

**EFFORT CHARACTERISTICS OF MALE  
ARTISTIC GYMNASTICS - CATEGORY JUNIOR  
IV LEVEL 1 AND LEVEL 2**

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**Abstract**

*All the positive physiological and structural transformations in the athletes' body by practicing a sport, is due to body adaptations to physical and mental efforts to which they are subjected during exercise and are directly proportional to its intensity and volume, as well as with the frequency of training.*

*Achieving high performance in any area of human activity, by default in gymnastics, are conditioned to undertake great efforts, characterized by a high level of training effort parameters such as volume, intensity, density and complexity.*

**Keywords:** *artistic gymnastics, exercise, effort, physical training, technical training, model, modeling.*

### **Introduction**

The effort represents the physical activity planned, structured, repetitive, geared to a specific purpose; whole body movements, systematically executed.

Exercise is a functional overload that causes a change in the body's homeostasis, in order to cover the needs of increased metabolism in muscle activity.

According to the explanatory dictionary of the Romanian language (1998) relating to the request, noted that it "shall mean a physical process which produce large deformations and stresses in a solid body".

Extrapolating from the sports activity and physical exercise, requiring a physical effort caused (tension) to produce Adaptive changes of morpho-functional and emotional in close dependence on the nature of the request.

What sports require effort and trying to destabilize body homeostasis, causing the body to the organs, functions and systems, Adaptive reactions. The level of adaptation of the ability is reflected in the athlete's performance, in the sense that a good and fast adaptation of organism to the special requirements of sports practiced in the branch, resulting in higher performance.

Sports training, adapting to the changes caused by the amount representing the exercise repeated systematically "(T.O. Bompa, 2001). All the positive physiological and structural transformations in the athletes' body by practicing a sport, is due to body adaptations to physical and mental efforts to which they are subjected during exercise and are directly proportional to its intensity and volume, as well as with the frequency of training.

Achieving high performance in any area of human activity, by default in gymnastics, are conditioned to undertake great efforts, characterized by a high level of training effort parameters such as volume, intensity, density and complexity.

The volume represents the effort of preparation and it's premise to achieve a higher physical level, both technically and tactically and psychologically a good balance.

The volume of training in gymnastics is the amount of work

done, working time, number of devices to which the preparation is carried out, the number of items or the partial or complete exercises. The sheer volume of training contributes to learning and perfecting the technique of exercises and gym.

If years ago, is considered sufficient to perform 4-6 weekly workouts, today the question arises of at least 2 daily workouts, and in some periods of training (learning tasks, training camps etc.) just 3 workouts per day.

Intensity represents the qualitative component of the training and effort is the amount of work done per unit time. The more an athlete makes more effort per unit time the higher intensity. The intensity is a function of the strength of nerve impulses of availing the athlete in the grounding. The strength of a stimulus (element, exercise) depends on the load, speed and variation interval or pause between repetitions.

The effort represents the density ratio between the time of the stimulus and the rest on training structure or the frequency with which an athlete respond to a number of stimuli per unit time. Density refers to the relationship expressed in time of effort and recovery phases of the body. A proper density provides effective training and prevents entry into a State of fatigue or exhaustion, critical to achieving an optimum ratio between training and recovery.

The complexity of the effort is given by the number of motor actions carried out simultaneously during an activity and the originality of typological elements configuration (the driving laws, energy substrate diversity number of body systems involved and the number of approvals and smoothness).

The complexity of skills by requiring coordination can increase the intensity of training. A skill or a complex element of technique can create learning problems and therefore request additional muscle, especially when the neuro-muscular coordination is lower.

Specific stimuli (exercise) is another parameter to the effort which is determined by the characteristics of the stimulus;

- body systems caused reactions;

- psychological qualities of the athlete;
- the athlete's age;
- level of preparation;
- location of macrociclului structures in stimuli;
- ambient conditions, etc.

The duration of the stimulus, while the stimulus. Act is singular or in series in establishments of the workout.

