

Morphological Characteristics of Professional Ballet Dancers of the Bolshoi Theater Company

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ABSTRACT

The objective of this study was to describe the morphological profile of professional dancers compared with university physical education students. Thirty-five subjects were evaluated as follows: 13 professional ballet dancers of the Bolshoi Theater Company, six males and seven females, and 22 university physical education students, 11 males and 11 females. Body mass, height, skinfold (triceps, biceps, subscapular, chest, axilla, supraspinale, Iliac crest, abdominal, Front thigh, medial calf) girth (Arm flexed and tensed, forearm, waist, gluteal girth, Mid-thigh girth and calf) and breadth (wrist, ankle, Biepicondylar humerus and femur) were evaluated and somatotype, body fat percentage (BF%), body mass index (BMI), $\Sigma 7$ Skinfolds lean body mass, bone, residual and muscle mass were calculated. Dancers showed lower values for BMI, sum of seven skinfolds, BF%, body fat percentage, fat mass, residual mass ($p < 0.05$). For females, lean body mass was also lower in the group of dancers. Body muscle values were lower for university physical education students of both sexes ($p < 0.05$). When assessing differences between male and female dancers and male and female university physical education students, dancers appeared to be more homogeneous than students. As for somatotype, male dancers showed predominance of mesomorphy over the other components and female dancers showed predominance of ectomorphy. The intense training in classical ballet interfered in body composition components, changing them significantly.

Key words: anthropometry, athletes, body composition, somatotype, exercise

Introduction

In recent years, a large amount of knowledge about the effects of sports among young people has been produced¹. The study on the anthropometric profile of athletes is aimed at defining an »ideal« and specific morphologic condition to each sport. The anthropometric, neuromuscular and physiological characteristics of elite athletes of different modalities are different mostly due to the specific requirements of each sport. Many of these characteristics are shaped by heredity, physical training and nutritional aspects, which are factors that can greatly contribute to success, especially among high-performance athletes¹.

In addition to anthropometric measurements and body composition, the morphological characterization is relevant to the athlete's sports performance. Somatotype is an anthropometric method which semi-quantitatively describes body shape and is expressed by three numerical

values expressed in the same order, which correspond to the following components: endomorphy, mesomorphy and ectomorphy respectively. In the first component, there is a predominance of body fat and abdominal volume associated with muscle weakness. The second component is characterized by strong muscular development, bone strength and thoracic measures greater than abdominal measures. The third component shows body linearity, with length predominant over breadths and girths².

The practice of classical ballet develops a specific morphological profile, since its learning requires mastery of technical choreographic steps in order to enable the public presentation of the dance³. The Bolshoi Theatre, located in Russia, is one of the leading ballet companies and opera in the world. As the benchmark for artistic quality and cultural production of shows, the only branch

school of the Bolshoi Theatre outside Russia is located in Joinville, Santa Catarina, Brazil. The classical training comprises a total of eight years, a full-time educational process. The young company of the Bolshoi Theatre School in Brazil was created in order to meet the demand for growth and development of classical dance in the country and to employ dancers newly graduated in the Bolshoi School.

The performance of sports practiced today is characterized as highly selective, since only individuals that meet certain qualities are selected, and when combined with systematic training, can achieve success in a given sport⁴. Identifying the model of high-performance athletes has attracted the interest of researchers in various forms^{5,6}. However, few studies have aimed to determine the profile of a classical dancer, mainly of those acting professionally^{7,8} and none of the above investigations were performed with dancers from the young company of the Bolshoi Theatre.

Thus, the observation of the anthropometric characteristics and somatotype are important to assist in the selection of talents, since young people who have similar characteristics to professional dancers tend to continue classical ballet, showing a greater propensity for success. Moreover, it becomes important to identify the morphological profile of Brazilian professional classical dancers in order to provide professionals working in this field knowledge about anthropometric characteristics of body composition and somatotype relevant to a better efficiency in the practice of classical ballet.

In this context, the objective of this study was to describe the morphological characteristics of professional classical dancers of the Bolshoi Theatre in Brazil and to compare these characteristics with university Physical Education students.

