

## A STUDY ABOUT THE INCIDENCE OF INADEQUATE LIFESTYLE ON EXCESS WEIGHT IN URBAN AREA PUBERTAL SCHOOLCHILDREN

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### **Abstract**

*The study starts from the assumption that inadequate lifestyles in pubertal schoolchildren may influence the growth and development of their organism.*

*The purpose of this research is to assess whether there is a significant number of puberty age pupils from urban areas who adopt an inadequate lifestyle, with negative effects on the growth and development of their organism.*

*A questionnaire-based survey was conducted with respect to nutrition and physical activities (Appendix 1) [3] on a number of 365 girls and 392 boys from General Schools no. 11, 13, 15 and 30 of Braşov municipality. The results revealed that an important percentage of the questioned schoolchildren have adopted inadequate lifestyles by consuming hyper-caloric, fat rich foods, concentrated sweets in association with lack of physical activities during school time and outside.*

**Key words:** individual genetic substrate, inadequate lifestyle, excessive weight, pubertal schoolchildren, urban area.

### **INTRODUCTION**

Excessive weight can be regarded as a consequence of the interaction between environmental factors and individual genetic substrate. A caloric intake above the energy requirements of a person leads to excessive weight, which in turn, may generate sugar diabetes, hypertension, cardiovascular diseases, and some forms of cancer.

The incidence of excess weight varies depending on the geographic area, socioeconomic level, the individual's lifestyle and food habits.

Previous studies [2] confirmed the fact that 20 – 25% of all children and adolescents are overweight or obese with a higher frequency of occurrence in developed and developing countries due to factors as [1], food excess, abundance of high caloric foods, irrational eating, diminished physical activity, sedentarism etc. Most cases of ponderal excess are the result of caloric intake above energy consumption.

The diet of pubertal children should assure the ration required for body growth and development, and to sustain physical and intellectual effort. The lack of nutrients stops the development of the physical and intellectual potential, whereas caloric excess leads to ponderal excess which continues to persist in children and adults.

Energy consumption decreases with age [3] and the caloric requirements in age groups 11 – 12 are higher in boys than in girls.

General dietary guidelines for pubertal children [5]:

◆ 4 – 5 meals /day (3 main meals and 1 – 2 snacks), which should contain the 4 basic food

groups: meat and eggs; milk and dairy; fruits and vegetables; grains, potatoes, rice;

◆ The calories content of the diet must be sufficient, the diet must be varied, food must be tasty and attractively presented;

◆ Mealtimes must be respected as much as possible;

◆ A hearty breakfast;

◆ Lunch meals should include 3 dishes;

◆ Snacks: fruits, sandwich;

◆ Dinner must be consumed 2 hours before going to bed. All exciting food should be avoided as well as foods which cause stress to the digestive system;

◆ Excessive consumption of grain, cooked fats, preserved meats, canned foods must be avoided;

◆ Consumption of coffee, alcohol or tobacco is prohibited;

◆ Maintaining the mealtime hygiene habits (hands, washing, careful mastication, tooth brushing after meals etc).

Physical effort will be employed during the period of weight constancy and less frequently during ponderal loss. Routine physical activity is recommended instead of sports exercises, aiming to transform sedentary persons into physically active persons. [4].

General guidelines for physical activities programme in overweight children [3]:

- Physical activity complements food diet;

- Cooperation with the affected child and its family should be assured ;

- Physical exercise should be performed on a daily basis and extended over a longer period;

- The physical activities programme is established individually;

- The physical activities programme is aimed at losing weight but also to promote an adequate attitude towards physical exercise.

**MATERIAL AND METHOD**

In order to emphasize the risk factors of excess weight in pubertal schoolchildren from urban areas that can influence the growth and development of their organism, between 20 Nov. and 20 Dec. 2010, we conducted a questionnaire-based survey within General Schools 11, 13, 15 and 30, from Braşov Municipality. The survey was intended to provide information about the structure of food guidelines which compose the diet status, the type of the physical activities undertaken during

school time and outside school time as well as the changes that are considered necessary for a healthy lifestyle.

To the question „How many meals a day do you eat” (Table 1), most girls aged 11 indicate 3 meals (Table 1, c), while their percentage decreases as they approach age14; in a higher proportion the boys, 75% from the 11 years age group and 65% from the 14 years age group also indicate 3 meals a day Table 2,c).

