



AGE DIFFERENCES IN SOME CONDITION AND COORDINATION ABILITIES

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ABSTRACT

PURPOSE: The aim of our study is to determine age difference in some of the main coordination and conditional abilities, which could contribute to the improvement of training methods and training process in all. **METHODS:** The subject of our study is some of the major condition and coordination abilities. From the coordination abilities, we have tested – rhythm, balance, accuracy in aiming and spatial orientation. From the condition abilities we have tested speed, power strength of arms and legs and speed endurance. We have tested coordination abilities of 178 children at the age of 8 to 16 years and conditional abilities of 161 children at the age of 9 to 16 years. The children have been tested with 4 coordination tests and 4 conditional tests. **CONCLUSIONS:** Different coordination abilities, have different appearance in the 8-16 years. While the conditional abilities are similar in this age period – gradually improvement of the results till 15 years and then little regression. Sensitive period for the rhythm is 12-14 years; for balance is 14-15 years; spatial coordination is 12-15 years; for accuracy in aiming is 8-10 and later 16 years. With the growth of the human and increasing of the muscle mass conditional abilities are getting better.

Key words: children, sensitive periods, development, improvement

INTRODUCTION

Coordination and conditional abilities are two major abilities necessary to the human to be able to practice any sport and not only. These abilities are vital to the human in everyday life, where we have to be able to get from point A to point B, where we have to be able to get over different obstacles and coordinate our movements to get to the final goal.

This makes development and improvement of the children, especially in the sports field, very important task, which contribute to the human's movement development in the future. Conditional abilities are major factor for future high results in the sports field (1).

According K. Aladjov (2) the complex appearance of conditional abilities is the fundamental for physical preparedness of the athletes. They are necessary and obligatory part of sports activity.

M. Petrova and col. (3) determine that coordination abilities have logical correlation in between. According to the authors, they are major factor at the beginning of sports preparedness and development of movement habits.

According to A. Momchilova (4) movement abilities of young children is difficult social-pedagogical problem and solving that is a complex process.

METHODS

The aim of our study is to determine age difference in some of the main coordination and conditional abilities, which could contribute to the improvement of the training methods and training process in all.

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To get to our goal we have to test bigger number of children in different age and to determine their level of condition and coordination abilities through which we could determine how these abilities apply in different age stage.

The subject of our research is some major condition and coordination abilities. In particular from the coordination abilities, we have tested – rhythm, balance, accuracy in aiming and spatial orientation. From the condition abilities we have tested speed, power strength of arms and legs, as well as speed endurance.

For the needs of our study, we have tested 178 children at the age of 8 to 16 years in their coordination abilities and 161 children at the age of 9 to 16 years in their conditional abilities.

The children have been tested with 4 coordination tests – one for rhythm, one for balance, one for accuracy aiming a goal and one for coordination in the space. About the conditional abilities the children have been tested with 4 other tests – running 20 m from standing stance, long jump from one spot, throwing a medical ball from laying position and speed running endurance with suicide test.

Results has been processed with specific mathematical methods.

RESULTS

On **Figure 1** are presented the results of coordination abilities tests of the examined children. On the figure we could see that different coordination abilities in different age vary and with the growth these abilities not always are improved.

