

# COMPARISM OF BODY POSTURE EVALUATION AND OVERWEIGHT IN CHILDREN AGE

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**Abstract:** *The author in his article solves the problems of correct body keeping of pupils with obesity at Primary school. The research sample was consisted from 30 pupils (15 boys and 15 girls) from schools in Banská Bystrica. For body posture evaluation of the pupils were used two Crampton's tests: First test – facing to the wall and Second test – back to the wall. We found out that 86.7% of tested boys and 73.3% of tested girls had incorrect body holding.*

**Key words:** *obesity, body posture, primary school, young children.*

## 1 Introduction:

The one of the most important aim of Physical education at primary school is the development of correct body holding of young children. Many authors found out that more than 50% children at primary school had incorrect body holding (Liba, 1996, Kanášová, 2005, Bartík, 2005). The correct body holding is very important for reducing of muscle disbalance and also for good coordination and healthy development of children.

Preventing overweight and obesity requires understanding and addressing the “obesogenic environment” in which children live. Environmental factors take precedence in prevention efforts because they provide the most potential for the greatest impact.

## 2 Aim

The main objective of our research activity was to find out the level of body holding of overweight children at primary school.

## 3 Methods:

The research we realised at primary schools in Banská Bystrica. The research sample was consisted from 30 overweight pupils (15 boys and 15 girls). Some somatic characteristics we describes at Table 1 and 2. The main research methods were tests of body holding.

### *Crampton tests – Body Posture Evaluation*

1. Test facing to the wall:

Description: The pupil will stand facing to the wall so that the balls of the feet touching the wall.

Evaluation: In the right posture, the pupil touches the wall by balls of the feet, chest and nose is far from the wall about 5 cm.

2. Test back to the wall:

Description: The pupil will stand back to the wall so that the heels touching the wall.

Evaluation: In the right posture, the pupil touches the wall by heels, buttocks, thoracic kyphosis and bumps occipital bone.

**Table 1** *Somatic characteristic of overweight girls*

<b>No</b>	<b>Year of birth</b>	<b>Body weight [kg]</b>	<b>Body height [cm]</b>	<b>BMI index</b>
1.	1997	54	142	26,8
2.	1997	49	138	25,7
3.	1997	58	152	25,1
4.	1997	54	147	25
5.	1999	48	138	25,2
6.	1997	60	153	25,6
7.	1997	58,5	150	26
8.	1997	45,5	134	25,3
9.	1998	48	135	26,3
10.	1996	50	142	24,8
11.	1998	52	136	28,1
12.	1997	55	148	25,1
13.	1997	51	144	24,6
14.	1998	52	139	26,9
15.	1997	56	142	27,8
<b>Mean</b>	<b>1997</b>	<b>52,7</b>	<b>143</b>	<b>25,9</b>

**Table 2** *Somatic characteristics of overweight boys*

No	Year of	Body weight [kg]	Body height [cm]	BMI index
1.	1996	56	149	25,2
2.	1997	83,5	157	33,7
3.	1997	87,5	156	36
4.	1996	66	151	28,9
5.	1999	39,5	127	24,5
6.	1999	41	128	25
7.	1998	53	140	27
8.	1998	52	144	25,1
9.	1997	57	152	24,7
10.	1996	52	137	27,7
11.	1996	59	153	25,2
12.	1998	55	135	30,2
13.	1998	43	126	27,1
14.	1997	58	145	27,6
15.	1997	57	153	24,4
<b>Mean</b>	<b>1997</b>	<b>57,3</b>	<b>144</b>	<b>27,5</b>

#### 4 The Results:

The level of body posture evaluation in pupils with obesity is described in Tables 3, 4.

**Table 3** *The level of body posture evaluation of girls with obesity*

No	1st Crampton test		2nd Crampton test	
	Correct	Incorrect	Correct	Incorrect
1.		+		+
2.	+		+	
3.		+		+
4.		+		+
5.		+		+
6.		+	+	
7.	+		+	
8.	+		+	
9.		+	+	
10.		+		+
11.		+		+
12.	+		+	
13.		+	+	
14.		+		+
15.		+		+
<b>Total number</b>	<b>4</b>	<b>11</b>	<b>7</b>	<b>8</b>
<b>%</b>	<b>26,7%</b>	<b>73,3%</b>	<b>46,7%</b>	<b>53,3%</b>

We found out that in the first Crampton test (face in front of the wall) the incorrect body holding had 86.7% of boys with obesity and 73.3% of girls. In the second Crampton test (back to the wall) the incorrect body holding had 73.3% of boys with obesity and 53.3% of girls with obesity. These numbers are very high and in comparison with children without obesity are higher.

Rosenbaum and Leibel, R.L. (1998) define that it is the environment rather than genetics that has changed. Thus, we should focus on population-based prevention childhood overweight and obesity prevention programmes, particularly interventions that address environmental determinants and can be applied on a large scale and are sustainable for children age (preferably multi-sectorial).

**Table 4** *The level of body posture evaluation of boys with obesity*

No	1st Crampton test		2nd Crampton test	
	Correct	Incorrect	Correct	Incorrect
1.		+	+	
2.		+		+
3.		+		+
4.		+	+	
5.		+	+	
6.		+		+
7.		+		+
8.		+		+
9.		+		+
10.		+		+
11.	+		+	
12.		+		+
13.		+		+
14.	+			+
15.		+		+
<b>Total number</b>	<b>2</b>	<b>13</b>	<b>4</b>	<b>11</b>
<b>%</b>	<b>13,3%</b>	<b>86,7%</b>	<b>26,7%</b>	<b>73,3%</b>

## 5 Conclusion

In our research we found out that children with obesity had very high level of incorrect body holding. This level was higher in group of overweight boys (86.7%) than in group of overweight girls (73.3%). We recommend for the children with obesity weight loss program includes an endurance exercise program of at least three days a week, twenty to thirty minutes per exercise session at a minimum of 60% of maximum heart rate. The most

suitable are: swimming, walking, cycling, corrective gymnastics and in winter period cross-country skiing.

On the base of our research results we agree with Doak et al., which even in 1998 proclaimed that ongoing monitoring and evaluation of obese children is necessary to further develop and improve of interventions and to fine-tune existing interventions in order to determine, more precisely, what works and what does not. Reversing the trends towards increasing overweight and obesity, or even holding the current trends constant, will not be an easy task. Investments are needed to implement large-scale childhood overweight and obesity prevention initiatives. The necessary investments are not only a financial commitment, from all sectors of society, but an investment in time, effort and emphasis.

## **6 References:**

Bartík P. (2005) Zdravotná telesná výchova I. Banská Bystrica: PF UMB.

Doak, C. M. at al. (2006) The prevention of overweight and obesity in children and adolescents: a review of interventions and programmes. *Obesity reviews*. Available on: [lsi.org/Europe/Publications/2006Prev\\_Over.pdf](http://lsi.org/Europe/Publications/2006Prev_Over.pdf)

Kanásová, J. (2005) Svalová nerovnováha u 10-12 ročných žiakov a jej ovplyvnenie v rámci školskej telesnej výchovy. Nitra: PF UKF.

Liba, J. (1996) Didaktika telesnej a športovej výchovy žiakov mladšieho školského veku. Prešov: PF UPJŠ.

Rosenbaum, M., Leibel, R.L. (1998) The physiology of body weight regulation: relevance to the etiology of obesity in children. *Pediatrics*.

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