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## **TYPE STANDARDS OF GIPSY SCHOOLCHILDREN IN THE CENTRAL SLOVAKIAN REGION**

**REZÜMÉ:** (Középszlovákiai iskolaköteles cigánygyerekek testmagasság és testtömeg standard értékei) A humánbiológia bizonyított tétele, hogy a gyermekek növekedése, érése az adott etnikum egyik jelentős mutatója. Vizsgálatunkban a 7--15 éves cigánygyerekek két testméretével foglalkozunk. Reprezentatív mintánkat a középszlovákiai terület járásaiból állítottuk össze. Méréseink eredményeit a statisztikai számítások alapján összeállított táblázatok, ábrák és görbék formájában prezentáljuk.

A középszlovákiai iskolaköteles cigánygyerekek testmagasság és testtömeg értékeit az adott életkorra elért normál-standard értékekben mutatjuk be.

The type standards for weight and height of Gipsy school-children in the Central Slovakian Region represent in their dependency upon the age certain development means limited by intervals in the standard zones.

The values we obtained may form the basis for further analysis or for the possible application.

When assessing the type standards for somatic development in Gipsy children living in the Central Slovakian region we took into account the verification of the fundamental and generally established biological regularities in the human organism - especially the regularities in the growth and development of healthy children.

Our research was carried out on the observation of Gipsy school-children. These children have in their development much better conditions than they had in the past. Gipsy population is not an original ethnic group of Slovakia, but this population makes up a numerous group of population. This ethnic group with its unique anthropological characteristic and rather different economic and social development joins at present the production and social life in our country. This results in the gradual incorporation of this group into our society. But on the other hand, this ethnic group is fully conscious of its ethnic origin, anthropological

differentiation, of its own language, of its common features, of its way of life and of its cultural activity. This social integration gradually changes into the assimilation and consolidation.

A half of the Gipsy population is represented by at the age of 15. This high percentage of Gipsy youth signalizes the relevancy of solving this question on various levels. One of these levels was the investigation focused on the assessing the standard data in the somatic development and on the body dispositions in the Gipsy youth. These data form the base for verifying and for setting out the principal and generally accepted biological regularities in human organism. In our research we concerned with the regularities of the growth and development in Gipsy children.

The share of Gipsy children in the total number of population in Slovak republic amount to 1. 1. 1978 about 3,9 % (189 989), out fo this, in the town of Bratislava it is 0,9 % (3207), in the West Slovakian region it is 2,6 % (42 621), in the Central Slovakian region it is 2,9 % (43 233), and in the East Slovakian region it amounts to 7,4 % (99 928).

The share of Gipsy school-children in total number of school-children indicates much more higher indices. The distribution of this share - as far as the whole Slovakia is concerned - amounts to 6,5 %, in the town of Bratislava it is 1,4 %, in the West Slovakian Region it is 4,3 %, in the Central Slovakian region it is 4,3 % and in East Slovakian region it is 11,8 %.

There are 46 627 Gipsy school-children at the age of 6--15 living in the Slovak republic (23 234 boys and 23 393 girls). The total number of Gipsy school-children amounts to 10 156 in the Central Slovakian region (4 949 boys and 5 207 girls.)

Within the frame work of our research we examined 689 Gipsy children at the age of 7--15. There are 330 girls and 359 boys examined in the course of our investigation. Our investigation was carried out at the beginning of 1978: in February, March and April.

Our research was carried out by the same team and possible errors appears to be quite negligible.

Founded on the results of the statistical characteristics we have calculated two body measurements for weight and for height. These measurements have been taken also individually, i. e. we have calculated the standard indices for weight and height in individuals. We have assessed the relation of these individuals to our survey. The values of standard indices may serve not only for the reciprocal comparison of interacting signs, but they may also serve for expressing the proportionality in individuals.