Methods

Participants

The study sample consisted of 35 subjects of both sexes, which were divided into two groups. The first group was composed of all professional classical dancers that formed the young company of the Bolshoi Theatre School in Joinville, Brazil, in 2009, totaling 13 dancers aged between 18 and 21 years (18.9 ± 1.5), six males and seven females. The dancers have on average eight years of practice on classical ballet, according to the following curriculum: classical dance, theatrical practice, specific fitness, acrobatics, folk dance, rhythmic and musical education, repertoire, Brazilian folklore, dressed dance, contemporary dance, theater, piano, art history, music literature, duet and dance history. As professional dancers have a formal contract and have a labor regime/undergo training of 30 hours *per* week, including rehearsals and technical classes.

The second group was composed of 22 university physical education students, class of 2009, at the Federal University of Santa Catarina (UFSC), Florianópolis, Bra-

zil, from both sexes, aged between 17 and 27 years (19.8 ± 2.6), 11 males and 11 females.

Instruments and procedures

The survey was conducted in May 2009. The collection of data from professional dancers occurred on the Bolshoi premises in the city of Joinville, Santa Catarina. The data from university physical education students were collected at UFSC. After the explanation of the goals and procedures of the study, subjects who accepted to participate in the research signed the free and informed consent form. This study was approved by the Ethics Research Committee on Human Beings, UFSC, under number 439/11.

Anthropometric measurements body mass, height, skinfolds, breadths and girths were obtained according to protocol of the International Society for the Advancement of Kinanthropometry (ISAK)⁹ except for measurements of chest and axilla skinfolds, wrist and ankle breadth¹⁰. Anthropometric measurements were performed by five trained and certified evaluators, who conducted two non-consecutive measurements for each skinfold, breadth and girth. In case of difference of 5% between the first and second measurement, a third measure was performed, using the average of the two closest measures.

Body mass was measured using a Filizola[®] scale with digital resolution (São Paulo, Brazil), while height was measured with a Cescorf[®] stadiometer with resolution of 0.1 cm. Skinfold thickness were measured by a Cescorf[®] Skinfold caliper (Porto Alegre, Brazil) with resolution of 0.1 mm. The Brazilian model of skinfold caliper has similar functioning and design as the Harpenden English skinfold caliper. An adapted Mitutoyo[®] small slinding caliper was used, with 0.1 mm resolution for breadths and for girths, a Sanny anthropometric tape with resolution of 1.0 mm was used.

To calculate the somatotype components, the Heath and Carter¹¹ equations were used. As the results obtained by Johnson¹²; Lavoie and Lèbe-Néron¹³; Farnosi¹⁴.

Body density (BD) was obtained from the equation developed by Jackson, & Pollock¹⁵ for males: $BD = 1.11200000 - [0.00043499 (\text{Sum of seven skinfolds: subscapular, triceps, chest, axillar, iliac crest, abdominal, medial thigh}) + 0.00000055 (\text{Sum of seven skinfolds: subscapular, triceps, chest, axillar, iliac crest, abdominal, medial thigh})^2] - [0.0002882 (\text{age})]$ and for females the equation developed by Jackson, & Pollock¹⁶: $BD = 1.0970 - [0.00046971 (\text{Sum of seven skinfolds: subscapular, triceps, chest, axillar, iliac crest, abdominal, medial thigh}) + 0.00000056 (\text{Sum of seven skinfolds: subscapular, triceps, chest, axillar, iliac crest, abdominal, medial thigh})^2] - [0.00012828 (\text{age})]$. Body fat percentage (BF%) was calculated from BD using the equation of Brozek et al.¹⁷. Where: $BF\% = (4.57/BD) - 4.142$ 100.

After body fat percentage was obtained, fat mass and lean body mass components were calculated. Bone and

muscle mass were estimated by equations of Martin, & Drinkwater¹⁸ and Martin et al.¹⁹ respectively.

Statistical Analysis

Initially, descriptive analysis was used as mean and standard deviation to characterize the study subjects with regard to anthropometric variables, body composition and somatotype. To assess the normality of data, the Shapiro-Wilks' test was used. If data did not show normal distribution, the Mann-Whitney U test was applied to identify differences between groups of dancers and university physical education students in the variables studied. For data analysis, the Statistical Package for Social Sciences version 15.0 was used (SPSS)[®], considering a significance level of 5%.

For comparative analysis of somatotype between groups, the Somatotype Attitudinal Distance – SAD interpretative model was used, characterized as the spatial distance between two somatotypes and the somatotype attitudinal mean – SAM the average of the SAD's, of each somatopoint from the mean somatopoint (S) of a sample proposed by Carter and Heath¹¹.

Result

Table 1 shows the values related to anthropometric characteristics of professional classical dancers and university physical education students.

