

туемых до проведения исследования. У одного испытуемого было отмечено снижение степени насыщения крови кислородом после периода 15 дней относительно исходного значения (рисунок 2).

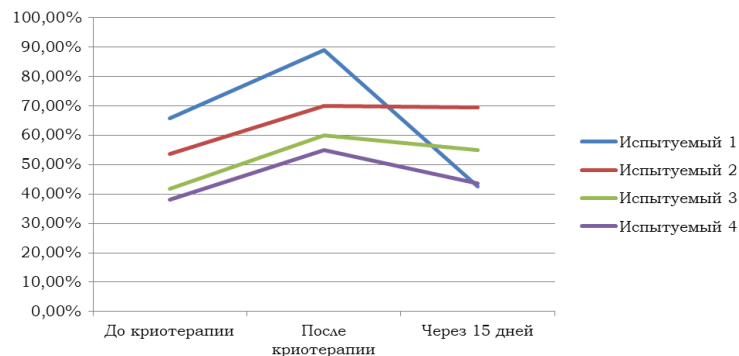


Рисунок 2 — Изменение степени насыщения крови кислородом во второй группе

На рисунке 2 заметно улучшение сатурации у всех 4 испытуемых с повышенной массой тела. Необходимо отметить, что данный эффект можно применить для реабилитации людей после перенесенной инфекции COVID-19, так как большинство людей имеют повышенную массу тела и для них криотерапия может иметь положительный результат.

Выводы

Для улучшения защитных сил организма достаточно курса криотерапии в виде ежедневных процедур в течение 10 дней. В нашем исследовании было установлено, что у людей с нормальной массой тела после проведения сеансов криотерапии степень насыщения крови кислородом осталась на исходном уровне или незначительно снизилась, однако у людей с избыточной массой тела она повысилась по сравнению с исходными данными и показатели сатурации улучшились. Такие изменения дают возможность судить о стабилизации и нормализации обменных процессов, стимуляции и мобилизации защитных возможностей организма, исследуемых с избыточной массой тела. Данный вид физиотерапии можно применить для реабилитации людей, перенесших COVID-19 инфекцию.

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COMPARATIVE CHARACTERISTICS OF THE MUSCULAR FORCE OF HANDS IN BELARUSIAN AND FOREIGN STUDENTS OF A MEDICAL UNIVERSITY

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Introduction

Students from many countries of the world study at higher educational institutions of the Republic of Belarus, and their number is increasing every year. At the

same time, a relatively high proportion falls on foreign student-citizens from Turkmenistan, India, and Sri Lanka.

A number of researchers noted a close relationship between the level of physical fitness, the development of the cardiorespiratory system, and such indicators as adaptive abilities, academic performance and morbidity. It was found that the higher the level of physical fitness and the development of cardiorespiratory system reserves are, the better academic performance and the lower morbidity rates are among students. Therefore, it is relevant to study indicators of physical development, such as muscle strength of hands, in foreign students for increasing of their adaptive capabilities.

Goal

Assess the strength of the muscles of the upper extremities and compare its values between foreign and Belarusian students of a medical university.

Material and Methods of research

Examination of students was performed in the educational institution «Gomel State Medical University». Totally 60 second-year students were examined, of which 30 were Belarusian students (15 boys and 15 girls) and 30 were from Turkmenistan (15 boys and 15 girls). The average age of the subjects was 19.8 ± 1.9 years. Using the computer complex for psychophysiological testing «NS-Psychotest» (BY), the maximum muscle strength of the right and left hands was determined by the method of dynamometry.

According to the Kolmogorov-Smirnov criterion, the obtained data obeyed the «Law of normal distribution», they were presented in the form ($M \pm SD$), where M is the arithmetic mean, SD is the standard deviation, and during comparing 2 independent groups we used Student's criterion (t-test). Statistical processing of the obtained data was carried out using the «Statistica» 7.0 application software package. The results of analysis were considered statistically significant at $p < 0,05$.