Table 1. Distribution of Gipsy population in the Central Slovakian region according to districts

Area (districts)	Gipsy population total	Men	Women	Gipsy school-child. total	Boys	Girls
B. Bystrica	4 977	2 552	2 425	1 259	648	611
Cadca	718	367	361	126	64	92
Dol. Kubín	161	79	82	28	12	16
L. Mikuláš	2 117	1 045	1 072	498	248	250
Lucenec	7 190	3 579	3 611	1 725	869	856
Martin	1 441	721	720	382	212	170
Pov. Bystrica	831	411	421	196	112	84
Prievidza	1 183	605	578	292	151	141
R. Sobota	14 094	6 832	7 262	3 165	1 422	1 743
Velky Krtís	2 568	1 247	1 321	654	313	341
Zvolen	4 616	2 302	2 314	975	476	499
Ziar n. Hronom	2 607	1 296	1 311	665	329	336
Zilina	729	370	359	191	93	98
Central Slov. region - total	43 233	21 406	21 827	10 156	4 949	5 207

To facilitate the analysis and for its possible application as well as for practical use of our results we have attained from our anthropological research we have worked out so called standard type zones for weight and height. We have calculated these standards in the dependence upon the age.

In order to correct the relative large scale of the span variability in the individual age categories we have used two-thirds values of the conclusive deviation ( $0,67 S_x$ ). This deviation helped us in delimitating individual mean zones. For better illustration we have tabulated and presented in figures the developing curve in the type standard zones. Also the cross-sectional type standards were drawn up. We should like to point to the known fact that the growth culmination, especially in adolescent children is mostly characterized by its high individual variability. Consequently, it may come about that the premature growing up children in the controlled population may reach the upper extreme zone, and on

the contrary the children showing certain signs of retardation in their development may remain deeply below the average. As far as this phenomenon appears to be of a transient character the individual in the course of one or two years may reach the normal mean zone. If this normal zone has not been reached by the individual the deep analysis shows to be necessary.

To delimitate the type standard zones we have elaborated tables for weight and for height respectively. These anthropological data were tabulated separately for boys and for girls. They were at the age of 7–15 (Table 2–5). With each mean value for weight and height respectively we have set out measures for conclusive deviation and the interval limited by  $\bar{X} \pm 0,67 Sx$ . This interval according to our calculation represents at the significance level  $p=0,01$  normal values and the interval limited by  $\bar{X} \pm 3 (0,67 Sx)$  represents critical values.

Type standard zones for weight and height were assessed in the dependence upon the age. These zones represent specific developing means limited by above mentioned intervals. The interval limited by  $2/3$  deviation includes the zone indicating the values of individuals showing a normal development of weight and height respectively. The next zone limited by  $\bar{X} \pm 3 (0,67 Sx)$  includes the below the average values, as well as the above the average values of individuals. These values are limited by extreme values in individual age categories.

On the basis of the results we obtained in the course of our investigation we have elaborated the type standard zones. These standard zones have been worked out in the relation to the weight and to the height of the children. This relation is has been presented in the form of developing curves (Figures 1–4).

Founded on the results of our analysis we have postulated and set out the standards for somatic development of Gipsy school-children living in the area of the Central Slovakian region. We have come to the conclusion that the Gipsy school-children of today attain certain heights and weights sooner than did those of the same age 20 years ago. This phenomena may be ascribed to the phenomena of acceleration or it may be just a discontinuance of earlier retardation reflecting the conditions prevailing in times subsequent to World War II. Consequently, the general improvement in the factors of environment and better nutrition the Gipsy school-children are given in our socialist country has found expression in the higher values of height and weight, as well as in more rapid growth and development of these children.