Table1 Girls

Response variants		a	b	c	d	e
Frequency (%)	11 years	0.97	27.18	66.02	4.85	0.97
	12 years	0.00	25.81	64.52	9.68	0.00
	13 years	1.06	22.34	62.77	11.70	2.13
	14 years	2.67	24.00	58.67	12.00	2.67

Table 2 Boys

Response variants		a	b	c	d	e
Frequency (%)	11 years	0.00	15.74	75.00	6.48	2.78
	12 years	3.30	18.68	68.13	8.79	1.10
	13 years	0.00	19.15	71.28	7.45	2.13
	14 years	0.00	14.14	63.64	16.16	6.06

Breakfast is consumed by most school children, while a higher percentage can be observed in girls, except for some of the subjects who occasionally deviate from this rule (Tables 3, d and 4, d)

Table 3 Girls

Response variants		a	b	c	d
Frequency (%)	11 years	51.46	24.27	18.45	5.83
	12 years	48.39	29.03	22.58	0.00
	13 years	43.62	27.66	21.28	7.45
	14 years	29.33	41.33	24.00	5.33

Table 4 Boys

Response variants		a	b	c	d
Frequency (%)	11 years	64.81	13.89	18.52	2.78
	12 years	56.04	16.48	26.37	1.10
	13 years	41.49	36.17	22.34	0.00
	14 years	42.42	34.34	19.19	4.04

Dinner is consumed at home by most schoolchildren (Table 5, a) with a decreasing percentage of those who do not have dinner at all or resort to fast food solutions (Table 5 and6 b and c).

Table 5 Girls

Response variants		a	b	c
Frequency (%)	11 years	94.17	0.00	5.83
	12 years	96.77	0.00	3.23
	13 years	95.74	1.06	3.19
	14 years	98.67	0.00	1.33

Table 6 Boys

Response variants		a	b	c
Frequency (%)	11 years	91.67	8.33	0.00
	12 years	95.60	4.40	0.00
	13 years	96.81	1.06	2.13
	14 years	96.97	0.00	3.03

The snacks between meals (Table 7 a and 8 a) consist mainly of fruits for most schoolchildren but also of sweets for 22.33-28,72% of the girls and 35.35% of the boys aged 14 (Table 7 c and 8 c).

Table 7 Girls

Response variants		a	b	c	d
Frequency (%)	11 years	66.99	10.68	22.33	0.00
	12 years	55.91	9.68	25.81	8.60
	13 years	56.38	12.77	28.72	2.13
	14 years	64.00	4.00	26.67	5.33

Table 8 Boys

Response variants		a	b	c	d
Frequency (%)	11 years	67.59	8.33	16.67	7.41
	12 years	64.84	14.29	17.58	3.30
	13 years	68.97	15.20	18.70	3.51
	14 years	54.55	6.06	35.35	4.04

The percentage of schoolchildren who consume vegetables and fruits several times a day and weekly (Table 9 a and b, 10 a and b), while the percentage decreases in both girls and boys aged 14.

Table 9 Girls

Response variants		a	b	c	d
Frequency (%)	11 years	64.08	23.30	3.88	8.74
	12 years	62.37	30.11	2.15	5.38
	13 years	54.26	35.11	4.26	6.38
	14 years	54.67	37.33	2.67	5.33

Table 10 Boys

Response variants		a	b	c	d
Frequency (%)	11 years	65.74	25.00	4.63	4.63
	12 years	45.05	42.86	3.30	8.79
	13 years	48.94	29.79	9.57	11.70
	14 years	50.51	37.37	6.06	6.06

The sweets consumption several times a day is 30% in girls aged 14 (Table 11 a) and 26.26% in boys aged 14 (Table 12 a), being on the increase compared to previous ages.

Table 11 Girls

Response variants		a	b	c	d	e
Frequency (%)	11 years	12.62	20.39	37.86	28.16	0.97
	12 years	26.88	31.18	19.35	22.58	0.00
	13 years	28.60	33.17	20.59	24.02	0.00
	14 years	30.67	22.67	16.00	30.67	0.00

Table 12 Boys

Response variants		a	b	c	d	e
Frequency (%)	11 years	17.59	34.26	30.56	17.59	0.00
	12 years	17.58	32.97	28.57	19.78	1.10
	13 years	18.70	35.07	30.40	21.04	1.17
	14 years	26.26	35.35	16.16	22.22	0.00

Daily consumption of fast food, hamburgers, sandwiches, potato chips, is low in both girls and boys, with an increasing percentage of those rejecting such products.