From these data, it could be observed that dancers showed lower values compared to those of university

TABLE 1
AGE AND ANTHROPOMETRIC CHARACTERISTICS OF PROFESSIONAL CLASSICAL DANCERS (BOLSHOI THEATRE SCHOOL IN BRAZIL) AND MALE AND FEMALE UNIVERSITY PHYSICAL EDUCATION STUDENTS

Variables	Male		Female	
	Dancers X (SD)	Students X (SD)	Dancers X (SD)	Students X (SD)
Age (years)	19.0 (1.9)	20.2 (3.1)	18.9 (1.3)	19.5 (2.0)
Body Mass (kg)	63.4 (8.5)* †	71.9 (7.0) ††	47.4 (3.3)*	52.7 (4.41)
Height (cm)	173.0 (0.1)	172.0 (0.1) ††	161.0 (0.1)	160.0 (0.1)
Skinfolds (mm)				
Triceps	7.2 (2.3)	10.3 (4.7) ††	11.5 (3.0)*	17.5 (3.2)
Biceps	3.7 (1.0)*	4.7 (2.1) ††	5.0 (1.3)*	7.7 (2.2)
Chest	5.4 (0.9)*	9.6 (5.3)	6.1 (2.6)*	11.7 (3.7)
Axilla	7.2 (1.9)*	10.6 (4.5)	6.5 (1.0)*	10.7 (3.6)
Subscapular	8.7 (1.6)*	12.5 (4.8)	9.4 (2.3)*	13.4 (2.8)
Supraspinale	6.4 (0.5)*	12.1 (6.8)	5.8 (1.1)*	13.0 (13.3)
Iliac crest	11.0 (1.5)*	16.4 (8.3)	12.9 (1.9)*	20.0 (4.7)
Abdominal	9.4 (1.8)*	20.5 (8.9)	8.9 (1.6)*	23.2 (4.1)
Front thigh	8.4 (2.3)* †	15.4 (5.4) ††	16.8 (4.1)*	25.7 (3.2)
Medial calf	5.4 (1.9)* †	9.6 (3.8) ††	9.2 (1.8)*	18.3 (2.7)
Breadths (cm)				
Wrist	5.8 (0.3)	5.7 (0.4) ††	5.1 (0.4)	5.0 (0.2)
Biepicondylar humerus	6.8 (0.4) †	6.6 (0.4) ††	5.7 (0.2) †	5.7 (0.2)
Biepicondylar femur	9.3 (0.6)	9.5 (0.5) ††	8.4 (0.4)	8.7 (0.3)
Ankle	6.8 (0.6)	7.0 (0.4) ††	6.0 (0.5)	6.2 (0.3)
Girths (cm)				
Arm flexed and tensed	29.4 (2.1)* †	33.4 (3.6) ††	22.9 (0.7)*	25.7 (0.9)
Arm relaxed	26.5 (1.8)* †	30.4 (3.0) ††	21.8 (1.3)*	24.6 (1.3)
Forearm	25.5 (1.2) †	27.1 (1.7)	21.5 (0.9)	22.4 (1.0)
Waist	70.7 (4.2)* †	79.4 (6.0) ††	61.8 (1.3)*	66.4 (2.7)
Gluteal	89.7 (5.7)	95.6 (4.1)	86.4 (2.7)	91.4 (3.7)
Mid-thigh	51.5 (2.8) †	55.0 (3.4) ††	46.3 (2.6)	48.5 (3.2)
Calf	36.6 (1.7)	36.7 (2.2) ††	33.3 (1.9)	33.6 (1.8)

X – mean; SD – standard deviation

* significant differences by variable between dancers and university physical education students by gender (p valor <0.05), according to the Mann-Whitney U test

† significant differences by variable between male and female dancers (p value <0.05) according to the Mann-Whitney U test

†† significant differences by variable between male university physical education students and female university physical education students (p value <0.05) according to the Mann-Whitney U test

TABLE 2
BODY COMPOSITION, AND SOMATOTYPE OF PROFESSIONAL CLASSICAL DANCERS (BOLSHOI THEATRE SCHOOL IN BRAZIL) AND MALE AND FEMALE UNIVERSITY PHYSICAL EDUCATION STUDENTS

