Associazione Nazionale Medici Cardiologi Ospedalieri

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CONGRESS ABSTRACT

ASSOCIATION BETWEEN REGULAR SPORTS ACTIVITY AND RESTING BLOOD PRESSURE IN ADOLESCENTS: A CROSS-SECTIONAL STUDY.

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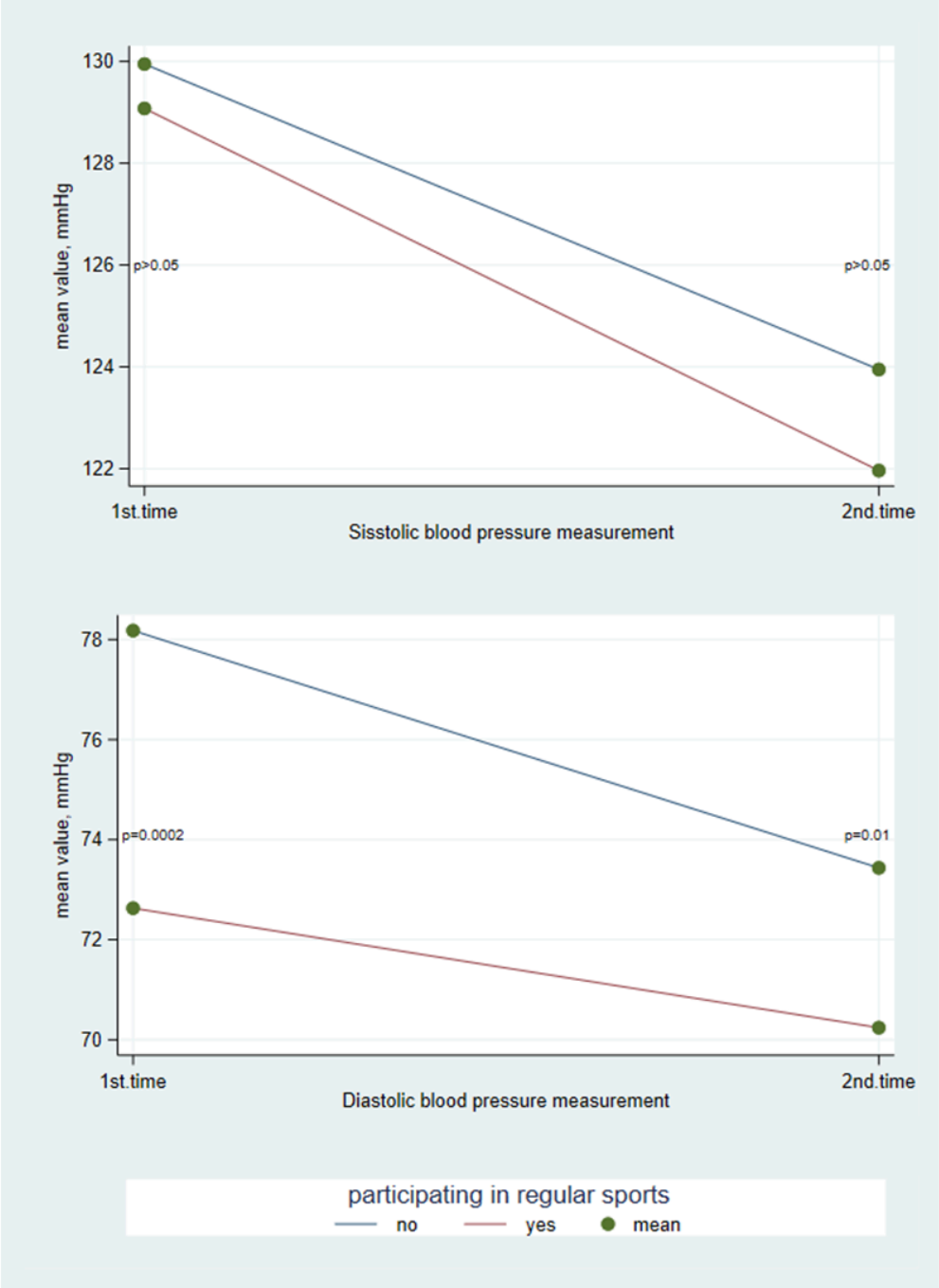
RICERCA CLINICA (https://abstract.anmco.it/tag/ricerca-clinica/)

A collaborative project between the ABC Study on Heart Disease Foundation and Liceo Guglielmo Marconi. Background: The prevalence of hypertension in adolescents is a growing concern worldwide due to its potential progression into adulthood. Identifying modifiable factors, such as physical activity, may help mitigate this risk. Aim: This study aims to investigate the association between regular sports activity and resting blood pressure (BP) values in adolescents through a cross-sectional approach. Methods: A total of 250 high school students 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 systolic (SBP) and diastolic (DBP), were evaluated in two 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 and two had a preexisting arterial Hypertension. The mean BP value of 129±13/73±8 mmHg. A total of 167 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 with sedentary lifestyle. No significant difference in resting SBP values was observed between students practicing sports (129 ± 13 mmHg) and those who did not (130 ± 12 mmHg). Yet, resting DBP values were significantly lower in sport-practicing student (72±8 bpm) compared to non-sport-practicing student (78.4±10 bpm), with a p-value of 0.0002.In the post hoc analysis, the reduction in DBP was substantial and consistently observed across different exercise modalities compared to sedentary life style with a mean difference of (-5.5;p=<0.0001 and -4.9;p=0.005) for isotonic and isometric exercises respectively.In a fully-adjusted linear regression model, practicing sport was an independent predictor of lower DBP values (β =-5.3±1.5;p<0.0001). Repeated BP measurements yielded consistent findings. Conclusion: This analysis highlights the importance of sports, reducing DBP in adolescents which may reflect an enhanced endothelial function and cardiovascular conditioning and may contribute to long-term cardiovascular health benefits and reduced risks of hypertension in adulthood.

Figure 1: Resting blood pressure values according to practicing in sport.



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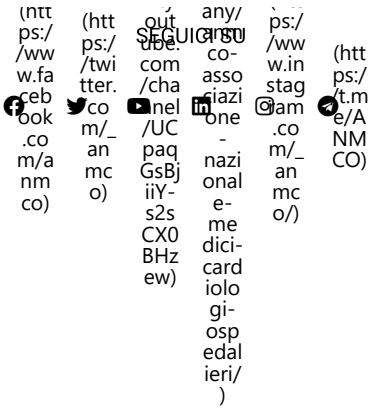
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