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DEVELOP AND MAINTAIN STRENGTH INDICES THROUGH FUNCTIONAL TRAINING

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Abstract

Designed in antiquity, functional training, is a topical concept, and is now being found more and more frequently in the fitness club schedule. Physical conditioning activity includes a varied and complex range of movements that have as main purpose the creation of performance in the daily activities and viewed from the perspective of performance sports this type of training aims to reducing the risk of injuries. Starting from the idea that indifferent of age any person can increase the level of this component (strength), from the sphere of conditional capacities, we have created an attractive training program according to the anatomical-functional characteristics and the motoric experience of the subjects.

The study aims to implement and verify the effectiveness of well-organized functional training programs, on strength indicators, at the lower train level, after 4 months of training.

The group of subjects participating in the research consisted of 18 female subjects, students of the University of Bucharest, aged between 19 and 27 years.

Statistically analyzed, the results achieved by the subjects at the initial and final evaluations prove the efficiency of the proposed program.

Keywords: functional training, physical conditioning, fitness, strength

Introduction

Physical training is constantly evolving, appearing a growing variety of methods and means based on how the human body responds to different stimulus.

Although in the last 20 years the functional training has seen an important promotion, it is not a new concept, originating in antiquity. The main objective of this type of motor activity was to improve the physical condition of the soldiers. Fast movement, fight, etc., required rigorous physical training, for which there was a need for increased strength and resistance in particular.

One of the reasons why it is increasingly appreciated is the low cost of the equipment and the attractiveness of the exercises.

For creating exercise an inspirational source is both the performance sport and the natural movement the individual performs in everyday activities. These movements can be classified into four main categories: locomotion, rotation, changing the level of gravity center, pushing and pulling.

Functional training can be defined from the point of view of performance sports where it aims to reduce the risk of injuries, or leisure activity where the main objective is to optimize daily performance.

Functional exercises improve the functioning of the locomotor system, increasing the body's ability to move more easily, efficiently and with amplitude.

Training involves exercises performed both with the weight of your body and with different weights and accessories. Below is a brief description of the main materials used in the training.

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Table 1. Materials used in the training

Equipment	**Description**
Weights (dumbbells, weightlifting)	Especially used to increase muscle strength; Dumbbells have the advantage of being able to correct bilateral differences;
Medicine ball	It is successfully used in developing resistance, strength and coordination capabilities; Multiplan exercises can be created with piece of equipment- an example: lunge with torso rotation;
Balanceplatform (bosu, balancedisks)	This accessory brings balance to which other motor skills are added;
Elastic bands	Also used in recovery; Compared to the pulley exercises, the elastic strips most often have the vector horizontal;
Foamroller	It's a foam cylinder; Used for me of a social stress relief by self-help;
Fitball	They were originally used in Switzerland for medical recovery since 1960.

A research from the Journal of Strength and Conditioning Research demonstrates that a group of functionally trained subjects achieved an increase in the level of strength development by 48% compared to a group of subjects who train with a classic program.

Essential motric quality, strength is required in all areas of activity, but especially in the motor activity. An important factor in the development is muscle fibers involved in contraction.

The purpose of the paper

The present research aims to verify if a functional training program will determine an improvement in the strength indices for lower body.

Materials and methods

The study was conducted for a period of 4 months, October 2018-January 2019, on a group of 18 female, aged between 19 and 27 years students of the University of Bucharest. Subjects performed an average of 3 hours of weekly workout.

The design of the program was created according to the level of physical condition and the health state of the participants.

The fundamental part of the lesson included a circuit consisting of 8 exercises, each exercise having a 50-second active work and 10 seconds pause, the whole circuit repeating 3 times with a break of 4 minutes.

Examples of exercises used in training:

1. Sitting, the right foot on the step, the left foot on the ground; hands on hips;
T1: lunge;
T2: jump and change the leg;

2. Standing, the medicinal ball held by the hands on the chest;
T1: flexion of legs (plie')
T2: return;

3. Sitting, hands on hips;
T1: Kick forward with right foot; T2: Return; T3: Kick forward with left foot;
T4: Return;

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The following tests were used in the evaluation of the applied program: squats test, Sargent Jump and wall sit leg test.

1. Squats test

The test involves multiple squats, until exhaustion. Interpretation is done according to the evaluation scale, and for medium level the subject has to perform 30 repetitions.

2. Wall sit leg

The test require that the subject maintains the squat position standing with his back to the wall. According to the scale for medium value, the subject has to maintain the position between 36 and 42 seconds.

3. Sargent Jump

Standing, raised the arm and marks the maximum height the subject reaches, then a subject jump and is count the maximum level is reached again. The difference between the two values is interpreted according to the scale, for a medium value the result must be 32 cm.

Results and interpretation

At the Squat test, the average recorded at the initial assessment was 27,6 and the final 35,7 the results being relevant to the t-student test for this group of subjects because the value of p is 0, ($p < 0,05$) which confirms the effectiveness of the program.

For Wall sit leg, at statistical interpretation we obtain a p value of 0,001 $p < 0,05$ initially proposed, which demonstrates a significant difference between the two tests.

For the Sergeant Jump test, subjects obtain a difference between the two (final and initial) average 3,24 cm. Statistically analyzed data also show relevant differences ($p = 0,03 \leq 0,05$).

Conclusions

In order to have an optimal influence, the preparation of the training program must be done in a progressive way (starting from simple to complex), planned and logical (order of exercises). Training can be easily adapted to any subject regardless of his motric experience. An efficient exercise is the result of the balance between dosing and execution.

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