,93
Above the forearm in front	1,05	0,27	2,3
Above the scapular area	2,89	1,6	4,38
Above the buttocks	6,8	3,0	9,6
Above the back of the thigh	2,9	1,5	5,8
Above the squares of the shin	2,9	0,9	4,2

Conclusion.

Depending on the level of athletic training, there is a different distribution of subcutaneous adipose tissue. The thickness of subcutaneous adipose tissue and the proportion of adipose tissue are greater in respondents with low athletic fitness, despite the fact that the body mass index in both groups was within the normal range.

REFERENCES

1. Noncommunicable diseases in the South-East Asia Region, 2011: situation and response. [Feb; 2022]
2. Overcoming obesity: An initial economic analysis. [Feb; 2022];McKinsey Global Institute London.
3. Global status report on noncommunicable diseases 2014. [Jul; 2021]