

Evaluation of physical fitness in 11 years old students in Northern Italy. A powerful tool to improve physical education curricula

Alessandro Cudicio, Marta Cogliati, Renza Perini, Claudio Orizio

Department of Clinical and Experimental Sciences, University of Brescia, Italy

e-mail: claudio.orizio@unibs.it



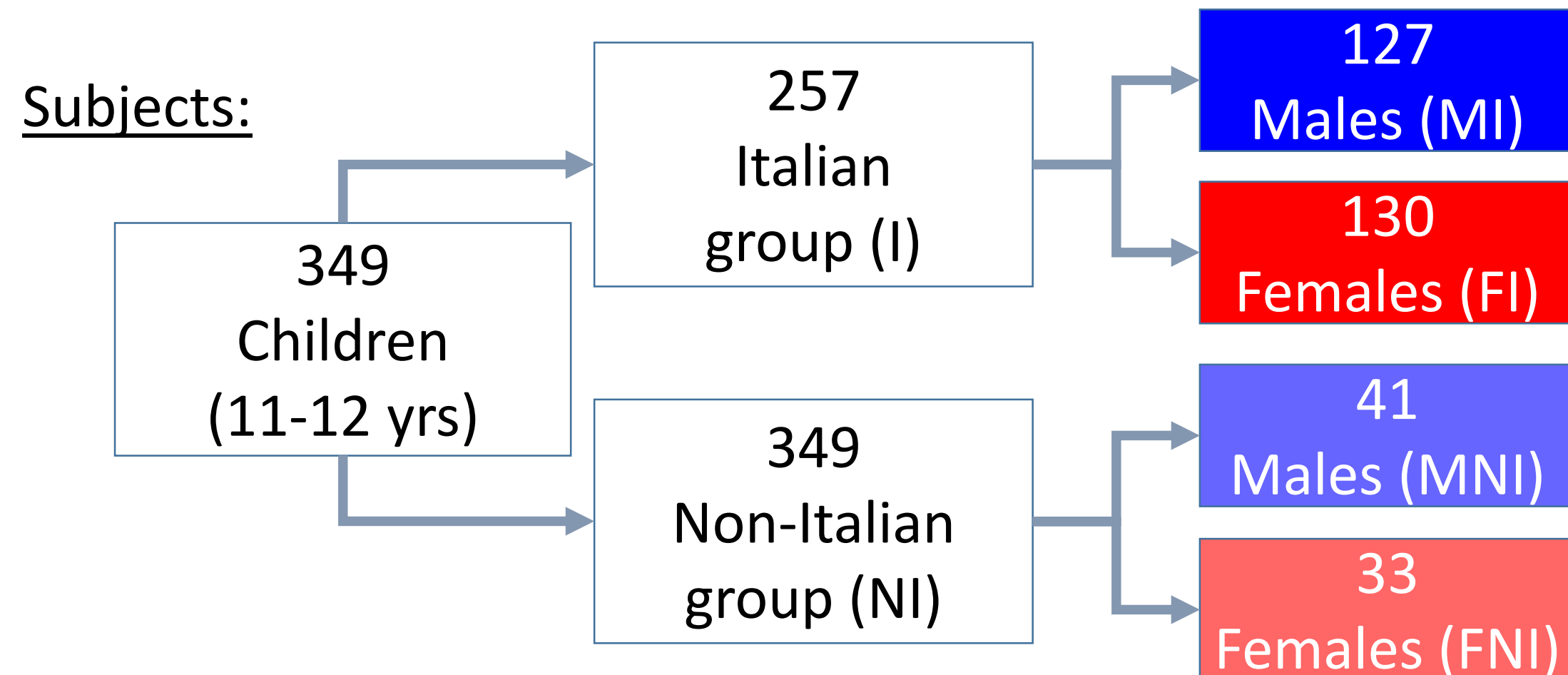
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INTRODUCTION

Physical fitness (PF), i.e. “the capacity to perform vigorous daily life activities, without fatigue occurring and keeping enough energies to enjoy leisure time” [1], is determined by four main components: cardiorespiratory fitness, muscular fitness, flexibility and body composition. PF is an important index to predict morbidity and mortality, hence its evaluation is essential at any age. [2]

Our aim was to collect functional data to provide an useful tool for promoting physical activity in middle-lower school by physical education teaching.

