

Changes in the Nose with Growth on 7-17-Year-Old Schoolchildren from Sofia

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The results presented constitute a part of a complex anthropological study on 7-17-year-old schoolchildren from Sofia. Age changes of four nose sizes, the nose index and shape have been traced as a result of 3602 individual measurements — 1778 for the boys and 1824 for the girls. Most intensely pronounced are changes in the breadth and depth of the nose in both sexes. The per cent of the of the concave noses decreases with age while the per cent of the convex noses increases. Intersexual differences are most clearly expressed in the nose breadth as early as the age of 7.

Key words: nose, schoolchildren, age changes, intersexual differences.

Introduction

The nose is an important trait of the morphological characteristics of human face. Investigating in children and adolescents represents a special interest [1, 2, 4, 5, 6].

The aim of the present study is to trace the dynamics of age changes of four sizes and shape of the nose between the ages of 7 to 17, to record the rate of growth of the features under study and to detect the intersexual differences.

Material and Methods

The subject of the study realized as a mixed one (longitudinal-transversal) are schoolchildren aged between 7 and 17 years from five schools of Sofia. A total of 3602 individual measurements — 1778 for the boys and 1824 for the girls aged 7-17 years from five Sofia schools have been carried out after the classical method [3]. The age changes in the height, length, depth and breadth of the nose, the nose index and shape of the nose have been traced and analyzed. The methods of the t-criterion and χ^2 -test have been used in the comparative analysis.

Results and Discussion

The mean values of the studies sizes of the nose grow unevenly between the ages 7 and 17 in both sexes (Table 1). The height and length of the nose in boys grow most intensely between 11 and 13 years of age and especially between 13 and 15 and in girls — 9 and 11, especially between 11 and 13. At 17 the height and length of the nose in the boys has reached 94,8% and 93,8% of the mean values for adult Bulgarians and in the girls this fact is recorded as early as 11-12 years of age. The nose depth in both sexes reaches the values for the grown-up Bulgarians as early as 10-11 years of age. The nose index in the 7 to 17-year-old boys displays the limit values of the leptorrhin-mesorrhin categories while with the girls it is in leptorrhin category. The intersexual differences in the height and length of the nose are best pronounced between 14 and 17 ($P < 0,001$), in the nose breadth as early as 7 years of age ($P < 0,001$) and in the nose depth — between 8 and 12 and 16 and 17 years of age ($P < 0,01$). The per cent of concave noses decreases with age but straight noses prevail. Between 15 and 17 the per cent of the convex noses considerably increases as well. Intersexual differences are insignificant in the nose form ($P > 0,05$).

Conclusions

The period under study — from 7 to 17 years of age is characterized with dynamic changes expressed by the more rapid growth of the nose breadth and depth as compared with its height and length. The per cent of the concave noses is decreasing while the one of the convex noses increases. The intersexual differences are best marked in the nose breadth as early as the 7-year-old children.

