



# BALANCE ABILITY IN YOUNG SOCCER PLAYERS



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## Introduction

Soccer players are often in an unbalance condition due to the nature of the game. Thus, it is important to measure balance abilities through balance training in order to improve performance and to prevent injuries by avoiding unbalance in monopodalic support.

## Methods

The aim of this joint research was to evaluate balance abilities in bipodalic and monopodalic support. We considered 119 male soccer players grouped by age: 9-10, 11-12, 16-17, and 18-19.

The test took 30 seconds and was carried out using a balance platform (Libra Easyteach, Prato, Italia) on the frontal plan under 3 different conditions:

- equilibrium test on bipodalic support, gazing straight forward keeping eyes opened and legs bended;
- equilibrium test on right monopodalic support, gazing straight forward keeping eyes opened and legs bended; and
- equilibrium test on left monopodalic support, gazing straight forward keeping eyes opened and legs bended.

The results were analyzed with ANOVA, evaluating every class of ages and the differences between the right and left leg. We considered as meaningful any value  $P < 0.05$ . This research was made jointly with the Youth Department of the soccer team Atalanta BC and the Faculty Motor Sciences of University of Milan.



Figure 1 show execution of Balance Test and Libra software platform

## Results

In the older the subjects, the bipodalic equilibrium condition was better in respect to the other groups ( $P < 0.001$ ). In respect to the 9-10 age group, for both legs, the bipodalic equilibrium worsens in the range of age 11-12, and then it improves until age 19. Moreover, the older the subjects the greater the difference is between the left and the right leg. Thus, the accident factor risk is greater in older players. The difference between right and left legs, in subjects within the 8-19 age group, is statistically significant ( $P = 0.04$ ).

AGE	EQUILIBRIUM (Mean±SEM)			Difference % Right-Left
	BIPODALIC	RIGTH	LEFT	
09-10	8.73±0.47*	4.18±0.32	3.99±0.35	5%
11-12	8.00±0.45*	5.34±0.79	5.05±0.62	6%
16-17	4.45±0.31*	4.19±0.43	3.88±0.37	7%
18-19	4.21±0.29*	3.51±0.33	2.80±0.17	20%**

Table 1

Equilibrium test results among 4 different groups: absolute and percentage different values in monopodalic equilibrium test. \* $P < 0.001$  test bipodalic; \*\*  $P < 0.04$  difference between right and left leg (Anova).



Figure 2

The graph show the correlation between the test (\* $P < 0.001$ ; \*\*  $P < 0.04$ )

## Discussion and Conclusion

We observed that bipodalic balance improves with age; it may be due to coordination improvement after the puberty. For all the age groups, the subjects show a better monopodalic balance Left than the Right; it can be explained noticing that the right leg often is dominant for kicking, while the left leg often used as support.

Moreover, the older the subject the greater the difference between the Left and the Right leg; it can be due to the specialized use of the dominant leg during performance. This difference can increase the risk of injury, when players perform cyclic actions, because one leg is stronger than other one. To reduce the risk of injuries Balance Training is needed. With this training we can improve both strength and balance, reducing the unbalance between the legs (1- 3).

## References

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