The results of the research and their discussion

As a result of the study, it was found that the maximum muscle strength (MMS) of the right hand in foreign young men averaged 43.56 ± 10.06 daN, and in Belarusian young men — 46.80 ± 8.71 daN. This indicator in both foreign and Belarusian students corresponded to the level of «above norm». But the maximum muscle strength of the right hand in foreign girls averaged 24.40 ± 5.19 daN (level «below the norm»), and for Belarusian girls — 26.73 ± 5.62 daN (normal level). When comparing MMS of the right hand in the students of the examined groups the significant increase of this indicator was revealed in young men compared to girls (both foreign and Belarusian) ($p < 0.01$). There were no statistically significant differences between foreign and Belarusian students.

When studying MMS of the left hand, similar differences were observed among students of the studied groups. So, the MMS of the left hand in foreign young men was 42.10 ± 8.86 daN, and in Belarusian young men — 44.60 ± 6.63 daN. These indicators were also higher than normal. The maximum muscle strength of the left hand in foreign and Belarusian girls fluctuated within normal limits and, on average, it was 24.60 ± 4.29 daN and 24.20 ± 9.66 daN. Comparing the results of MMS of the left hand, the examined students revealed the same tendency as for the right hand. But the left hand of boys was significantly stronger than the left hand of girls ($p < 0,0001$).

Analyzing the obtained data depending on the level of MMS, it was found that 80.0 % of foreign boys had a high level of this indicator, 20.0 % of students in this group had a normal MMS, and a low level of MMS in foreign students was not observed. The distribution of MMS of the left hand depending on the level was different from the distribution of the right hand. In particular, 60.0 % of foreign boys were characterized by a low level of this indicator of the left hand, a normal level of MMS was observed in 13.3 %, and a high level was detected only in 26.7 %, which is significantly less compared to the right hand ($p < 0.005$).

The maximum muscle strength of the right hand in Belarusian boys was at a high level in all subjects (100 %). However, MMS of the left hand in 53.3 % of students in this group was low, the normal level of this indicator was observed in 26.7 % of Belarusian boys, and a high level of MMS of the left hand was observed only in 20.0 %.

The distribution of MMS of the right and left hands depending on the level in the examined girls was different from the boys. So, the majority of foreign and Belarusian girls had a low level of MMS of the right hand at 53.3 %, a normal level of this indicator was detected in 46.7 % of foreign girls and in 26.7 % of Belarusian girls. Foreign girls did not have a high level of MMS of the right hand, and only 20.0 % of Belarusian girls were characterized by a high level of this indicator. The maximum muscle strength of the left hand was at a low level for all examined foreign and Belarusian girls (100 %).

Conclusions

Thus, as a result of studies, it was found that the indicator of maximum muscle strength of both the right and left hands in foreign and Belarusian boys of a medical university was significantly higher compared to girls ($p < 0.01$). Most foreign (80.0 %) and Belarusian (100 %) young men had a high level of maximum muscle strength in the right hand, while most foreign and Belarusian girls (53.3%) had a low right hand indicator. A low level of maximum muscle strength of the left arm was detected in the majority of examined students. This level was revealed in 100 % of foreign and Belarusian student girls, 60.0 % of foreign and 53.3 % of Belarusian boys.

The data obtained can be used in developing a set of measures aimed at improving the level of students' physical fitness and increasing their adaptive capabilities.

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STUDY OF LIPID SPECTRUM IN TEENAGERS WITH ARTERIAL HYPERTENTION

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Introduction

Hyper- and dyslipoproteidemia (DLP) have been found to be the main risk factors for cardiovascular diseases (CVD). It should be considered proven that leptin takes direct or indirect (via insulin) action in the regulation of lipid metabolism [1]. The level of leptin in the blood serum is directly related to the content of triglycerides (TG) in the blood and is inversely related to the level of high-density lipoprotein cholesterol