Variables	Male		Female	
	Dancers X (SD)	Students X (SD)	Dancers X (SD)	Students X (SD)
BMI	20.9 (0.7)* †	24.3 (2.0) ††	18.3 (0.5)*	30.1 (4.0)
BF%	9.1 (1.2)* †	17.5 (8.2) ††	17.9 (2.6)*	31.3 (4.6)
Σ7 Skinfolds	57.4 (7.3)	96.0 (38.2)	72.3 (12.5)	122.3 (16.2)
Fat mass	5.8 (1.2) †	12.8 (7.0)	8.7 (1.5)	15.9 (2.7)
Lean body mass	57.6 (6.8) †	59.1 (7.2) ††	39.5 (2.9)	36.2 (3.8)
Residual mass	15.3 (2.0) †	17.3 (1.7) ††	11.6 (0.9)	12.7 (1.1)
Muscle mass	34.1 (3.8) †	33.1 (6.1) ††	21.6 (1.6)	17.7 (3.0)
Bone mass	8.6 (1.3) †	8.6 (1.0) ††	6.2 (0.6)	6.3 (0.6)
Endomorphy	2.3 (0.3)	3.4 (1.4)	2.8 (0.6)*	4.4 (0.6)
Mesomorphy	4.3 (0.6)	5.2 (1.2)	2.6 (0.4)	3.4 (0.6)
Ectomorphy	3.3 (0.6)	1.7 (0.7)	3.9 (0.3)	2.6 (0.9)

X – mean; SD – standard deviation; BMI – body mass index; Σ – Sum of seven skinfolds (subscapular, triceps, chest, axillar, iliac crest, abdominal, medial thigh); BF – body fat percentage

* significant differences by variable between dancers and university physical education students by gender (p value <0.05)

† significant differences by variable between male and female dancers (p value <0.05); †† significant differences by variable between male university physical education students and female university physical education students (p value <0.05)

physical education students, in both sexes for the following variables: body mass, subscapular, biceps, chest, axilla, subscapular, suprascapular, iliac crest, abdominal, front thigh, and medial calf skinfolds, arm flexed and tensed, relaxed arm, waist, triceps skinfold for females, were also lower for the group of dancers.

When male and female dancers were compared, differences were found for the following variables: body mass, front thigh, and medial calf skinfolds, Biepicondylar humerus breadths and arm flexed and tensed, forearm, waist and Mid-thigh girths. Among university physical education students, differences were found for the following variables body mass, height, biceps, triceps, front thigh, and medial calf skinfolds, wrist, Biepicondylar humerus and femur, ankle breadths, flexed and tensed, waist, Mid-thigh and calf girths (Table 1).

Table 2 shows that dancers had lower values compared to those of university physical education students of both sexes for the following variables: BMI, sum of seven skinfolds, BF%, fat body percentage, fat mass, residual mass and for the somatotype component endomorphy (p<0.05). Lean body mass, for females, were also lower for the group of dancers. Body muscle values were lower for university physical education students of both sexes (Table 2)

Figure 1 shows the average somatotype for the group of classical dancers and for university physical education students according to sex. It was observed that male dancers had an ectomorphic-mesomorph somatotype profile (2.3–4.3–3.3) and female dancers had a balanced ectomorph somatotype profile (2.8–2.6–3.9).

In relation to university physical education students, men were classified as endomorphic-mesomorph soma-

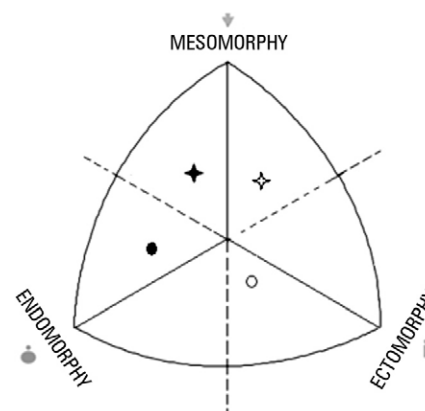


Fig. 1. Average somatotype of professional ballet dancers and university Physical Education students according to sex. (♣) Male dancers, (♠) Male university students, (○) Female dancers, (●) Female university students. SAD – Somatotype Attitudinal Distance, groups for females (SAD=2.2) and males (SAD=0.8). SAM – somatotype attitudinal mean, groups for female (SAM=0.3) and males (SAM=0.3).

typotype profile (3.4–5.2–1.7) and women were classified as mesomorphic-endomorph somatotype profile (4.4–3.4–2.6). The SAD value found was 0.8 for males and 2.2 for females and the SAM value was 0.8 for males and 0.3 for females.

