



## **PLYOMETRICS INSIDE THE PRIMARY SCHOOL CYCLE AND DURING GYMNASIUM**

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The students of the modern civilization allocate more and more spare time to sports that has become a must of their daily existence.

With a view to obtaining better results, the school population must not oversee the practice of a sportive activity, either an individual or a collective one, by respecting a certain program, all throughout their school classes.

Although less known, the notion of plyometrics is well present inside the school and extra-curricular activities, starting from the very first years. One must not forget that the first contests of this nature were organized in the Carpathians: long jumps over several horses, contests for which the participants trained intensively and exclusively.

By Carrio Ch. (2001) plyometrics appeared empirically, in 1930, in the Northern and Eastern Europe countries, the first manual dating from 1933, its author being a member of the National Romanian Academy of Physical Education. Its title was: "Jump training for sportsmen".

During the last 3- years a few researchers studied and published on plyometrics and its effects. These researchers- Verkhosanski, Bosco, Gilles Commeti- scientifically underline the advantages of this method in developing the explosive power.

Considering that plyometrics solicits rapid fibers of the type 2a and 2b (Duchateau, J.,) (without using slow fibers of the type 1b)and it leads to their synchronization, this leading to a rapid force development, this method is to be considered an easy to use method, implying no risks for the primary learning, as well as for the gymnasium stage.

As a consequence, plyometrics allows for the process of adjustment to all age levels, due to the possibility of scaling the difficulty of the used exercises.

Both during the primary school cycle, as well as in the gymnasium one, we may organize the Physical Education class (the VI th part of a chain) based on programs for developing force, involvement of all body parts and use of adequate methods (simple plyometrics).

Despite the fact that many teachers have been reticent enough in applying these new orientations concerning the force development at ages in between 6-14 years, children aged 5 or 6 years play "sotronul" (simple plyometrics) outside their block of flats, climb their playground areas, play with a cord, do long jump races.

Considering all these arguments, we appreciate as no exaggeration if simple, force development programs, with and without objects, are proposed during the primary cycle, by strictly respecting the age particularities.

For the children barely starting a sportive activity (primary classes) and who just begin ding plyometric exercises, one very important aspect is that of putting into practice a small program of muscle strengthening. This program is realized over 2or three weeks. For great efficiency, 2-3 days of repose are prescribed. The first lessons have a plyometric fundament and after a period of 3 weeks, they can turn into exercises exclusively plyometric. One important thing is that this very activity does not require expensive specific materials. The place where the plyometric training takes place must be adapted for a more at ease execution of the explosive exercises.

This place can be either grass, which does not make one slip (wet), tartan, parquet or even better, elastic floor.

**Necessary materials:**



-Medicinal ball (3-5 kg)-for developing the back and the abdominal muscles;



- The gymnastics bench- present in all sport classrooms and used for jumps “on” and “over” it. This bench is part of the apparatus used for the simple plyometrics.



- Inclined stairs- present in polyvalent rooms, at mountain sport basis, at the municipal stadium, where the inclination must not be higher than 10-15°.



- Fences for running - are to be found on athletics stadiums and can be set at different heights. Low fences (30-40 cm) are the efficient ones in the case of children, that is, for simple, easy plyometrics.



- Circles for artistic gymnastics –used in simple and medium plyometrics.

The age at which these plyometric exercises are executed must be carefully considered. At children, one must show concern for the muscular areas, as well as for the joints. The approached exercises must be used as games, being funny ones and respecting the children’s capabilities- little series and repetitions (3-4 series, 6-8 repetitions).

For a good quality muscular contraction, the muscle must be warmed-up. The inner heat allows for a good elasticity and helps to avoid any possible accidents. A good warm-up also allows for a better neuro-muscular coordination, more complex movements and, not to be neglected, the mental accommodation to the requests of the lesson.

The warm-up is realized through slightly intense exercises (running at ease): running without displacement, special running exercises, push-ups-s, abdominal exercises.



Length: 8-12 minutes.

After the general warm-up, the stretchings follow, having the next role:

-they complete the warm-up and help the neuro-muscular coordination;

-they help developing the articular mobility, which ensures a certain economy during the proper

execution, so economy of the energetic reserves;  
 -the stretchings prevent accidents.

THE WARM-UP	
Slight intensity exercises	Elongations
	
<ol style="list-style-type: none"> <li>1. Running.</li> <li>2. Running by lifting the knees.</li> <li>3. Running with legs almost touching the bottom.</li> </ol>	<ol style="list-style-type: none"> <li>1. From a position of standing with legs apart, one arm bended upwards and the other pulling at him at the elbow level.</li> <li>2. From a kneed position, the trunk bended forward, one arm stretched forward and supported on the ground.</li> <li>3. From a seated position where the soles touch each other, the palms grab the ankles, the elbows rest on the knees; a pushing movement.</li> </ol>
<i>Dosage:</i> 3-5 minutes.	<i>Dosage:</i> 5-7 minutes (each exercise is maintained for 10-20 seconds)
<i>Methodical indications:</i>	
The warm-up must be complete, so that it solicits the muscular masses implied in the trainment lesson.	

**Repartition of the different plyometric categories in function of the class and age level**

Cycle	I	II	III	IV	V	VI	VII	VIII
Simple plyometrics								
Cord jumps								
Jumps through circles								
Jumps on one leg								
Jumps on the bench								
Jumps over low fences								
Inclined jumps								

**Important:**

- The use of plyometrics must be all the time preceded by a good warm-up;
- In case of easily recovering accidents, children must be cautioned to use slightly plyometric exercises;
- The plyometric training, being an efficient one, asks for at least 48 hours for recovery.

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