**Associazione Nazionale Medici Cardiologi Ospedalieri**

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## CONGRESS ABSTRACT

# ASSOCIATION BETWEEN REGULAR SPORT ACTIVITY AND RESTING HEART RATE VALUES IN A CROSS-SECTIONAL ADOLESCENT STUDY

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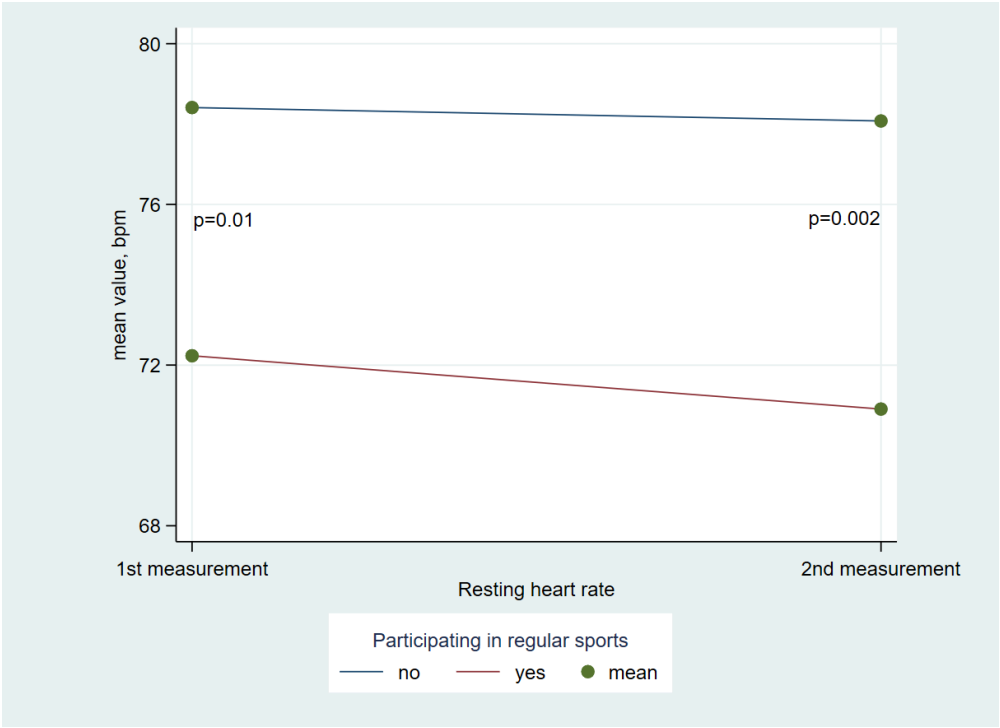
PREVENZIONE CV (https://abstract.anmco.it/tag/prevenzione-cv/), RISCHIO CARDIOVASCOLARE (https://abstract.anmco.it/tag/rischio-cardiovascolare/)

A collaborative project between the ABC Study on Heart Disease Foundation and Liceo Guglielmo Marconi. Background: Resting heart rate (RHR) is a crucial physiological parameter that reflects autonomic regulation, cardiovascular function, and overall health. In adolescents, regular physical activity, particularly sports, has been associated with improved cardiovascular efficiency, resulting in a lower RHR. Objective: To evaluate the association between regular participation in sports and RHR among adolescents in a cross-sectional study. Methods: A total of 250 high school students from an educational institute in Conegliano (TV) (Liceo Guglielmo Marconi) were enrolled and stratified into two groups: those participating in regular sports (≥3 times/week for ≥60 minutes/session) and those with sedentary or minimal physical activity. Resting heart rate, and other electrocardiographic (ECG) parameters were evaluated in 2 different settings and compared between both groups. The data were analysed using adjusted linear regression models. Results: The students had a mean age of 17 ± 1 years, with 53% being female. One student was diabetic ant two were hypertensive. All students exhibited a sinus rhythm, with a mean RHR of 73 ± 15 bpm. A total of 211 students (84%) were actively participating in regular sports activities (57% isotonic and 43 isometric exercises), and they shared most demographic and clinical characteristics with those who were not. Resting heart rate values were significantly lower in students who practiced sports (72.2±15.2 bpm) compared to those who did not (78.4±11.9 bpm), with a p-value of 0.01. In the post hoc analysis, the significant difference in RHR was predominantly observed in students engaging in isotonic exercises compared to non-sport-practicing students (mean difference -7.6; p= 0.01). In the fully-adjusted linear regression model practicing sport remained an independent predictor of lower RHR values (β =-6.5±2.6; p=0.01). Results kept the same using a repeated RHR measurements. Conclusion: This analysis highlights the importance of sports, particularly isotonic exercises in enhancing autonomic regulation and reducing RHR in adolescents, reinforcing the value of regular physical activity for reducing the future burden of cardiovascular diseases. Figure 1: Resting heart rate values according to practicing in regular sports.

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