

## Joint mobility/muscular chain elasticity and motor coordination in a cohort of 9-11 years school children exposed to specifically designed and professionally guided training

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Beside the positive role that an active lifestyle plays in the physical and emotional well-being of a child, physically active children have lower risks to encounter injury as adults.

However, many groups have reported that only a small population of children in western countries are sufficiently active (1, 2).

The aim of this study was to investigate whether joint mobility/muscular elasticity and coordination were related to a merely active lifestyle or could be significantly improved in the presence of a collective, easy-to-perform, but specifically-designed and professionally-guided school program.

Specific functional and anthropometric parameters were single-blind tested on 277 children (aged 9-11 years). 148 were randomly assigned to a school-based physical education program specifically designed to increase coordination and elasticity and supervised by professionals, while 129 (control group) continued their usual physical activity at school, with no specific program.

The specific program generated a significant improvement of joint mobility and coordination abilities as compared to non-specific physical activity. As a secondary end-point, gender and BMI-related differences emerged during the study, showing that females respond better to a low intensity program, while males benefit of a higher intensity (or a differently designed) program, particularly when belonging to overweight/obese BMI classes.

These results, building up on those from our and other groups, should orient decision-makers in the area of physical exercise for primary school children in favour of specifically designed programs based on demographic and anthropometric data.

### References:

- [1] Cale L, Almond L (1992). Physical activity levels of secondary aged children: a review. *Health Education Journal*, 51 (4), 192–7. <http://www.getcited.org/pub/103340752>.
- [2] CFLRI Canadian Fitness and Lifestyle Research Institute. CANPLAY results. Canadian Fitness and Lifestyle Research Institute 2007.

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