Table 13 Girls

Response variants		a	b	c	d	e
Frequency (%)	11 years	3.88	11.65	28.16	50.49	5.83
	12 years	4.30	8.60	40.86	44.09	2.15
	13 years	4.26	14.89	39.36	36.17	5.32
	14 years	1.33	12.00	42.67	42.67	1.33

Table 14 Boys

Response variants		a	b	c	d	e
Frequency (%)	11 years	4.63	10.19	25.00	56.48	3.70
	12 years	3.30	19.78	42.86	31.87	2.20
	13 years	7.45	18.09	40.43	32.98	1.06
	14 years	11.11	9.09	52.53	26.26	1.01

The meat assortment preferred by both girls and boys is chicken meat, 60-68% (Table 15-16 a), fish 13-17% (Table 15-16 b), while the percentage of those who are not consuming meat is very low.

Table 15 Girls

Response variants		a	b	c	d	e
Frequency (%)	11 years	68.93	14.56	10.68	0.00	5.83
	12 years	64.52	13.98	16.13	3.23	2.15
	13 years	64.89	21.28	7.45	6.38	0.00
	14 years	66.67	13.33	14.67	2.67	2.67

Table 16 Boys

Response variants		a	b	c	d	e
Frequency (%)	11 years	62.96	14.81	12.04	5.56	4.63
	12 years	62.64	12.09	15.38	9.89	0.00
	13 years	60.64	14.89	19.15	4.26	1.06
	14 years	64.65	17.17	14.14	3.03	1.01

The foods consumed according to the *Healthy Eating Pyramid -Department of nutrition HARVARD* show that 33.33% of the girls prefer fruits and vegetables (Table 15, g) while 20% prefer integral cereals (Table 15, d). The percentage of girls who consume foods from the top of the pyramid is 14.65% (Table 15, a).

In the case of the boys, the data are similar to girls' values, yet slightly lower; about 18% prefer fruits and vegetables (Table 16, g) while 23,33% prefer integral cereals (Table 16, g). The products at the top of the pyramid represent an important percentage of the foods consumed by the boys aged 14, 19.19% (Table 16, a).

Table 17 Girls

Response variants		a	b	c	d	e	f	g
Frequency (%)	11 years	6.80	16.50	2.91	13.59	47.57	2.91	9.71
	12 years	4.30	20.43	6.45	18.28	30.11	3.23	17.20
	13 years	13.83	15.96	1.06	17.02	36.17	2.13	13.83
	14 years	14.67	6.67	4.00	20.00	16.00	5.33	33.33

Table 18 Boys

Response variants		a	b	c	d	e	f	g
Frequency (%)	11 years	11.11	13.89	4.63	15.74	40.74	1.85	12.04
	12 years	15.38	13.19	3.30	15.38	26.37	6.59	19.78
	13 years	10.64	13.83	5.32	22.34	23.40	4.26	20.21
	14 years	19.19	15.15	6.06	23.23	12.12	6.06	18.18

Participation in physical education classes is higher than 90% in both girls and boys (Table 19 and 20 a and b), but for the 14 years age group the

percentage decreases due to the medically exempted, 9.33% (Table 19 and 20, a) of the girls, and 7.7% (Table 19 and 20 c) of the boys.

Table 19 Girls

Response variants		a	b	c
Frequency (%)	11 years	92.23	4.85	2.91
	12 years	92.47	2.15	5.38
	13 years	93.62	1.06	5.32
	14 years	88.00	2.67	9.33

Table 20 Boys

Response variants		a	b	c
Frequency (%)	11 years	91.67	3.70	4.63
	12 years	95.60	1.10	3.30
	13 years	96.81	2.13	1.06
	14 years	89.90	3.03	7.07

Free time activities are part of the daily schedule of both girls and boys with an increase in girls (Table 21, c) and a decrease in boys (Table 21 c), of those who avoid such kind of activities (Table 15 and 16).

