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MORPHOFUNCTIONAL FEATURES OF 30-40 YEARS OLD MEN WITH OBESITY AT THE INITIAL STAGE OF HEALTH AND FITNESS CLASSES IN THE FITNESS CENTER

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Annotation. The article reflects the morphofunctional characteristics of 30-40 years old men with obesity at the initial stage of health and fitness classes in a fitness center. An increase in body mass index was revealed, corresponding to class II obesity, as well as a satisfactory state of the cardiovascular system (according to the Ruffier index) and the respiratory system (according to the respiration tests on inhale and exhale), the values of which indicate a high risk of transition to the unsatisfactory function. The results obtained indicate the high importance of studying the morphofunctional characteristics of those involved in health and fitness classes at the initial stage for the subsequent selection and control of physical activity in the studied population.

Keywords: morphofunctional characteristics, men, obesity, cardiovascular system, respiratory system, health and fitness activities, fitness center.

Introduction. Socioeconomic and other factors alongside with scientific and technological advances have suddenly limited everyday activity of the population [1], having an unfavorable effect on health [1-2]. Health of mature men is exposed to risks of the deteriorated function of cardiovascular, nervous, respiratory and other systems [3] of isolated or accompanying nature, often combined with excess body mass. Obesity is considered as a multifactor disease, the main point of which is a long-term imbalance between energy intake and expenditure [4]. Most of the male population solve this issue by working out in a fitness center, frequently – by not controlling physical loads, not estimating the initial body function, which can cause an unfavorable effect on the state of health of those engaged.

The study's purpose – to examine morphofunctional features of 30-40 years old men with obesity at the initial stage of health and fitness classes in a fitness club.

Methods and organization. The study took place in the BIOSFERA CLUB fitness&spa center (Moscow). The research included men (n=18) aged 30-40 years with

diagnosed class I obesity without any concomitant cardiorespiratory pathology.

Following indices were included in the anthropometric measurements: body mass (kg) и fat component percentage (%) were identified with floor scales (Noerden SENSORI, China); girth dimensions (cm) of waist and hips were identified with a tape measure; we also calculated the body mass index (BMI) = body mass (kg) / height² (m) = kg/m². Functional state of the cardiovascular system was examined with the Ruffier test with an accompanying calculation of the corresponding index (points); the respiratory system's function was estimated with the respiratory tests on inhale and exhale. The statistical result processing was made with the Statistica 13 analysis software package: we calculated mean arithmetic values and standard deviation of the received indices and compared to standard values.

Results and discussion. The anthropometric indices of the studied group confirm the previously proven diagnosis – class I obesity (table).

Average values of body mass (144,36±10,25 kg) reflect its excess with the

existing pronounced signs of male type obesity the with the prevalence of waist girth (140.25±9.18 cm) over the hip girth (110.17±8.44 cm), the fat component percentage is

27.91±0.94%, which together creates a high risk of diastasis of the rectus abdominis muscles [5].

Table

Description of anthropometric indices of 30-40 years old men with class I obesity, $\bar{X} \pm \sigma$

Indices	Test results
Waist girth, cm	140.25±9.18
Hip girth, cm	110.17±8.44
Body mass index, kg/m ²	46.81±1.17
Fat component, %	27.91±0.94

Moreover, the body mass index (BMI=46.81±1.17 kg/m²) corresponds with class II obesity, which is different from the initial diagnosis – class I obesity. There can be several reasons for this: a significant time period between the diagnosis and the beginning of health and fitness classes in the center, psychological stress, improper diet, non-compliance with recommendations on the daily routine, etc.

To assess the cardiovascular system's function in conditions of dosed loads we conducted the Ruffier test, results of which (14,59±0,47 points) show low working capacity and satisfactory cardiac efficiency. Results of the respiratory tests on inhale (30.07±0.37 s) and exhale (25,41±0,59 s) reflect a satisfactory state of the respiratory system, closely bordering with the unsatisfactory function.

Conclusion. Research of the morphofunctional features of 30-40 years old men with obesity has shown a difference between the proven diagnosis and the morphofunctional state of the studied group at the initial stage of health and fitness classes in the center. We have identified the increased body mass index exceeding the range of values corresponding with class I obesity; indices of the cardiorespiratory system function correspond with values reflecting a satisfactory state with a high risk of transition to the unsatisfactory function. The obtained data reflect a high importance of studying morphofunctional features of those involved at the initial stage of health and fitness classes for a consecutive selection and control of physical activity for the examined group.

Conflict of interest. The authors declare no conflict of interest.

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