METHODS



Measures:

Anthropometric:

- Weight
- Height
- BMI

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Functional:

- 6MWT (six minute walking)
- SBJT (standing broad jump)
- V-SRT (V-sit and reach)

Statistical analysis:

- Two-way ANOVA (group - gender)
- Tukey test as post-hoc

RESULTS

Anthropometric data:

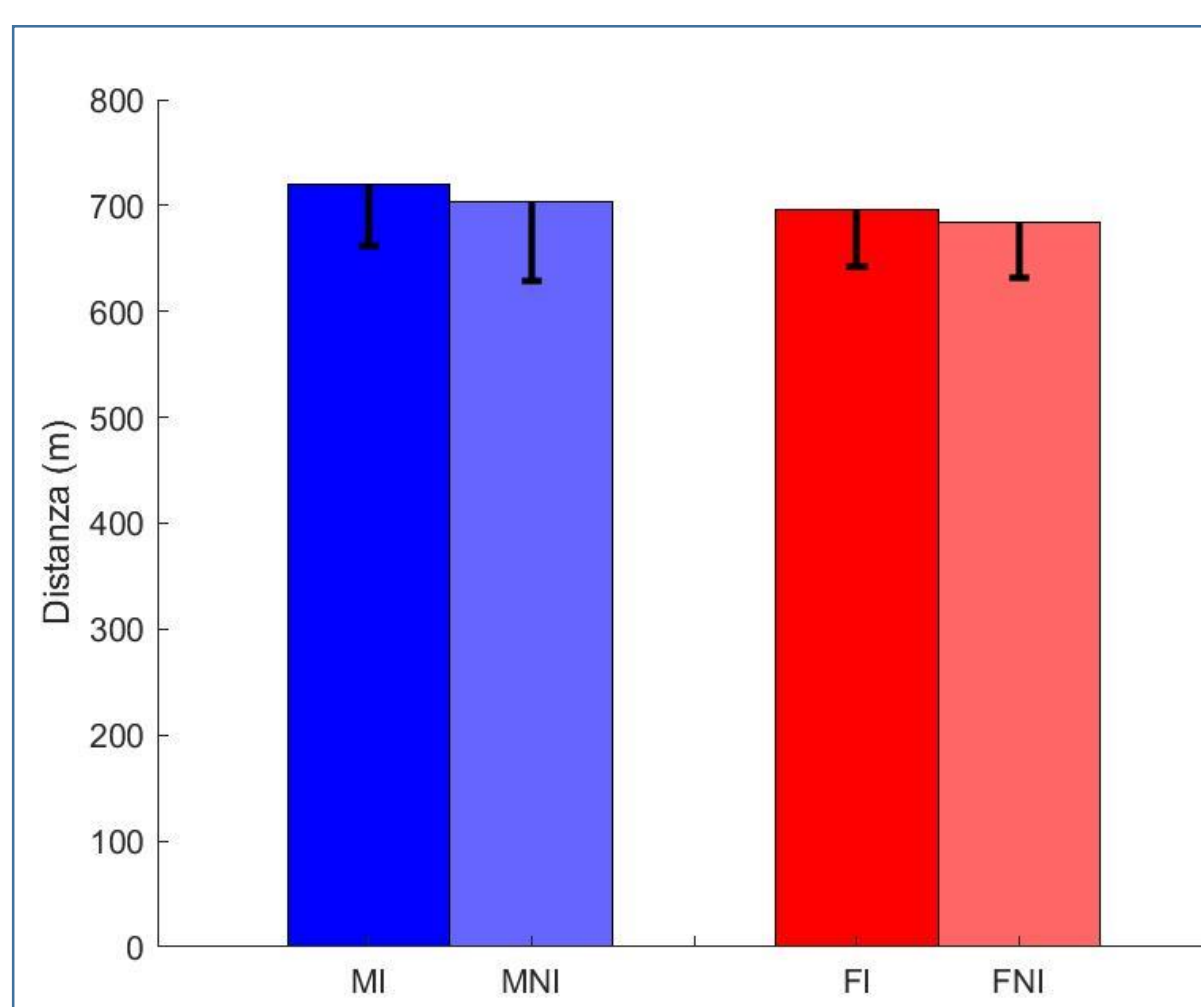
	MI	MNI	FI	FNI
Weight (kg)	43 ± 9	50 ± 10*	44 ± 10	47 ± 12
Height (m)	149 ± 8	154 ± 7*	151 ± 7	153 ± 7#
BMI (kg/m²)	19 ± 3	21 ± 4*	19 ± 4	20 ± 4

* MI vs MNI $p < 0.005$

FI vs FNI $p < 0.005$

RESULTS

Functional data:



6MWT

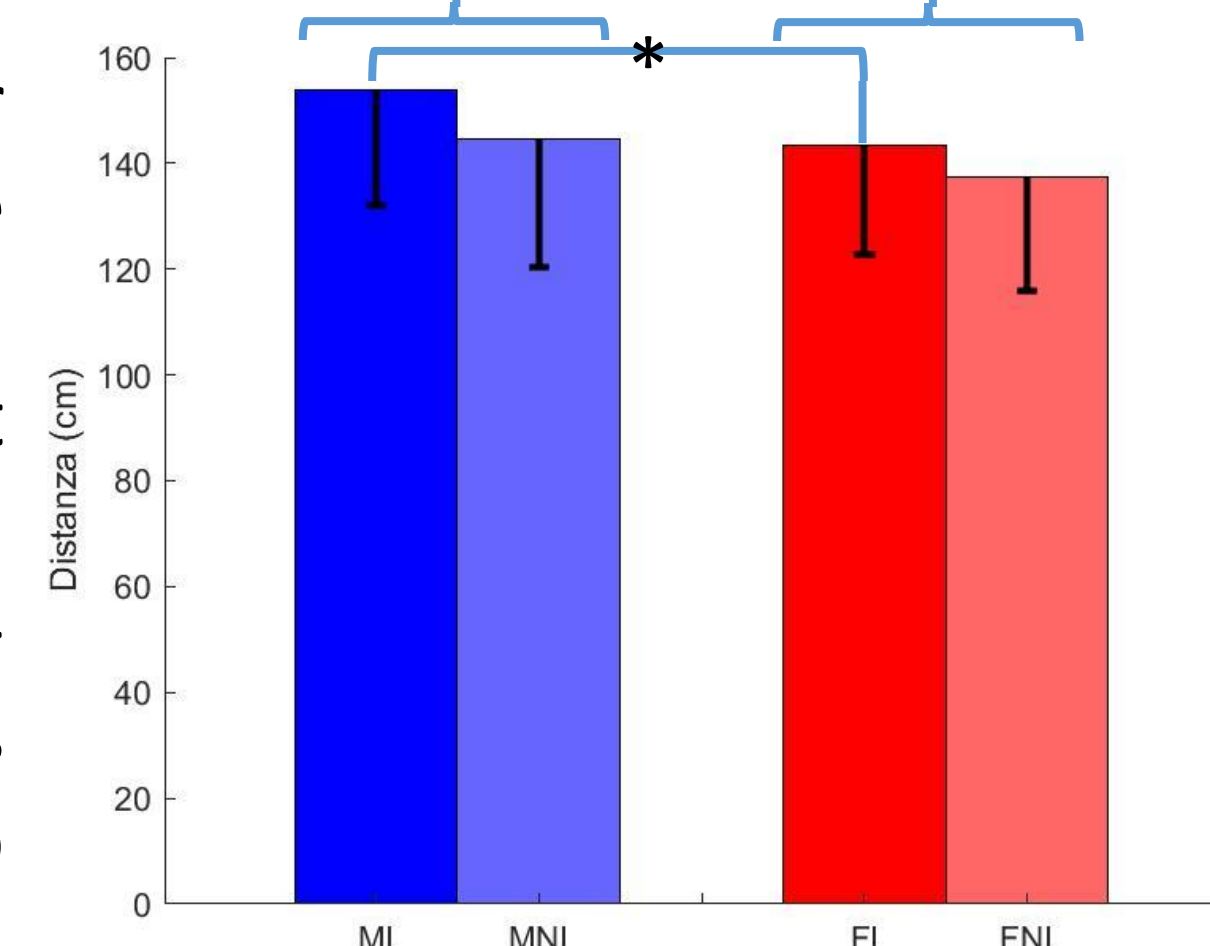
Distance in meters walked in six minute as fast as possible.

No statistical differences were found between and within the groups.

SBJT

The children jumped as far as possible by two-foot take off and landing.

