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## **Methodology of coordinating training improvement in athletes, who train on a trampoline**

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**Abstract:** Pedagogical experiment analysis of specially created exercises use in order to develop coordinating abilities of the qualified athletes-trampoliners on the basis of the tested methodology can considerably increase the quality of difficult for coordination exercises fulfillment (tempo jumps out; seat-drop; belly back drop; knee drop; knee lean drop; back drop; forward drop) during the yearly cycle of training. **Materials.** High results achievement in any kind of sport depends on many components. The revelation and rating of which helps to specify the ways of the training process optimization. The content, connection and importance of competitive activity components revelation gives an opportunity to define the main factors. They condition sports result, the level of athletes' readiness and the level of coordinating abilities development. It is an important part of training athletes- trampoliners. **The aim of the research.** The aim of research is to increase the level of coordinating abilities development in qualified trampoliners. **Research methods.** Scientific-methodical sources analysis, pedagogical testing, experiment, methods of mathematical statistics, the received results analysis and summarizing. **Results.** The held test helped to define more significant changes in the respondents from the experimental group, the educational-training process of which included the created complex of exercises, directed toward coordinating abilities development. The athletes of the experimental group validly ( $P < 0,05$ ) improved their results. **Conclusion.** The received research results help to correct the process of training among the athletes, who trampoline, paying special attention to coordinating abilities formation and improvement.

**Keywords:** to trampoline, coordinating abilities, sports improvement, complex of exercises.

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### **Introduction**

In terms of training time deficiency rational ways of own movements control mastering by young athletes in order to gain necessary range of motor skills, abilities and connected with them knowledge, demands new approaches to educational process intensification [10,11,12,13,14]. Nowadays the methodology of the techniques of most elements on trampoline teaching and development demands gradual educational objectives mastering. They are solved by means of great amount of imitating, preparatory and special exercises fulfillment, realized many times during a long-term period [1]. Coordinating abilities development is more effective during the age period since 7 till 10 years-old [6]. Most

specialists pay attention to the quality of difficult for coordination motor actions mastering on the basis of fundamental readiness [3,4,5]. An important reason for educational-training process intensification at a sports school for children and teen-agers scientists [2,9] consider the corresponding level of functional and psychophysical readiness. Quantitative indices of coordinating exercises mastering increase helps to correct effectively technical parameters of new motor tasks, conditioned by high coordinating difficulty [7,8].

We set the following objectives, taking into account the aims of research:

1. To study the exercises used in artistic gymnastics and trampoline tumbling for

coordination development.

2. To create an experimental complex of special exercises for coordination development in the athletes, who train on trampoline.

3. To introduce the experimental complex of special exercises into the practice of sports training in order to develop coordination of trampoliners and define its effectiveness.

### Materials and methods

The main pedagogical experiment was held on the basis of Astrakhan Regional center of sports training since 2020 till 2021 in terms of educational-training process. The athletes of trampoline tumbling department took part in the experiment. The age range of the respondents- 9-10 years-old.

The level of qualification – the 1st senior category.

A weekly load at the stage of the first year of sports improvement was 20 hours. The duration of the pedagogical experiment was 30 weeks. They were divided into 5 stages. The duration of each stage was 6 weeks. Each following stage is more complicated variant of the previous stage.

In the groups of the first year study sports improvement the ratio of general and special physical training means is the following: 42,1±3,7% and 55,3±4,1%. The program of trampoline tumbling includes the following control normatives for the group of sports improvement of the first year of studying:

Table 1

Control exercises for the athletes, who train on a trampoline; seat-drop; belly back drop; knee drop; knee lean drop; back drop; forward drop