The amplitude (or variability) of stimulus, is the numeric values of the relative duration and number of stimuli during a workout structures (Example: training in the morning:  $2 \times 5 \times 50 = 2 \times 5 \times$  series reel 50 repetition; afternoon training;  $2 \times 5 \times 40 = 2 \times 5$  series reel  $\times 40$  repetitions, which means that morning were executed in this example, 500 iterations and after meals or run 400 iterations the difference between them representing the magnitude of the stimulus, in our case 100).

The frequency of the stimulus, is the number of units of the training lessons per day, per micro cycles, and macrocicluri series.

All the above effort parameters listed have their role and importance in the process of preparation, we believe, however, that volume and intensity are through their correct combination, the solution to the optimization of stimulus for achieving goals.

A great deal of effort, combined with ever-increasing intensity, but wisely established, leading to a high level of adaptation, and that results in obtaining high performances.

The effort features the floor exercises consists of acrobatic elements prevalent manner, combined with other elements such as gymnastic and parts of strength and balance, mobility movements, sitting on your hands and choreographic combinations, constituting a harmonious whole and upbeat, which runs over the whole surface of the ground "(12 m x 12 m), code (the men's artistic gymnastics SCORE Edition, 2013). In terms of the effort which must be made to carry out this exercise, the focus is moving towards dynamic elements of the Moose and the balance (dynamic effort), or flipping, flipping back, before straightening on rolling back in her head and sitting on your hands. Our research led us to a finding that the competition at the end of the year (at

most gymnasts), heart rate does not exceed about 150/160 key-strokes per minute, which demonstrates that the effort falls within the aerobic-anaerobic exertion.

The effort features goat dishes. The effort must be carried out over the course of about 15-18 seconds and F.C. (heart rate) of about 180-210 beats per minute being predominantly anaerobic effort alactacid and lactacid. A high intensity exercise, because the effort is continuously, without breaks. The amount of effort in training lessons at the gym so you need to be particularly large, with many repetitions of circles linked in series of 20-30 circles and approximately 12-15 series, the weekly cycle, bringing the total to about 1000-1200 items.

The effort features rings. The effort has the characteristic mixed aerobic-anaerobic exertion lactacid, the main means of influencing the exercise parameters (intensity-volume), and is even repeated a number of times as the balances at every climb on camera. We believe that a number of about 10-12 balances and approximately 8-12 ascents on the device, in a training lesson from this camera for about 30-45 minutes and 3 workouts per week is enough at this age group for learning quickly and correctly, the exercise provided for this category of the jumping effort features classification.

The effort of jumping with the gymnasts flip by sitting on their hands, is composed of the effort in the jumping phases with a focus on the race in , beating of the feet, hands, beating the flight and landing (great effort at disposal for safe stopping at landing).

So, to sum up, affirm that a very good race, ensure you a good beating of the feet, which ensures an optimal, which I flight, flight II prepares a very tall (with the possibility of different elements that increase the difficulty), which ensures a long, safe landing and halted, however a note assuring the greatest.

The characteristics of parallel bars efforts. The joint effort is the predominant feature, alactacid anaerobic and anaerobic lactacid, execution by the children of this age of the elements mentioned above, requesting from them, a particularly intense effort and sustained.

Taking into account the morph-functional of gymnasts aged 6-

8 years, and the fact that the rupture may occur in parallel of the palmar skin, we consider that approximately 60-70 balances in sitting on hands and about 30 îndreptări are sufficient to 3 weekly workouts, with about 45 minutes of work to the device.

The effort features the horizontal bars. The effort to execute the exercise, the predominant feature has mixed anaerobic exercise and anaerobic effort lactacid alactacid, held over the course of about 10-12 seconds, with an average intensity and volume.

During training, it is recommended that a separate approach to the elements of the exercise, and their practice, to be made by a large number of iterations (large volume), about 8-10 repetitions at every climb on camera, with a number of 6-8 weekly on the item, in a working time of about 45 minutes per workout and with 3 workouts per week.