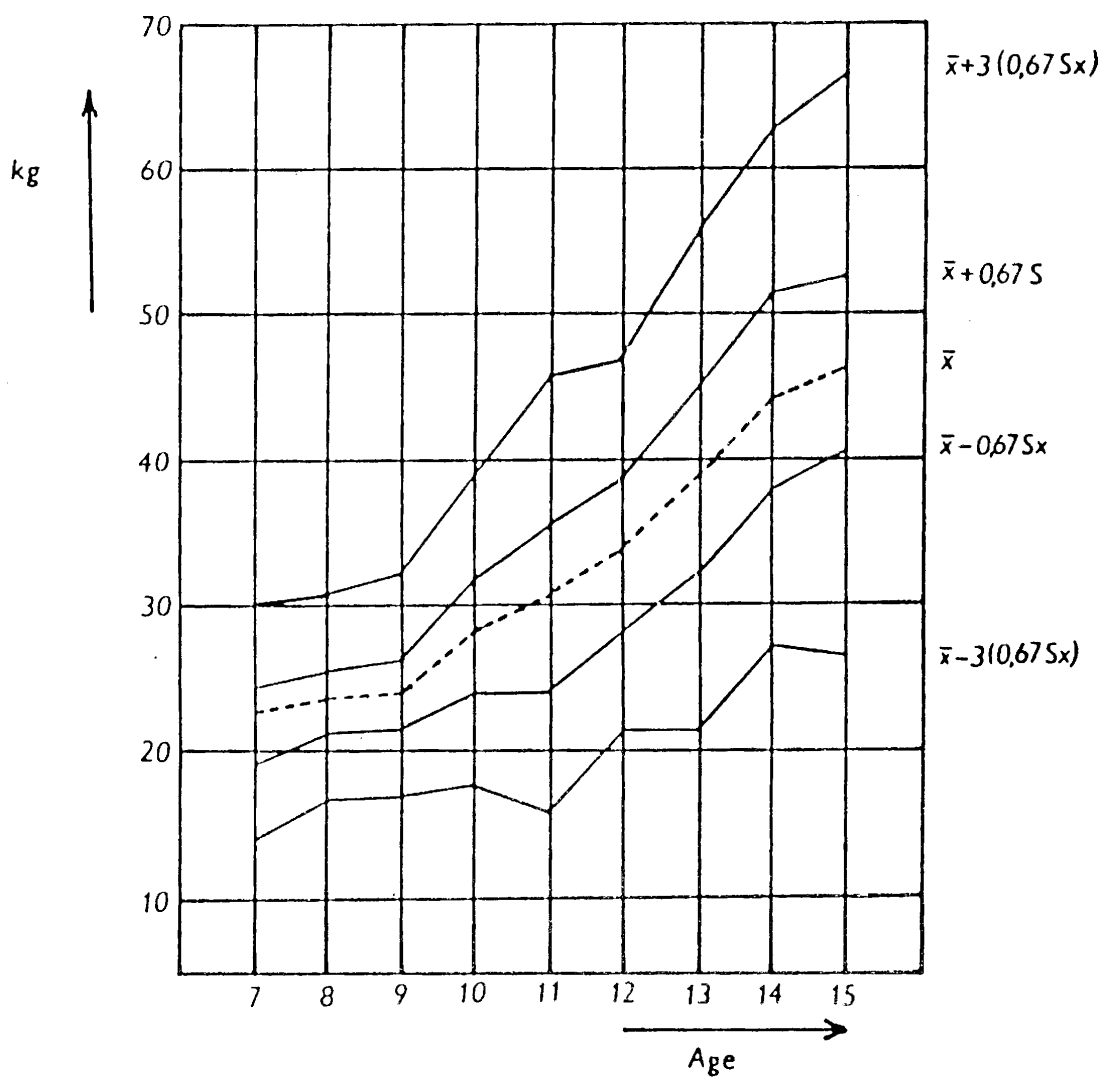


Figure 1. Crocc-sectional type zones for Weight according to the age - boys

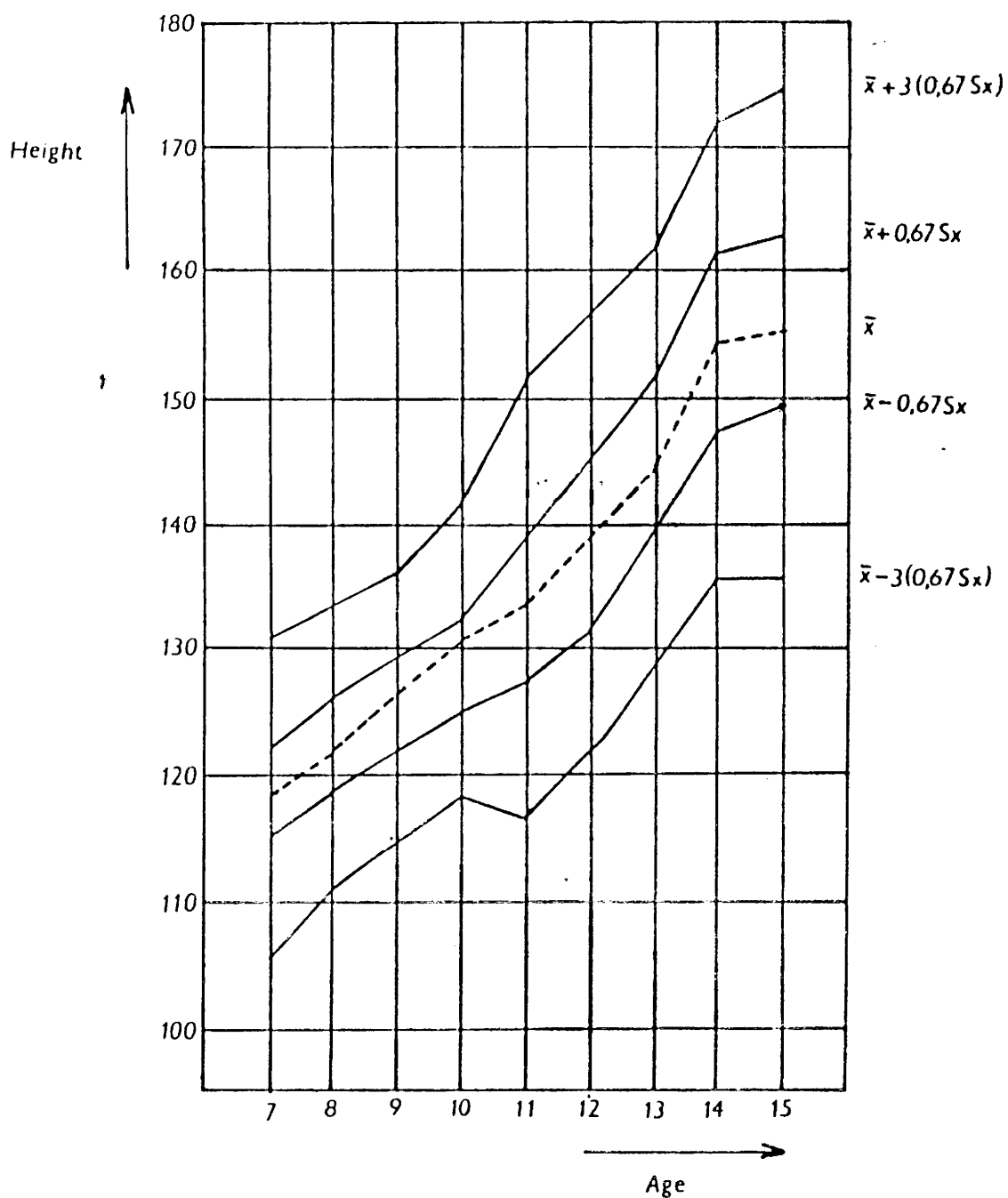


Figure 2. Cross-sectional type zones for Height