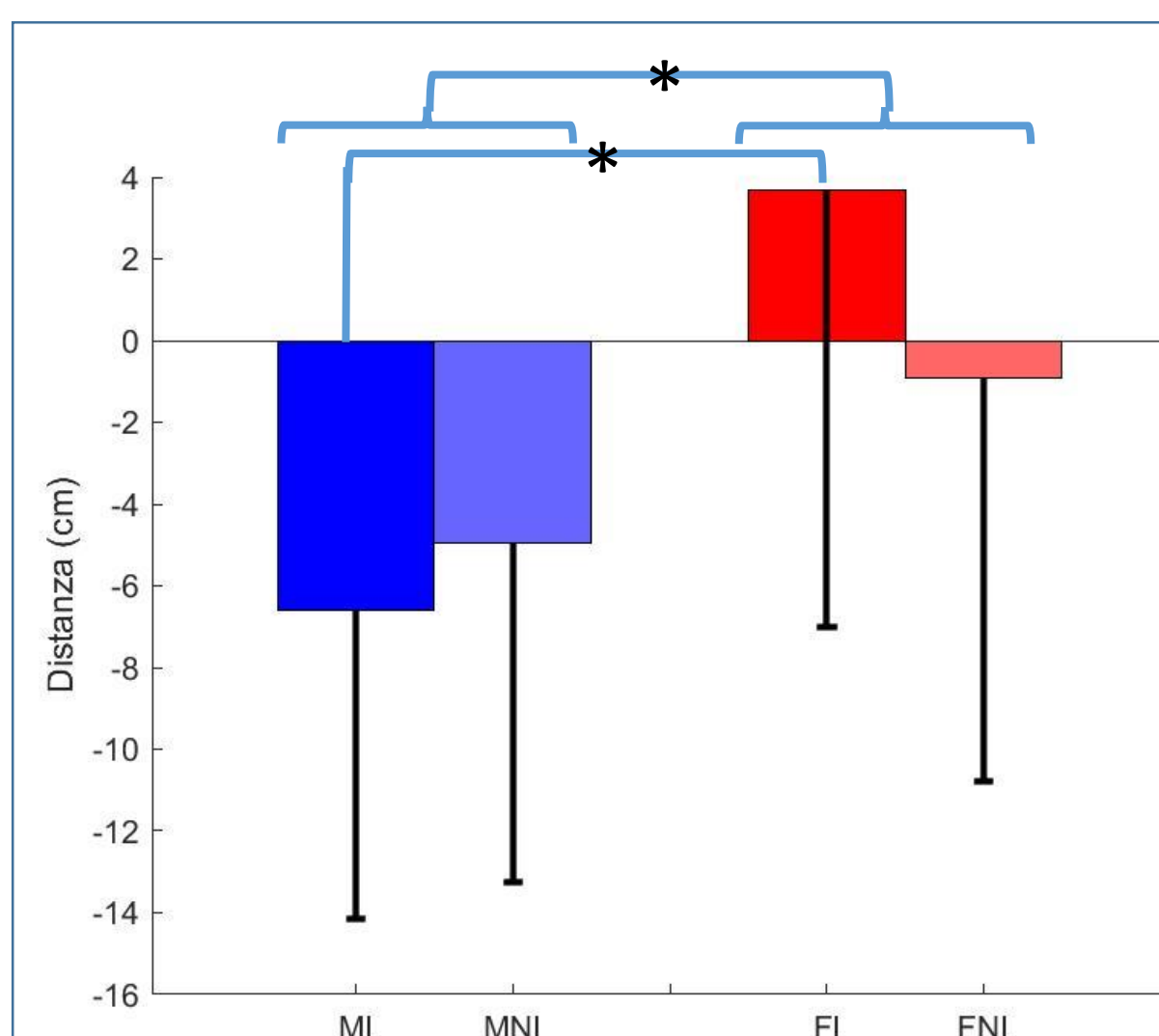
The performance was about 9 cm longer in males than in females. Significant difference between genders was observed within I group only.



V-SRT

While sitting with the lower limbs apart, the participants slowly reached forward as far as possible.

Females reached value of about + 3 cm, whereas males -6 cm. Only in the I group difference between genders was significant.



* $p < 0.005$

DISCUSSION

Italian group. BMI mean value of both M and F is close to the 50th percentile according to a previous study concerning North of Italy children. Nonetheless, 15% of M and 11% of F have to be considered overweight [3]. 6MWT and SBJT results are even better than those reported for age-matched European children [4-2]. V-SRT data are strongly influenced by gender. Males show marked negative results, while females show good flexibility. This difference should be considered in physical education curriculum.

Non-Italian group. Only two of the PF descriptors are different compared to I group data, being BMI and SBJT values higher and lower, respectively, than those of I counterpart.

According to the literature, the PF level of the investigated students can be considered adequate. Therefore, the physical education curricula could be adapted on the basis of these data, to promote physical activity in daily life and to discourage its decrease in adulthood.

REFERENCES

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