

## Circadian Typology and physical performance in adolescent soccer players

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The innate circadian rhythms influence our daily behavior, and people typically display preferences for activity at certain time of day. These differences may be classified with the concept of Circadian Typology (CT): Morning, Evening and Neither Types (M-types, E-types, and N-types). The propensity toward diurnal or evening preferences can vary in different life periods and typically a shift towards eveningness occurs during adolescence [1]. In this period, football is one of the most practiced sports, and generally soccer workouts take place during the afternoon or evening. Many variables related to sports performance are linked to the CT [2]. Therefore, if the physical exercise is practiced in a favourable circadian period, it could determine an improvement in performance.

Aim of the study is to verify whether there are performance differences relating to CT in adolescent soccer players. We recruited 80 male soccer players that filled in the Morningness-Eveningness Questionnaire (MEQ) for the assessment of CT. 39 participants, subdivided in M-types (n=13), E-types (n=13) and N-types (n=13), performed three tests (Sargent Jump Test, Illinois Agility Test and 6 Minutes Run Test) at two different times of the day, at 9.00 am and at 6.00 pm. The data, analyzed by Mixed ANOVA, show statistically significant differences between the three CT and time of the day (Sargent Jump,  $p < .05$ ; Illinois Agility  $p < .01$ ; 6 Minutes Run  $p < .01$ ). In particular, for the three tests, E-types show a higher performance during the evening than the morning session. By contrast, M-types performed better in the morning than in the evening session.

The results show that CT is able to influence the performance in adolescent soccer players.

### References

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### Key words

Circadian typology, chronotype, MEQ, body mass index, physical performance.