PREVENTION OF CHILDHOOD OBESITY: A POSSIBLE
ROLE FOR PHYSICAL ACTIVITY

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The prevalence of obesity in childhood has risen over the last decades in most countries of the world and reaches epidemic levels. In addition to psychological problems, obese children are at risk to develop osteoarthritis, arterial hypertension, type 2 diabetes, and other medical problems already at young ages. Furthermore, these youngsters are likely to become obese adults.

The key determinant of changes in body fat stores and thus the main reason for the obesity epidemic among children and adolescents is an excess energy intake relative to energy expenditure. With physical activity (PA) being the most variable and – consequently – modifiable part of energy expenditure, a high level of PA during childhood should conceptually help to prevent obesity. This hypothesis is supported by longitudinal surveillance data. In a study on children followed from age 4 years through age 11 years, those belonging to the most active tertile had the lowest gain in skinfold thickness compared with less active children.

Many randomized controlled trials have been initiated to assess the effects of additional PA on body fatness in non-obese children, and to establish respective preventive programs. In most of these studies, additional PA was realized by providing extra activity time in kindergarten or school and/or by improving the quality of physical education lessons. While some of the studies, mainly those with the most vigorous interventions, did show positive effects of increased PA on body fatness or body mass index, most of the studies did not. The reasons for this disappointing result may be multifactorial and different from study to study; but some points might be considered: 1) the additional PA in many studies was relatively minor and – with baseline PA not controlled for – the change in PA was possibly not sufficient to induce effects; 2) the additional PA during kindergarten/school was compensated for by a reduction of PA at home; 3) the effects of diet were not assessed or not controlled for.

In conclusion, it is likely that PA could play a role in preventing childhood obesity. However, the optimal approach to increase PA significantly in a large part of the population has yet to be determined. Possibly, a population based approach combining an intervention in kindergarten or school with a family intervention, a media campaign and improved accessibility to save activity areas such as sports facilities provides the best promises.

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