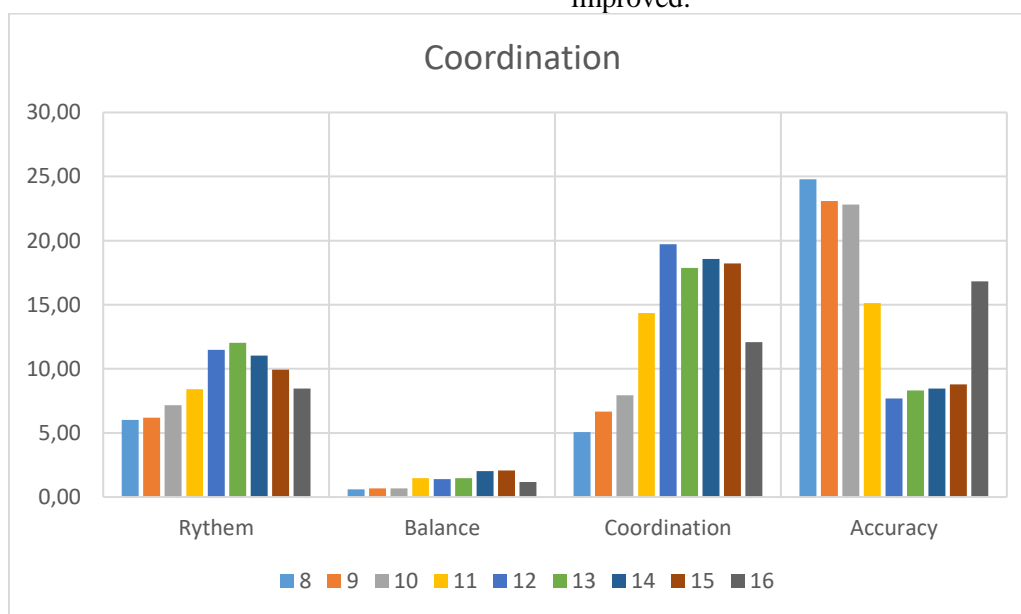


Figure 1. Coordination

In the first test, testing the rhythmic abilities of the children we could see from the figure that the results have been improved, reaching top of their abilities at the age of 13 years, after that there is decreasing in the results. This is showing that rhythmic abilities are in their best stage at the age of 12-14 years.

Next index is the balance. We defined a plateau in this ability at the age of 8-10 years, after which there is improvement in the balance and then another plateau at the age of 11-13 years. At the

age of 14 and 15 years there is another improvement in the balance abilities after which it at the age of 16 years it drops down. Form the presented results about the balance abilities we could say that they are present best by the children at the age of 14 and 15 years.

About the spatial orientation, first we should mark that lower time results are better results. With this in mind watching the figure, we could say that with the growth of children the spatial orientation is getting worse. This fact we think is

because of the entering in the puberty. At 12 years spatial orientation has its lowest pick. After that between 13 and 15 it is in a plateau and after the puberty it is going up.

Last examined coordination ability is accuracy in aiming a goal. On the figure we find that accuracy in aiming a goal is better present in younger children (8-10 years). After 10 years old accuracy decrease. At 12 years old children sharply drop down. And after that, up to 15 years accuracy in aiming is slowly improving. Then after 16 years it sharply it jumps up and gets improved. We think that these results are because of the puberty period.

About the conditional abilities the picture is present in the next two figures. In the first figure

are presented the results from power strength test of the arms and legs of the tested students.

In **Figure 2** we could see that power strength of the legs slowly is getting better with the years, up to 15 years old, at 16 years the children have a little decreasing in the power ability. In the power strength of the arms the picture is kind of the same as this one on the legs, with few slide differences – at 9 years old the power strength in the arms is slide better than this one at 10- and 11-years old children. But all in all, the power strength after 10 year is getting better and better up to 15 years. After 15 years we find a little drop in the power strength of legs and arms.