Discussion

This study can be used in future research with this population and assist in the detection of talents to the practice of classical ballet. The main findings of this re-

search are that male professional classical dancers have ectomorphic-mesomorph somatotype profile and female dancers have balanced ectomorph somatotype profile.

Body mass, BMI and BF% values of female dancers found in this study are below normality reference for female young adults, which ranges from 18.5 to 25 kg/m² for BMI and from 14 to 19% for BF%^{20,21} and differ from other studies with classical dancers^{22,23}. Grego et al.²² analyzed female ballet dancers aged between 12 and 17 years in Bauru, SP, Brazil, and found mean BMI of 18.2 kg/m² (± 2.0), body mass of 44.2 kg (± 7.8) and BF% of 17.6 (± 4.8). Silva and Fayh²³ in a study with female dancers from a dance school in Porto Alegre, Brazil, aged between 18 and 30 years identified mean BMI of 20.64 kg/m² (± 1.2) and BF% of 19.2% (± 4.4). Similarly, Prati and Prati²⁴ obtained average values of 19.9 kg/m² (± 1.6) for BMI and 22.7% (± 4.3) for BF% for female classical dancers in the city of Maringá, Paraná, Brazil.

The lowest values found for female dancers of the present study in relation to studies mentioned above are due to the fact that the population studied is composed of professionals, while other investigations have analyzed amateur classical dancers. Hergenroeder et al.²⁵ reported that the search for body image suitable for classical ballet goes beyond the parameters of lean mass percentage for the general population, and as female dancers become professional, there is a need to maintaining appropriate body weight with low fat percentage. Furthermore, Bolshoi Theatre dancers are professional athletes, and therefore have a greater demand for body weight control in relation to dancers analyzed in studies previously mentioned.

It is also important to point out that the BF% values considered desirable for female dancers are those from 13 to 15%²⁴ while for the general female population, adequate values are those from 18 to 25 %²¹. Thus, female dancers participating in this study have BF% levels suitable for practitioners of classical ballet, which benefit the development of the ballet technique and decrease the load on joints over the years of practice.

In relation to males, the scarcity of studies addressing the morphologic and anthropometric profile of classical dancers makes comparisons between results difficult. Betancourt-Léon et al.²⁶ assessed dancers from the national dance company of Cuba and found values higher than those found in this study for body mass and lower for height. When compared with values obtained for non-athletes²⁷, it could be observed that just as occurred in female dancers, male dancers showed lower values in relation to normal values for the population of young males, from 18.5 to 25 kg/m² for BMI²⁰ and from 8 to 14% for BF%²¹.

In the present study, body mass, BMI and BF% differed between dancers and university physical education students of both sexes. Grego et al.²² compared girls aged 12 to 17 years divided them into three groups: classical dancers, non-classical dancers and students, and reported that classical dancers showed statistically significant differences for BMI (18.25 kg/m²) compared to students (20.25 kg/m²) and non classical dancers (20.74 kg/m²), and the same behavior was observed for body mass.

Betancourt-Léon et al.²⁶ in a study with professional modern, classical and folk dancers of both sexes in Cuba, found that classic dancers showed significantly lower absolute body mass values (48.9 kg) compared to folk dancers (51.4 kg), and modern dancers (56.1 kg).

The importance of controlling levels of body composition meets the need of classical dancers to be slim for aesthetic purposes, and also to be benefited from the lean mass components that assist in the performance of choreography movements, as well as to demonstrate physical strength, grace and lightness in the movements²⁴. Thus, it is expected that classical dancers have lower values of body composition components in relation to the general population and practitioners of other types of dance, in which thinness is not so recommended⁷.

When analyzing somatotype, it could be observed that the average of classical dancers of the present study differed between sexes. Male dancers showed ectomorphic-mesomorph somatotype profile (2.3–4.3–3.3) and female dancers showed balanced ectomorph somatotype profile (2.8–2.6–3.9). This result is consistent with the findings of Betancourt-Léon et al.²⁸ in a study whose objective was to define the body profile of dancers from the national dance company of Cuba, which identified an average somatotype considered balanced ectomorph (2.1–2.4–4.5). Carter and Heath¹¹ assessed female dancers from various dance companies and found the following somatotype values for classical dancers from the following dance companies: San Diego, USA (2.7–3.0–3.8); California Ballet, USA (2.9–3.4–3.7); Hungarian Ballet (3.0–3.2–4.0).