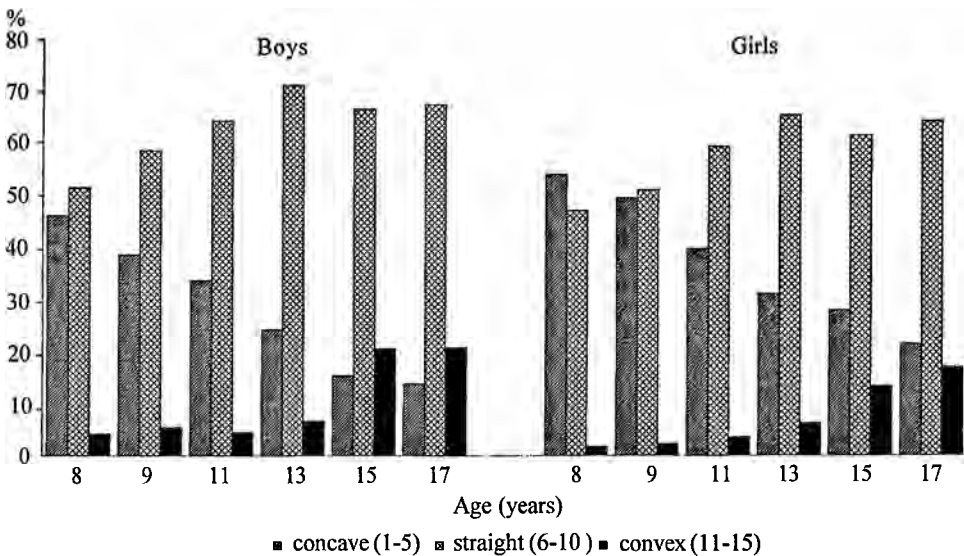


Fig. 1. Age changes in the nose shape

Table 1. Age changes in the nose measurements and in the nose index

FEATURE	AGE (years)	BOYS			GIRLS		
		<i>n</i>	\bar{X}	SD	<i>n</i>	\bar{X}	SD
Nose height	7	182	44.07	3.00	177	43.32	2.75
	8	190	44.49	2.90	182	44.09	2.84
	9	189	45.41	2.88	181	44.79	2.75
	10	190	46.02	3.00	186	45.59	2.93
	11	183	46.53	2.83	204	46.18	3.07
	12	172	47.73	3.08	190	47.38	3.12
	13	166	49.18	3.32	184	48.39	3.01
	14	139	49.96	3.65	138	48.15	3.19
	15	124	52.06	3.89	137	48.83	2.98
	16	133	51.69	3.13	127	48.64	2.88
	17	118	52.70	3.11	137	49.03	3.16
Nose length	7	182	41.44	3.17	177	40.72	2.97
	8	190	41.59	3.17	182	41.28	3.00
	9	189	42.64	3.75	181	42.04	2.99
	10	190	43.46	3.16	186	43.08	3.07
	11	183	44.24	2.92	204	44.15	3.11
	12	172	45.50	3.18	190	45.54	3.13
	13	166	47.11	3.46	184	46.55	3.01
	14	139	48.15	3.81	138	46.44	3.35
	15	124	50.13	3.78	137	46.93	3.09
	16	133	49.96	3.21	127	47.13	2.78
	17	118	50.92	3.16	137	47.31	3.25
Nose depth	7	182	12.48	1.38	177	12.62	1.51
	8	190	12.87	1.44	182	13.31	1.62
	9	189	14.38	1.40	181	14.71	1.66
	10	190	15.17	1.38	186	15.58	1.68
	11	183	16.02	1.68	204	16.60	1.82
	12	172	17.42	1.53	190	17.98	1.89
	13	166	18.39	1.75	184	18.70	1.86
	14	139	18.80	2.00	138	18.91	1.94
	15	124	19.58	2.52	137	19.43	1.94
	16	133	19.74	1.90	127	18.45	1.82
	17	118	20.28	2.06	137	19.26	1.88
Nose breadth	7	182	29.34	1.84	177	28.47	1.86
	8	190	30.99	1.82	182	30.04	1.83
	9	189	31.93	1.73	181	30.99	1.75
	10	190	32.48	1.64	186	31.94	1.72
	11	183	32.66	1.73	204	32.14	1.91
	12	172	33.48	1.85	190	32.98	1.89
	13	166	34.14	1.88	184	33.44	1.89
	14	139	34.55	2.07	138	33.03	1.87
	15	124	35.42	1.91	137	33.14	2.00
	16	133	35.71	2.24	127	32.65	1.77
	17	118	35.79	2.10	137	33.11	2.10
Nose index	7	182	66.85	5.79	177	65.95	5.66
	8	190	69.92	5.74	182	68.39	5.79
	9	189	70.57	5.58	181	69.46	5.82
	10	190	70.86	5.71	186	70.32	5.70
	11	183	70.42	5.40	204	69.88	6.12
	12	172	70.41	5.63	190	69.90	5.97
	13	166	69.72	5.75	184	69.34	5.62
	14	139	69.50	6.38	138	68.92	6.35
	15	124	68.45	6.66	137	68.14	6.14
	16	133	69.39	6.64	127	67.40	5.86
	17	118	68.20	6.25	137	67.82	6.28

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