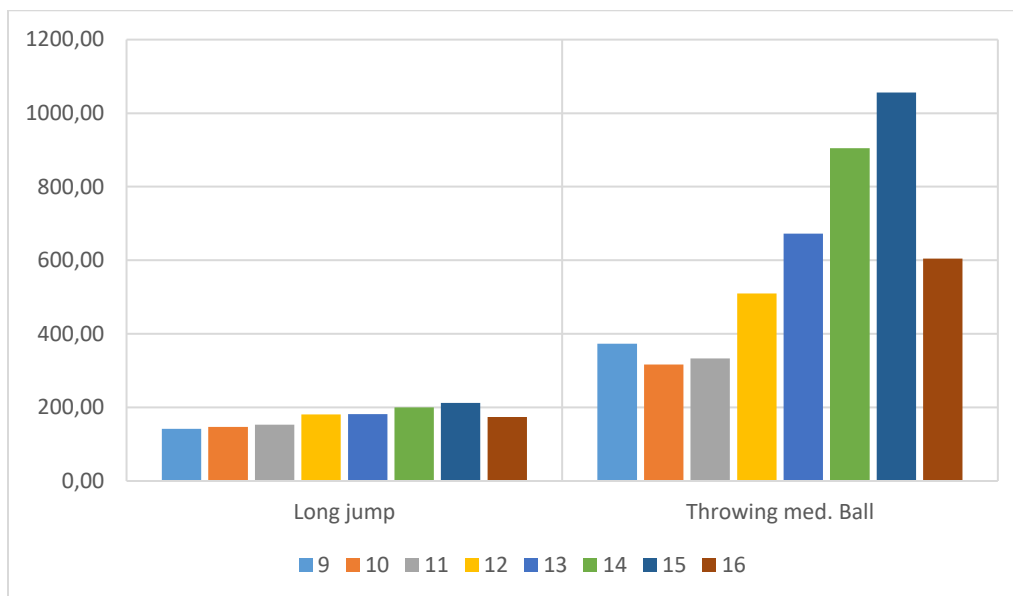


Figure 2. Power strength

In the last figure (**Figure 3**) are presented the results from the speed and speed endurance of the tested children. About the speed abilities the picture is absolutely the same as the picture about the power strength. The lowest results are at 9 years old children, after that up to 15 years old the speed abilities of the children are improving and after 16 years there is a little decreasing of this abilities.

The “picture” about the speed endurance is various. With other words it has wavy line character. From the figure we could see those 9 years old boys have better results from 10 years old boys. At 11- and 12-years the boys have better results from 10 years old once. The difference between 11- and 12-years boys is minimal. The children at 13 years have worsen performance than previous age, and after that at 14, 15 and 16 years the difference in the results are minimal, and with every other year they are getting worse.

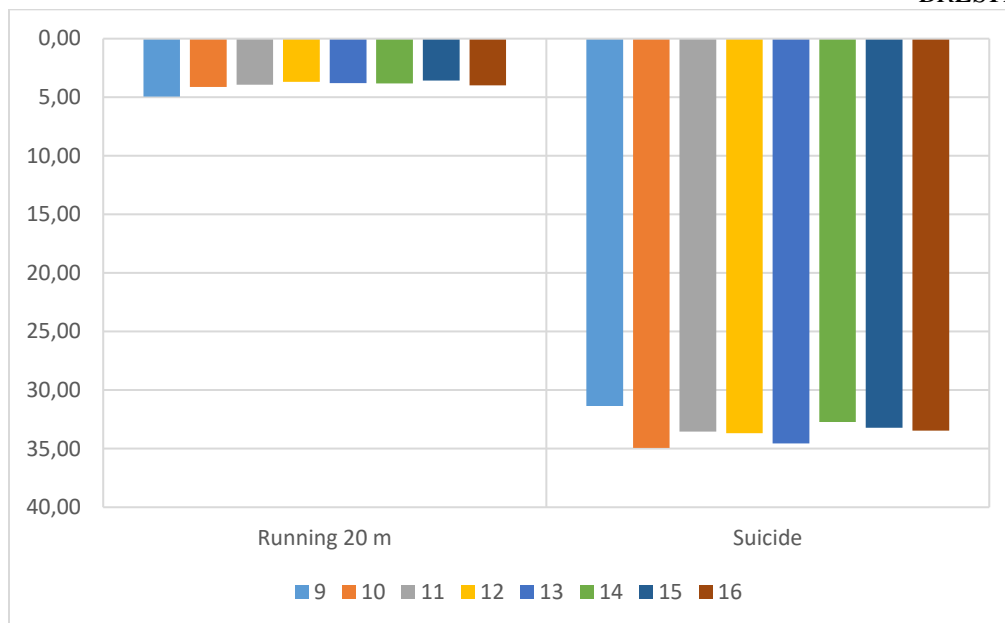


Figure 3. Speed and speed endurance

CONCLUSION

Different children's coordination abilities have different appearance in the age period 8-16 years. While the different children's conditional abilities in the same period are similar developed – gradually improvement of the results till 15 years and then little regression.

Sensitive period for the rhythm is 12-14 years; for balance is 14-15 years; spatial coordination is 12-15 years; for accuracy in aiming is 8-10 and later 16 years.

With the growth of the human and increasing of the muscle mass, conditional abilities as speed,

power strength and speed endurance are getting better.

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