Control exercises	Normative	Methodical recommendations
Shuttle run 3x10 m	No more than 9,5 s	The time of the exercise fulfillment was registered (s.).
Jump to kneestand	The exercise should be fulfilled 2-4 times in terms of two, three attempts	Not high tempo jumps out (vertical bearing)- jump to kneestand with toes pulled back and hands down– jumps out fulfillment, jumps with further stop. Pay attention to the absence of an angle in hip joints, keep glutes in tension in terms of laps slightly apart (foot breadth) during kneestand fulfillment
Tempo jumps out	fulfill 5-7 repetitions in terms of 4 attempts	During the jumps out fulfillment body position should be vertical (semiclosed working bearing) – slight bend of the head with the chin to the chest with a slight flexion in shoulder and hip joints. It helps an athlete to control straight body position. Hands wing movement is realized upwards. Safety technique- in case of not correct landing (the absence of a vertical position) it is necessary to relax legs and amortize the net contact.
High jump (h – 30 cm) within 30 s (quantity)	No less than 15 times	The amount of repetitions is taken into account
Forward somersault	The exercise should be fulfilled 2-4 times in terms of two, three attempts	To fulfill tempo jumps out – leaning body forward and bending legs, fulfill grouping with further quick dis-grouping at the rising part of the jump. During the descending part of the jump an athlete shoulders should rise his shoulders up, taking vertical body position pressing hands on the body and fulfill landing into the stop. Pay attention to tight and quick grouping.
Back drop	The exercise should be fulfilled 3-4 times in terms of two, three attempts	Not high tempo jumps out bending legs and grouping, fulfill backward jump in grouping (leg forward-up), fulfill net contact into a stop.

The lessons at the experimental group were organized according to a typical program for sports schools including the created complex of special exercises.

The experimental complex included the following exercises: time controlled rolls and somersault from different initial positions; time controlled turns with the transfer to different difficult for coordination actions; jumps on a trampoline for a maximal height after the series of difficult coordination jumps; combinations of the series of jumps on a trampoline (jump out- jump to kneestand, upward jump on the left with 180° turn into squat); jumps with the directions change over the gymnastic bench.

Research results of mathematical handling was realized using statistical package «SPSS

Statistics 17.01» for Windows and Microsoft Office Excel 2007

**Results and discussion**

At the beginning of the pedagogical experiment two groups were formed, each group included 20 people. They were called control group (n<sub>1</sub>=20) and experimental group (n<sub>2</sub>=20) and didn't have considerable differences in the system of the studied indices.

The results of the control tests at the beginning of the research were used in order to differentiate the level of physical fitness in the control and the experimental group. Physical fitness of the athletes from the groups n<sub>1</sub> and n<sub>2</sub> didn't have significant differences.

Table 2

Physical fitness indices of trampoliners at the end of the experiment

Exercise	CG results (n =20)	EG results (n =20)	CG results (n =20)	EG results (n =20)	P
Back somersault piked (point)	8,74±2,1	9,1±1,5	10,76±0,77	11,6±1,05	<0,05
Back somersault in a straight position (blange) (point)	8,52±0,72	8,64±0,73	10,48±0,73	11,94±0,86	<0,05
High jump over the bar (cm)	72,46±0,79	73,8±0,62	72,62±0,86	79,32±2,01	<0,05
Jump with max turn, °	572±±15,02	586±10,72	582±±15,02	640±23,6	<0,05
Spring down into 50x50 cm square, which is situated at the distance of 70 cm, with further repulsion toward the line at the distance of 80 cm (point)	5,3 ± 0,3	5,9 ± 0,4	5,7±0,3	6,1±0,7	<0,05
«Snake running» (1x10 m, s)	8,2 ± 2,87	7,2 ± 2,65	8,3±2,90	7,3±2,67	<0,05

The created and introduced into educational process of practical trampoline tumbling lessons methodology of coordinating training using jumping exercises on a trampoline validly increased the level of coordinating abilities. It forms the base for technical training of athletes and can be used in the system of sports training. We registered more significant changes among the respondents of the experimental group. The training process of the experimental group included the created complex of exercises, directed toward coordinating abilities development. The athletes of the experimental group validly (P <0,05) improved their results.

**Conclusion**

The held pedagogical experiment proved the hypotheses, which says that the created complex of exercises for the coordinating abilities development among the athletes, who train on a trampoline, would help to increase the level of coordinating abilities and would give an opportunity to improve the level of the performing mastery. The results of the held research work would help to summarize the information concerning the means of coordination and coordinating abilities development in trampoliners in terms of sports school. Imitating preparatory exercises of coordinating character use helps to stabilize the effectiveness of the performance

among 9-10 year-old trampoliners.

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