according to the age - boys

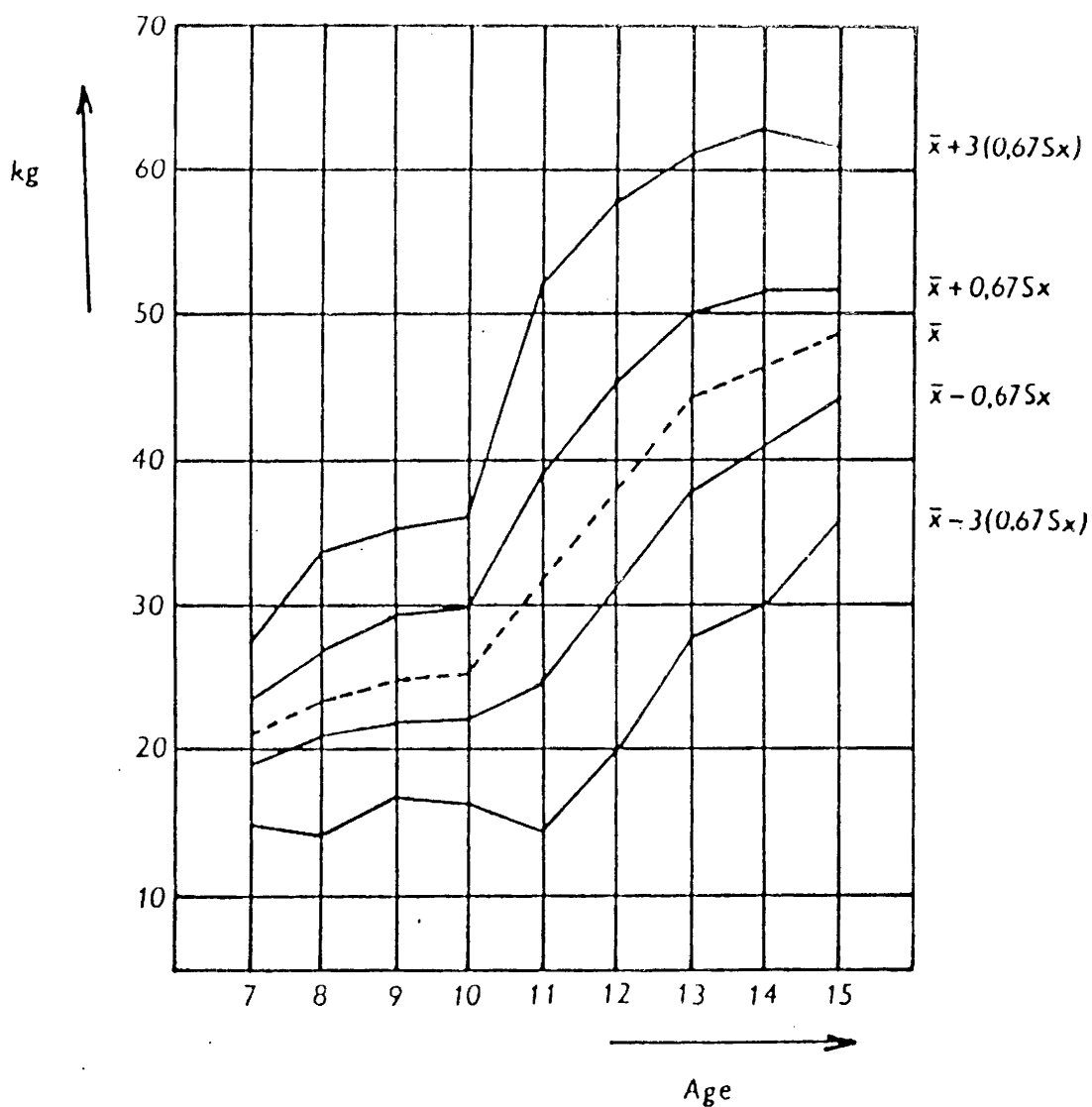


Figure 3. Cross-sectional type zones for Weight according to the age - girls

When assessing the type standards for somatic development we took into account the verification of the principal a generally established biological regularities in the human organism, especially the regularities in the growth and development in healthy children.