### **The purpose and tasks of the research**

The research undertaken for the elaboration of this paper aims to identify lines of action in order to elaborate a strategy for selection for men's artistic gymnastics at the junior level.

The other purpose is related to the determination of the age of beginning the work effort of training specialized in men's artistic gymnastics and eventual relationship with the selection system adopted.

In this sense, our approach tasks can be found in:

- an overview of the current content used nationally in the male selection system;
- comparative analysis of this system with the recommendations of the Romanian Federation of gymnastics;
- identifying the elements of the strategy selection in children 6-8 years to optimize the selection system;
- highlighting the effort indicators male artistic gymnastics;
- determination of the amount of effort made by small-scale gymnasts, participants in the research.

### **Methods used**

Depending on the purpose of the research, have used the following methods:

- For documentation: historical method, the method the spe-

cialized bibliography study that was done to this theoretical work.

The studied materials also helped us to formulate ideas and reflections which I clarified the issues and uncertainties that arose during the experiment and the drafting of the thesis;

- For data collection: the monograph, observation, measurement and testing, the investigation through interview and questionnaire, call. Observation method was carried out throughout the research activity through both spontaneous and purposeful observations. Events and actions which have been recorded in the worksheets that were designed and used in the composition of this work;

- To verify the hypothesis: the method of the experiment which provided a basic objective which could argue, from the scientific point of view, the answers to the assumptions made in this research;

- For the processing of data collected: statistical and mathematical method by using descriptive primary statistics (calculation of the arithmetic mean, standard deviation, and coefficient of variance), allowed the analysis and comparison of the results obtained at the initial and final testing of the experimental and control groups during the experiment;

- Analysis of results: *intabelarea* and method for graphic data presentation allows the quick and obvious differences between the results obtained from the research.

### **Contributions regarding the contents of the selection for the junior team IV level 1 and 2**

On the basis of its own concept, presented in the strategy, I have proposed a set of control that I have applied for over the years junior team IV level 1 and 2 in Arad, which is actually part of the research for the preparation of the present paper.

1. Long jump on the place
2. Jumping up and down on the lid of the crate/30'
3. Removal of the trunk and legs of dorsal recumbent
4. Hung out with her arms folded at double-digit horizontal bar
5. Traveling in circles in support on the ground face down

6. Trunk bending-extensions of sitting tilted to upper arms
7. Climbing rope
8. Static equilibrium-sitting tips with my eyes closed.

### **Interpretation of data**

The results obtained from the proposed control samples were ordered and processed using methods of primary statistics.

The graphs made based on the values of the results obtained from the control samples from age 6 to age 8 years shows a steady growth of these values, together with increasing age, with a very high rate of progress to control samples showing muscle strength.

The coefficient of variance computed presents us values between 0,4 (samples in the support circle lying and climbing rope-at the age of 6 years) and 7.9 (sample hung maintained at Hula-all at the age of 6 years), which is a statistical variability accepted as being very small.

Analysis of the absolute values of this indicator reveals an increase in the variability of the average data from age 6 to 8 years of age, except sample hung maintained at horizontal bar, in this case obtaining a reduction in the variability of environments.

### **Conclusions**

Formation, strengthening and perfecting the skills specific to male gymnastics, is through a large volume of repetition of elements, legărilor, and combinations of exercises, and the main methodological feature of physical training in order to ensure the support required is: “creating functional surplus compared to the minimum requirement of mouve gym” (V. Grigore, 2001), which gives stability and safety performance.

Particularly high technical level, which was reached at the present time in artistic gymnastics male, is primarily due to the greatest extent, the increasing of efforts during training.

Increasing the number of training (per day, microperiod, mezo-ciclu and macroperiod), increasing the number of hours of training in your workout, increase the volume, intensity, density and complexity of the effort, are just some of the changes and the



accumulation of modern training in gymnastics.

Along with these, it is remarked, the improvement of methods and means of training, equipment and materials, apparatus competition, as well as supporting the training apparatus in ideal conditions.

