The least popular reasons for respondents in the two groups were: "dropping out of club, organisation", "artificial age restriction of participation in competitions", "family education", "not enough competitions", "do not like the sport", "do not like the training methods used by the coach".

**Conclusion.** The reasons for the end of a sport career in youth depend on the level of sport qualification. Timely identification of the reasons will help coaches and parents to predict possible sporting contradictions and to find other countervailing motives if it is not appropriate for an athlete to leave.

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## DISTRIBUTION OF FAT AND MUSCLE COMPONENTS OF THE BODY OF SWIMMERS OF VARIOUS QUALIFICATIONS

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Keywords: body composition, fat and muscle mass, asymmetry, qualified swimmers.

Relevance of the research. During the professional training of swimmers, it is necessary to seriously approach the morphofunctional features of each athlete for the competent construction of the training process [1]. It is necessary to take into account not only age and gender characteristics, but also the distribution of fat and muscle mass along the body [2]. The latest non-invasive research methods allow for a minimum period of time to perform a segmental analysis of the body of the student's body [3].

The purpose of the research: to identify options for the distribution of fat and muscle body mass of athletes of various qualifications engaged in swimming.

**Material and methods.** The study of scientific and methodological literature made it possible to analyze the morphological features of persons of youthful and first mature age engaged in various sports. Bioimpedance measurement and methods of mathematical statistics were also used in the study. In the conditions of the research laboratory of the Department of Anatomy and Biomechanics of the University of Sports, 32 qualified swimmers of different sexes were studied. The average age was 18,6 years. Female persons entered the first group of athletes, male persons entered the second. Among the girls, 25% had the title of MS of the Russian Federation, 62,5% – CMS. Among males, 17,4% each had the title of MS of the Russian Federation and I category, 60,9% – CMS.

**Findings and their discussion.** Using the Tanita BC 601 electronic scales, the body fat and muscle mass of athletes on the upper, lower limbs and trunk was determined. The overall indicator of the severity of muscle mass in male swimmers was 60,2 ± 1,4 kg, which in relative terms corresponds to 82%. Segment-by-segment analysis on the upper limb of both arms showed that the muscle mass on the right was 3,67 ± 0,2 kg, on the left 0,32 kg more, which may indicate left-sided asymmetry (Table 1). A similar pattern is observed on the lower limb with a left-sided displacement of muscle mass by 1.22 kg. In the torso area, the severity of the muscular component reached 31,1 ± 1,6 kg. The muscle mass of the lower extremities relative to the average body weight was 28,9%, the upper – 10,4%, the trunk – 42,1%.

Table 1 – Indicators of fat and muscle mass of qualified male swimmers

| Indicators | M±м | σ | V% |
|---|---|---|---|
| Muscle mass (MM), kg | | | |
| General MM | 60,21±1,42 | 6,3 | 10,6 |
| MM right hand | 13,73±0,2 | 1,74 | 19,16 |
| MM left hand | 15,26±1,4 | 3,7 | 46,4 |
| MM torso | 31,11±2,1 | 3,22 | 9,8 |
| Fat mass (FM) % | | | |
| General FM | 12,69±1,2 | 4,3 | 33,9 |
| FM right hand | 24,24±2 | 12,08 | 52,8 |
| FM left hand | 25,42±1,1 | 12 | 47,8 |
| FM torso | 12,47±1,5 | 3,85 | 30,8 |

In girls, the content of the muscle component corresponds to 43,2 ± 0,96 kg, the relative values reached 76,5% (Table 2). Comparative characteristics on the upper extremities revealed a slight right-sided asymmetry of muscle mass by 0.03 kg. On the lower extremities, the average values of muscle mass shifted towards the left leg by 1.6 kg. As a result, the cross asymmetry of the distribution of muscles on the upper limb to the right, on the lower to the left side was determined. In the body area, the absolute values of muscle mass were 24,6 ± 0,5 kg. The relative figures of muscle mass on the upper limbs reached 7,79% of the total body weight, on the lower – 29,7%, on the trunk – 43,5%.

Table 2 – Indicators of fat and muscle mass of qualified female swimmers

| Indicators | M±м | σ | V% |
|---|---|---|---|
| Muscle mass (MM), kg | | | |
| General MM | 43,2 | 2,8 | 6,6 |
| MM right hand | 9,7 | 0,54 | 13,8 |
| MM left hand | 11,2 | 1,4 | 25,8 |
| MM torso | 24,6 | 1,5 | 6,2 |
| Fat mass (FM)% | | | |
| General FM | 20,3 | 4,7 | 23,1 |
| FM right hand | 41,3 | 9,3 | 48 |
| FM left hand | 41,4 | 10,1 | 51 |
| FM torso | 17 | 5,1 | 29 |

The analysis of the fat component showed that the average values on the right hand of swimmers are 10 ± 1,17%, on the left – 11,31 ± 1,2%. The differences reached 1,31%, left-sided asymmetry was revealed. The fat mass on both legs was 28,2%, on the right leg – 14,24 ± 1,52%, which is 0,28% more than on the left – right-sided asymmetry. On the torso 12,5%.

In the studied girls, the severity of fat mass in relative terms of body weight was 20,3%, a slight shift to the left side by 0,43% occurred on the upper extremities, a right-sided asymmetry was revealed on the lower extremities by 0,7%. 17,1% of the body fat mass was determined in the trunk area. The existing asymmetry in the severity of the fat and muscle components of the body on the upper limb may indicate unbalanced physical activity, right- or left-handed athletes. Differences in the severity of body components on the lower extremities may be due to their different lengths and lead to the development of right- or left-sided scoliosis. The specifics of the sport also have an impact on the distribution of fat and muscle mass along the body.

**Conclusion.** As a result of the bioimpedance study, original statistical data were obtained on the severity of the fat and muscle components of the body of swimmers of various levels of fitness, sexual and age characteristics, on the basis of which an initial morphological analysis can be carried out In the future, repeated studies will help to identify the dynamics of the desired indicators, analyze the options for the location of the masses along the body and, as a result, determine the individual type of distribution of fat and muscle mass (upper, lower, uniform with a shift to the right or left side). The obtained data can be used by coaches, specialists in the field of physical culture and sports for the competent construction of the training process of athletes engaged in swimming and the necessary correction of posture in swimmers with the presence of right- or left-sided scoliosis.

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## FUNCTIONAL ASYMMETRY OF FINGER DERMATOGLYPHICSOF QUALIFIED SWIMMERS

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Keywords: finger dermatoglyphics, qualified swimmers, dermatoglyphic indicators, functional asymmetry, crest score, delta index.

The relevance of research. In the modern world, it is quite difficult to identify predispositions to various types of activities without modern scientific equipment. But there are genetic markers, by quantitative and qualitative indicators of which it is possible without much effort to determine the individual characteristics of those involved in any kind of sport, without taking into account gender, age and level of fitness [2]. Such hereditary landmarks include finger dermatoglyphs, the study of which has been quite relevant in the last few decades [4]. Many works are devoted to the