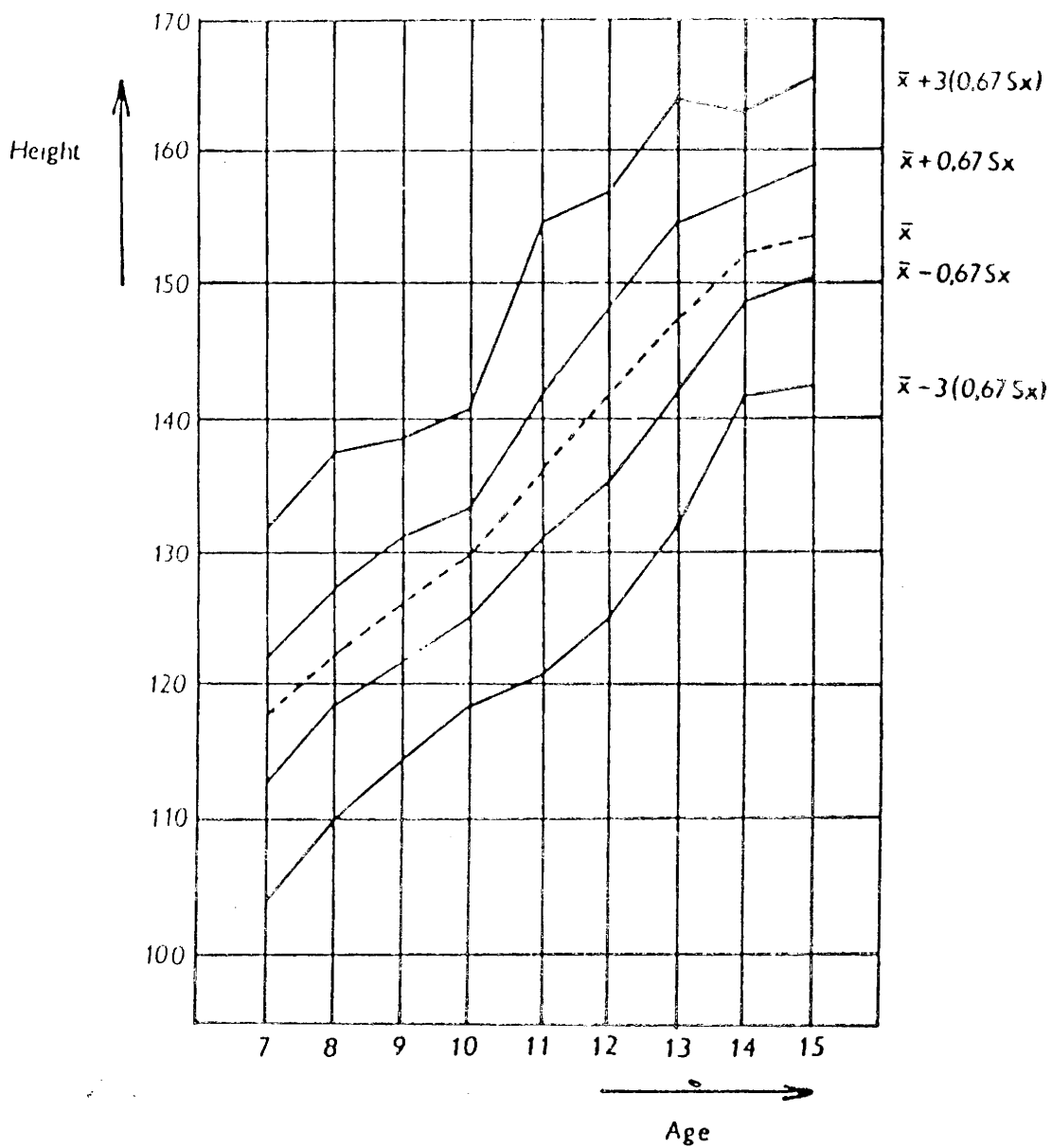


Figure 4. Cross-sectional type zones for Height according to the age - girls



Table 2. *Standard Zone for Weight according to the Age - Boys*

Age	X	Sx	0,67 Sx	$\bar{X}-3$ (0,67Sx)	$\bar{X} -$ -0,67Sx	$\bar{X} +$ +0,67Sx	$\bar{X} + 3$ (0,67Sx)
7	22,00	4,01	2,69	13,93	19,31	24,69	30,07
8	24,34	3,23	2,16	17,86	22,21	26,50	30,82
9	25,03	3,62	2,43	17,74	22,60	27,46	32,32
10	29,03	5,24	3,51	18,50	25,52	32,54	39,56
11	30,80	7,58	5,08	15,56	25,72	35,88	46,04
12	33,98	6,66	4,46	20,60	29,52	38,44	47,36
13	39,06	9,04	6,06	20,88	33,00	45,12	57,24
14	45,54	8,91	5,97	27,63	39,57	51,51	63,46
15	46,95	9,86	6,61	27,12	40,34	53,56	66,78

Table 3. *Standard Zone for Height according to the Age - Boys*

Age	X	Sx	0,67 Sx	$\bar{X}-3$ (0,67Sx)	$\bar{X} -$ -0,67Sx	$\bar{X} +$ +0,67Sx	$\bar{X} + 3$ (0,67Sx)
7	117,33	6,85	4,59	103,56	112,74	121,92	131,10
8	122,59	5,62	3,77	111,28	118,82	128,36	133,90
9	126,07	5,48	3,67	115,06	122,40	129,74	137,08
10	130,07	5,73	3,84	118,55	126,23	133,91	141,59
11	134,03	8,35	5,59	117,26	128,44	139,62	150,80
12	139,39	8,68	5,82	121,93	133,57	145,21	156,85
13	145,78	8,30	5,56	129,10	140,22	151,34	162,46
14	155,07	9,19	6,16	136,59	148,91	161,23	173,55