Knowing that the effort in gymnastics is a neuromuscular-type effort (amid a endocrino-metabolic substrate for support) and neuropsychological effort (a. Dalipe, 1970), we consider the global effort (throughout the duration of the training), as mainly an aerobic environment which consists of anaerobic and anaerobic alactacide efforts lactacide (items, legărilor executions, combinațiile or and exercises taken separately).

Attainment of a high level of effort, the parameters of the higher classes (the Ith and Masters), is conditional upon the preparation and effort from the lowest category of classification.

Learned nonuse at early ages, with sub-maximal efforts, represents the certainty of future maximum efforts and supra-maximal from higher categories.

Gymnasts from training for beginner and performance groups, must be aimed at overcoming the performance and achievement of gymnast the most valuable model, characterized by very high capacity of effort, the optimum in terms of morpho-functional, mentally balanced and eager to make performance.

Number of practice sessions for a week, at these ages, represents approximately 50% of the volume this indicator at the level of high performance.

Number of workouts per week gradually increases with age, the level of training and the program he would never take money from the school. If at the age of 6 years there are two days off a week, it is subsequently will reach a volume of 10 to 12 workouts per week.

Your workout time increases gradually, in proportion to the effort he would never take money from. So if at the age of 6 years being an average of 70 minutes, at the level of high performance it by touching an average of 210 minutes.

Number of weeks in a year of preparation for these ages, rep-

resents an indicator of effort dynamics in artistic gymnastics very close to that found in the high performance. At the highest level this indicator reaches, on average, at 49 weeks.

The volume of this at drill is an indicator very important, in view of the fact that, its reporting to the other indicators, it gives a very accurate picture of the assimilation capacity, he would never take money from progress. At the same time this indicator provides information relating to the interest, he would never take money from desire to raise songwriting sports.

Total time spent in the training camp is an indicator of the dynamics effort which objectiveaza a plus of effort from other periods, in view of the fact that in the training camp there are no other concerns (and in particular those of a school) outside the preparation process.

Number of contests are the force dynamics indicator is furthest from the one of the high performance. If at the age of 6 years we have 2 competitions per year, it has reached a number 6 at the age of 8 years and more than 15 at the level of high performance. From the point of view of official competitions this indicator can be found only from the age of 8 years ago, when small gymnasts may submit exercises to full length all the appliances (or just a few of them) in accordance with the rules of competition.

Total Time of non-specific training should be added to the total preparation. This indicator shows the volume allocated to non-specific effort, additional essential process of preparing, especially at these ages, with a maximum of time spent at the age of 6 years. With increasing level of performance this indicator is considerably reduces the volume.

Analysis of the data shows that effort density at ages subject to research is greater than at sea level performance - reported to the total preparation. In view of the proven, we can say that dynamic hypothesis according to which effort to ages 6 - 8 years (job start competitive) becomes factor for the selection for the next generation of gymnasts, are hereby confirmed.

So programming process of preparing small gymnasts will start level dynamics indicators effort demonstrate to be determi-

nants for achieving a team of artistic gymnastics competitive. 9.837 WHICH fail to obtain the values of indicators effort dynamics determine, they managed to obtain performance sports exception.

Variation of the values of indicators effort dynamics to the appliances is in accordance with the characteristics small gymnasts age and the difficulty of exercises to these appliances.

The total number of elements in a training session to bar finals, represents effort dynamics indicator with the highest rate of progress of all the appliances, it arriving at the age of 8 years to be four times higher than at the age of 6 years.

It has to be stressed particular case of Rebound, several indicators of effort dynamics being suprapusi execution thanks to this appliance. Slowest progress can be found at O-rings, the specificity of this appliance is in contradiction with the characteristics of the age of small gymnasts.

Prevailing in the process of training from the age of 6 years are acrobatics and high diving along with the goat (cal) and parallel to each other. Subsequently, from the age of 7 years, the process of preparing equilibrate by tackling all the apparatus of the contest. At the age of eight, the indicators effort dynamics triples in the case of most appliances (with the exception of rings) in start-up of competitive conditions.

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