The difference between the somatotype results found in previous studies indicates that female dancers of this study and those from the study by Betancourt-Léon et al.²⁸ and Carter and Heath¹¹ showed a more linear body profile than dancers of the Municipal Theater of Santiago, since the studies carried out in Cuba and Brazil showed a predominance of ectomorphy, which expresses a linear domain in the morpho-functionality of female dancers with even development of the skeletal muscle and body fat. In relation to males, there is a predominance of the mesomorphy component, which represents a greater muscular development²⁸.

From these results, it could be speculated that the predominance of ectomorphy in female dancers is due to their need to show lightness during the choreography performance.

Moreover, sometimes, they are lifted and carried by male dancers in choreography steps, which requires greater muscle strength to perform this task. Thus, lighter dancers make the work of their dance partners easier.

In general, dancers proved to be lighter and thus showed lower endomorphy and higher ectomorphy values in relation to university physical education students.

Coelho-Silva and Jerônimo⁸ compared the somatotype profile of dancers from the dance company of Aveiro, Portugal and Lisbon dance school in Lisbon, Portugal with Physical Education students and identified differences in the average somatotype of female dancers (endomorph-mesomorph) and university physical education stu-

dents (mesomorph-endomorph). The non predominance of the ectomorphy component for dancers in the aforementioned study as opposed to the current study is justified by the methodological nature of the companies investigated. While the dance methodology used by the Bolshoi Theater emphasizes techniques of classical dance, the company and the Portuguese school alternate classical technique, along with contemporary and modern dance, not emphasizing slim body shape so much.

The main limitations of this study are: 1) The small number of individuals analyzed in the group of professional classical dancers, though the present study has measured the entire population, 2) The lack of assessment of the anthropometric profile and somatotype of amateur classical dancers or participants in other forms of dance performed in a professional or amateur form. A relevant aspect is that this study is pioneer in terms of investigating the somatotype of professional dancers of the Bolshoi/ Brazil dance company, which may serve as reference for future studies with national and international dancers.

Conclusion

According to results presented, it could be concluded that the group of classical dancers demonstrated heterogeneous anthropometric characteristics for both sexes;

however, when comparing male and female dancers, greater homogeneity was found between sexes in relation to university physical education students. with lower values for body composition variables (BMI, sum of seven skinfolds, BF%, body fat percentage, fat mass, residual mass). The body muscle values were lower for the university physical education students in both sexes.

As for the somatotype characteristics, classic dancers showed a different pattern when compared to university physical education students, being classified as ectomorphic-mesomorph for males and Balanced ectomorph for females, while male university physical education students were classified as endomorphic-mesomorph and females as Mesomorph-endomorph.

Overall, the results of this study contribute to the characterization of the morphological profile of professional classical dancers and provide subsidies for a better adaptation of the physical training aimed at these athletes, so that performance can be optimized through a more favorable morphological profile.

Acknowledgements

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MORFOLOŠKE KARAKTERISTIKE PROFESIONALNIH PLESAČA BALETA U BOLJŠOJ TEATRU

SAŽETAK

Cilj ove studije bio je opisati morfološki profil profesionalnog plesača u usporedbi sa studentima kineziologije. Tri-deset i pet ispitanika je bilo ispitano, od toga 13 profesionalnih plesača baleta u Boljšoj teatru (šest muškaraca i sedam žena) i dvadeset i dva studenta kineziologije (jedanaest muškaraca i jedanaest žena). Mjereni su im tjelesna masa, visina, kožni nabori, opsezi i širine raznih dijelova tijela, kao i postotak masnoće u tijelu, indeks tjelesne mase te koštana i mišićna masa te masa masnog tkiva. Rezultati plesača su pokazali niže vrijednosti indeksa tjelesne mase, zbroja sedam kožnih nabora i udjela masnoće u tijelu. Vrijednosti tjelesne mišićne mase su također bile niže za studente kineziologije, u oba spola. Kod usporedbi spolnih razlika kod baletana i studenata kineziologije, utvrđeno je da su baletani općenito homogenija skupina od studenata. Što se tiče somatotipa, muški plesači su pokazali dominantnost mezomorfije nad drugim komponentama, a ženski plesači ektomorfije. Možemo zaključiti iz provedenih mjerenja da intenzivan trening u klasičnom baletu ima utjecaja na tjelesni sastav i da ga može znatno promijeniti.