15	156,83	9,90	6,63	136,94	150,20	163,46	176,72

Table 4. *Standard Zone for Weight according to the Age - Girls*

Age	$\bar{X}$	Sx	0,67 Sx	$\bar{X}-3$ (0,67Sx)	$\bar{X} -$ -0,67Sx	$\bar{X} +$ +0,67Sx	$\bar{X} + 3$ (0,67Sx)
7	20,52	2,84	1,90	14,82	18,62	22,42	26,22
8	24,27	4,73	3,17	14,76	21,10	27,44	33,78
9	26,47	4,87	3,26	16,69	23,21	29,73	36,25
10	26,58	4,96	3,32	16,62	23,26	29,90	36,54
11	32,21	9,24	6,19	13,74	26,12	38,50	50,88
12	38,24	9,21	6,17	19,73	32,07	44,41	56,75
13	43,91	8,36	5,60	27,11	38,31	49,51	60,71
14	46,56	8,19	5,49	30,09	41,07	52,05	63,03
15	48,63	6,27	4,20	36,03	44,43	52,83	61,23

Table 5. *Standard Zone for Height according to the Age - Girls*

Age	$\bar{X}$	Sx	0,67 Sx	$\bar{X}-3$ (0,67Sx)	$\bar{X} -$ -0,67Sx	$\bar{X} +$ +0,67Sx	$\bar{X} + 3$ (0,67Sx)
7	116,65	7,03	4,71	102,52	111,94	121,36	130,78
8	123,37	6,84	4,58	109,63	118,79	127,96	137,11
9	126,50	6,09	4,08	114,26	122,42	130,58	138,74
10	129,33	5,57	3,73	118,14	125,60	133,06	140,52
11	136,66	8,13	5,45	120,31	131,21	142,11	156,01
12	142,32	8,28	5,55	125,67	136,77	147,87	158,97
13	148,92	8,22	5,51	132,39	143,41	154,43	165,45
14	152,76	5,32	3,56	142,08	149,20	156,32	163,44
15	154,67	6,19	4,15	142,22	150,52	158,82	167,12

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