

THE RELATIONSHIP BETWEEN BMI AND BLOOD PRESSURE IN CHILDREN AGED 6–11 YEARS

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Background: Based on the results of several international studies on the relationship between nutritional status, body composition and blood pressure in childhood and adolescence, it can be said that there is a clear relationship between BMI and blood pressure even in childhood: higher BMI values are usually associated with higher blood pressure, and prehypertension and hypertension are more common among overweight or obese children. This is also important because childhood blood pressure readings often predict the risk of cardiovascular problems later in adulthood.

Objective: In our study, we were looking for answers to the following questions: do Fitness Score and fitness status affect blood pressure? How does BMI, body composition, especially body fat, affect blood pressure? Is hydration level related to fitness?

It is assumed that abdominal obesity has a particularly strong connection with elevated blood pressure, it matters where excess fat accumulates in the body.

Subjects and methods: In 2025, we surveyed the physical status of 121 6–11-year-old schoolchildren in Budapest. Body composition was examined by In Body 720 body composition analyser, and blood pressure by Omron M1 Compact monitor.

Results: The Fitness Score is primarily influenced by body composition. Blood pressure is primarily compositional and not fitness-dependent. Blood pressure is a matter of body composition. Blood pressure is related to body size and central fat deposits. Central fat is more important than total body fat percentage. Hydration is a fitness factor.

Conclusion: Overall, in the prevention of childhood hypertension, taking into account body composition and especially abdominal fat accumulation can help us recognizing risks in time and intervene more effectively. It is worth checking BMI and blood pressure regularly in childhood, especially in the case of overweight, but in addition to BMI, it is also advisable to measure the proportion of body fat and abdominal obesity.

Keywords: BMI; Blood pressure; Fitness score; Central fat.