Table 21 Girls

Response variants		a	b	c	d
Frequency (%)	11 years	56.31	29.13	9.71	4.85
	12 years	66.67	23.66	6.45	3.23
	13 years	57.45	30.85	5.32	6.38
	14 years	57.33	30.67	4.00	8.00

Table 22 Boys

Response variants		a	b	c	d
Frequency (%)	11 years	62.04	23.15	9.26	5.56
	12 years	68.13	24.18	6.59	1.10
	13 years	69.15	20.21	4.26	6.38
	14 years	69.70	20.20	7.07	3.03

The time spent in front of a TV set or computer, more than 2-4 hours, both in girls 52%(Table 24, b), as well as in boys, 55.56%(Table 24, b), is long,

while the number of those who spend more than 4 hours is on the increase (Table 23 and 24) in both girls and boys.

Table 23 Girls

Response variants		a	b	c
Frequency (%)	11 years	57.28	34.95	7.77
	12 years	35.48	51.61	12.90
	13 years	34.04	43.62	22.34
	14 years	26.67	52.00	21.33

Table 24 Boys

Response variants		a	b	c
Frequency (%)	11 years	48.15	37.96	13.89
	12 years	32.97	40.66	26.37
	13 years	24.47	47.87	27.66
	14 years	21.21	55.56	23.23

The change of schoolchildren's lifestyle, especially through sports practices and a modified school programme, is considered necessary in most cases (Table 19 and 20.c), (Table 19 and 20.b).

Table 25 Girls

Response variants		A	b	c	d
Frequency (%)	11 years	26.21	8.74	60.19	4.85
	12 years	26.88	26.88	38.71	7.53
	13 years	34.04	35.11	26.60	4.26
	14 years	24.00	26.67	44.00	5.33

Table 26 Boys

Response variants		a	b	c	d
Frequency (%)	11 years	24.07	12.96	57.41	5.56
	12 years	16.48	30.77	49.45	3.30
	13 years	17.02	29.79	48.94	4.26
	14 years	17.17	35.35	44.44	3.03

## CONCLUSIONS

After administering the questionnaire to a number of 757 schoolchildren from several General Schools of Braşov Municipality, following conclusions can be formulated:

- 30,67% of the schoolchildren from the 14 years age group are consuming sweets between main meals (Table 11 a and 12 a),

- 14,89% of the schoolchildren from the 13 years age group are consuming fast-food, once a day (Table 13 b and 14 b)

- 8% of the girls do not practice free time activities (Table 21 d and 22 d),

- A high percentage of schoolchildren who spend more than 4 hours a day in front of the computer or TV set (Table 23 c and 24 c).

- adopting an inadequate lifestyle by most schoolchildren as they approach the second stage of puberty period..

The absence of conscientization programmes for schoolchildren, parents, teaching and medical staff regarding the negative effects of inadequate lifestyles, lead to increased numbers of those exposed to greater risk for developing excess weight and cardiovascular diseases.

## RECOMMENDATIONS

1. The inadequate food habits should be assessed by identifying caloric excess foods.
2. Reducing and eliminating sedentarism in pubertal schoolchildren.
3. Involving schools in programmes that promote healthy foods.

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## THE ROLE OF PHYSICAL EXERCISES IN THE TREATMENT OF THE OBESITY AT CHILDREN

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### Summary

*In the industrial countries the feeding up is a direct cause for the death of many persons, large amounts of money being used yearly for the food and for the utilization of different diets and means of losing weight, while in other sub-developed countries a considerable number of person die daily because of the malnutrition.*

*The endocrine diseases and, among them, specially obesity on purpose represents a health problem for the contemporary world.*

*An important alarm signal is represented by the lack of the movement and an inadequate food, specially for children. That's why the obesity installs at an early age and it is difficult to treat it.*

*Physical exercises are efficient means for controlling and treating this disease.*

**Keywords:** recovery, weight, program

### INTRODUCTION

Obesity in the childhood influences the health of the adult in 10-30% of cases. The probability for an obese child to become an obese adult is smaller if the period of time between the

beginning of the obesity and the mature age is longer, but the disease becomes more severe if it appears in the adolescence or it is the result of a familial pattern.

From an anthropometrical point of view: