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## GENDER-AGE PECULIARITIES OF CHILD VEGETATIVE NORMS IN JUNIOR SCHOOL AGE

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*В статті наведені статевовікові нормативи для функціонально-вегетативної діагностики дітей молодшого шкільного віку. Зроблений висновок про їх ідентичність для всіх груп 7-11 років.*

**Ключові слова:** функціонально-вегетативна діагностика, статевовікові нормативи, молодший шкільний вік.

*The article presents the sex and age standards for functional-vegetative diagnosis of primary school age. The conclusion of their identity for all groups of 7-11 years.*

**Keywords:** functional-vegetative diagnosis, sex and age ratios of primary school age.

*В статье приведены возрастные нормативы для функционально-вегетативной диагностики детей младшего школьного возраста. Сделан вывод об их идентичности для всех групп 7-11 лет.*

**Ключевые слова:** функционально-вегетативная диагностика, половые и возрастные нормативы, младший школьный возраст

**Actuality of the issue.** According to the recommendations of the World Health Organization (WHO), electropunctural diagnostics and "reflex therapy" should become one of the bases of the rehabilitation medicine (International Council of WHO, Yerevan, 19.0.2003) [1,2,3,4,6,7]. The Fifth Summit of WHO (16.11.2010) officially recognized the role of the traditional Zhenjiu therapy (ZhT) and revealed information about its registration in UN [8]. At the same time, WHO announced the strategy within the area of complementary medicine for the period of 2014-2033 and addressed states-participants with the recommendation to adapt their national programs on health protection and rehabilitation during the World Assembly on health protection (11.04.2014) [5].

Today, it is known about the previously unknown discovery, which was made in Ukraine, "Human functional-vegetative system" (HFVS) [9-15], that confirms the biophysical reality of "acupunctural channels" of the traditional Zhenjiu therapy (ZhT), their direct relation to the vegetative homeostasis and requires its place in systemic physiology, and revision of the contemporary educational and rehabilitational programs. The scientific-research paper is a fragment of the Program "Two-stage system of functional rehabilitation of children, living within the zone of ecological control of Ukraine", has no analogues and is executed according to the Orders of Cabinet of Ministers of Ukraine №12010/87.

**Aim and the means of the research.** The aim of the research is to elaborate gender-age norms of child functional-vegetative health in junior school age on the basis of "Functional-vegetative diagnostics" (FVD) according to V.G. Makats [13], which is recommended for the practical use in rehabilitation practice by the conclusion of the Scientific Council of the Ministry of Health Protection of Ukraine and its thematic committees: Pediatrics, Obstetrics and Gynecology, Quantum medicine, Hematology and Transfusiology, New medical technology and new means for diagnostics (protocol № 5, 25.12.1991; protocol № 1.08-01, 11.09.1994). The analysis of the experimental data was conducted on the basis of the original package of software "Search", the liability of the indices was assessed by means of parametric and non-parametric statistics using computer technologies. Estimation of gender-age norms and the analysis of systemic-vegetative dependency employed international acupunctural nomenclature (IAN), which is proposed by WHO (see Table 1) and the levels of functional-vegetative equilibrium:

Table 1

Diagnostic Representative FAZ

Traditional channel	IAN *	FN	Traditional channel	IAN *	FN
Lungs	LU	P	Urinary bladder	BL	V
Large intestine	LI	GI	Kidney	KI	R
Stomach	ST	E	Pericardium	PC	MC
Spleen – Pancreas	SP	RP	Triple energizer	TE	TR
Heart	HT	C	Gall bladder	GB	VB
Small intestine	SI	IG	Liver	LR	F

\*IAN - *International Acupuncture Nomenclature (WHO)*;  
FN - *its French analogue*.

PA-s (significant prevalence of parasympathetic activity); PA-e (expressed prevalence of parasympathetic activity); FcP (functional compensation of parasympathetic activity); VE (vegetative equilibrium); FcS (functional compensation of sympathetic activity); SA-e (expressed prevalence of sympathetic activity); SA-s (significant prevalence of sympathetic activity) [13].

**Experimental part.** The experiment was conducted in the resort conditions of the controlled health improvement of

children, who had been sent under health improvement program “Two-stage rehabilitation of vegetative disorders of children, living within the zone of radiation (ecological control of Ukraine” (Order of the Cabinet of ministers of Ukraine № 12010/87). It requires a detailed experimental-archive analysis of its rehabilitational efficiency. At the same time, the primary focus falls upon the necessity of functional-vegetative analysis throughout the group of junior school age (7-11) years.

The archive-experimental material, which was introduced for the analysis, contained information about the supervision of 14.456 children during the period of 1984-2009. 4464 children of junior school age were selected from the mentioned number of supervisions. The selected group included 2312 female and 2152 male representatives. 4025 children lived within the regions of ecological (radiation) control, according to the factor of the radiation dose of thyroid gland, which did not exceed the levels established by the Ministry of Health Protection of Ukraine. 439 children lived within RELATIVELY CLEAN regions of Ukraine.

### Gender-age norms of FVD of children of junior school age (7-11 years).

Practice indicates that gender-age peculiarities of norms of functional-vegetative diagnostics of junior school age individuals (JSAI) require specification. We noticed the reasonability of their revision within the mixed gender-age group, as well as within the groups that were formed by different age. The experimental group included 1120 children with the coefficient of vegetative equilibrium (c-VE) 0,94-1,06 (margins of the “zone of vegetative equilibrium”). There were 581 participants in the female group and 539 in the male group. The average systemic-age norms across separate functional systems (LU, PC, HT, SI, TE, LI, SP, LR, KI, BL, GB, ST) are represented in % (second line in the table of norms). The processing of the substantial volume of the experimental materials and their analysis testifies to the following.

The comparison of the histograms of the norms (fig.2-4) with the age-and-gender mixed histogram (fig.1) did not indicate liable average systemic-norm differences. This fact points out their identity across female and male groups of junior school age.

We decided to address the issue of gender-age peculiarities of the norm of FVD across different ages. The conducted calculations (by means of specific computer software) and the systemic functional-vegetative analysis of the received materials across separate ages in female and male groups indicate the standard character of the systemic dependency under the conditions of the average physiological norm (fig. 4-8 across the female group; fig. 9-13 across the male group). The only criterion of the assessment of

the state of functional health of the junior age children was the coefficient of the vegetative equilibrium (c-VE), which points to the satisfactory (or poor) correlation of the sympathetic and parasympathetic activity. The deviance from the average zone of norm (0,95-1,05) points to the appropriate parasympathetic, or sympathetic functional-vegetative prevalence.

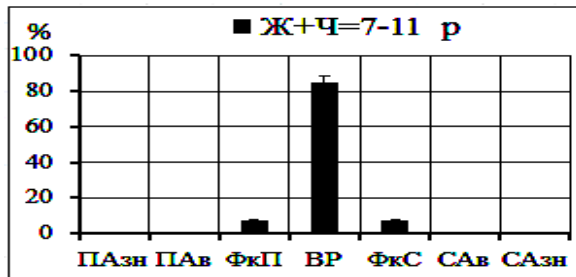


Fig.1 The mixed gender-age group of JSA – 1120 children of both genders. The specific dispersion of the vegetative levels and the norm activity of separate functional systems (in %)...

k VG	LU	PC	HT	SI	TE	LI	SP	LR	KI	BL	GB	ST
1,00	8,28	7,40	7,75	9,39	6,79	7,80	11,16	7,34	8,18	11,53	6,59	7,80

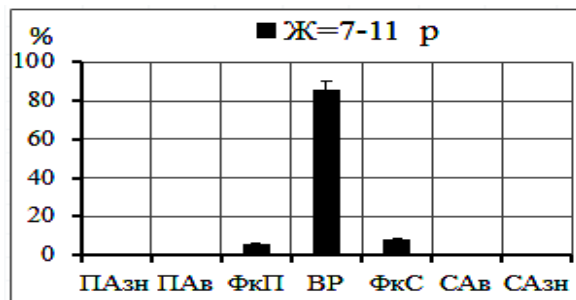
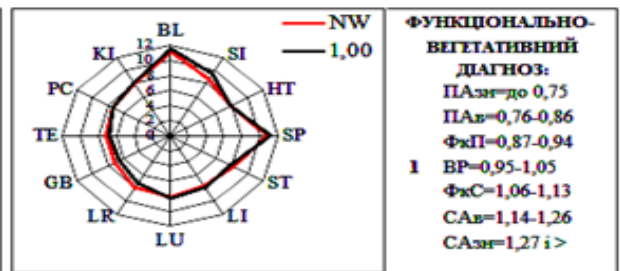
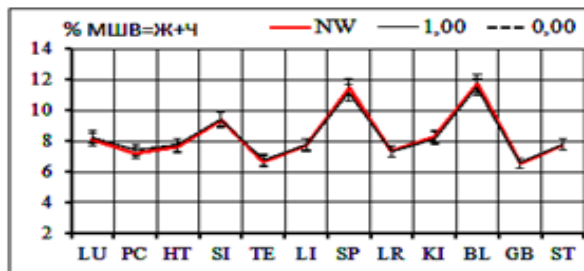


Fig.2 The mixed by gender female (male) norm group of JSA – 581 child. The specific dispersion of the vegetative levels and the norm activity of separate functional systems (in %)...

k VG	LU	PC	HT	SI	TE	LI	SP	LR	KI	BL	GB	ST
1,00	8,10	7,21	7,62	9,43	6,69	7,74	11,52	7,34	8,28	11,72	6,58	7,78

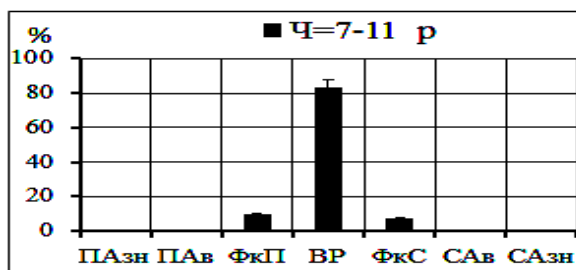
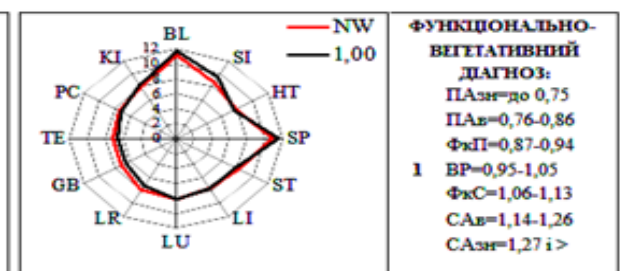
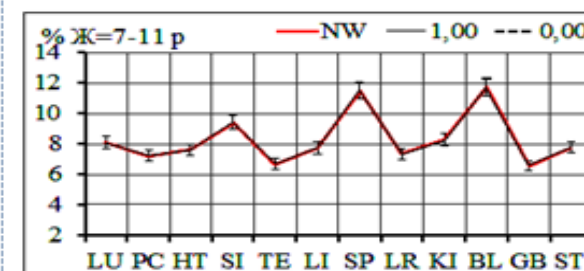
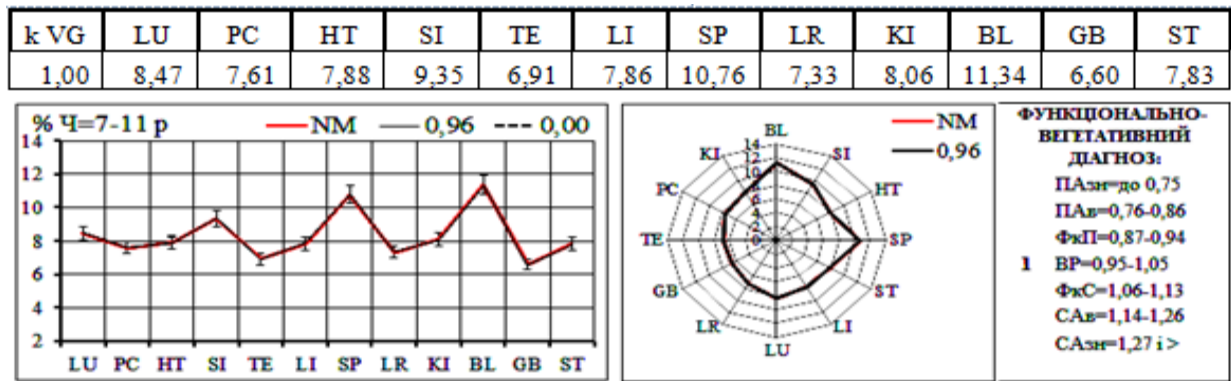


Fig.3 The mixed by gender female (male) norm group of JSA – 539 child. The specific dispersion of the vegetative levels and the norm activity of separate functional systems (in %)...



**NORMS OF THE FEMALE GROUPS OF THE JUNIOR SCHOOL AGE (BY AGE)**

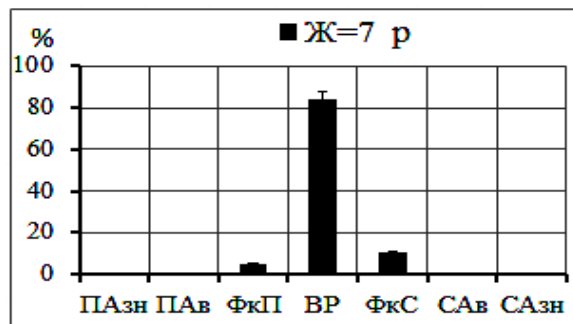


Fig.4 Female norm group of JSA – 56 children of 7 years of age. The dispersion of vegetative levels and norm activity of separate functional systems...

k VG	LU	PC	HT	SI	TE	LI	SP	LR	KI	BL	GB	ST
1,00	7,35	7,31	7,34	8,06	7,15	7,89	10,82	8,09	9,18	11,22	7,28	8,32

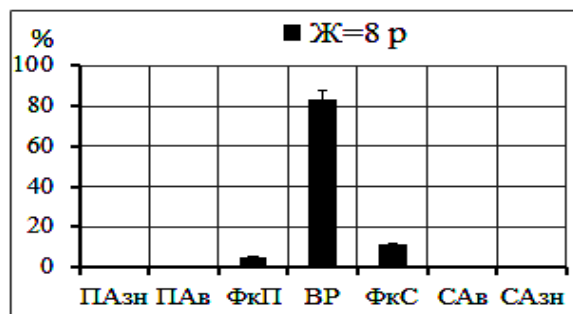
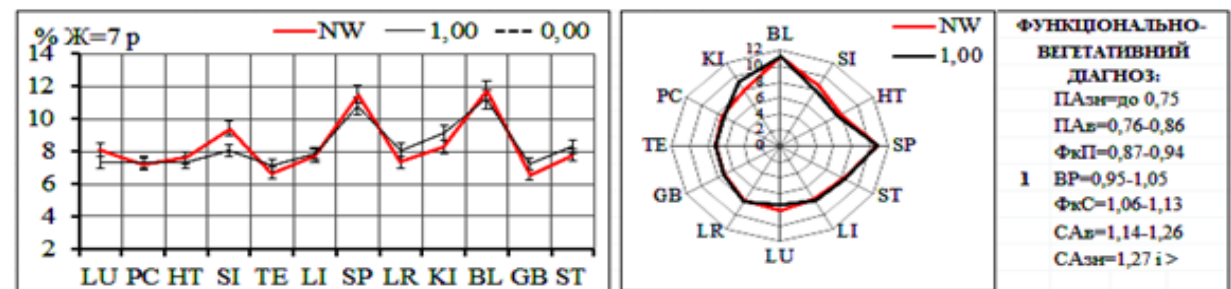
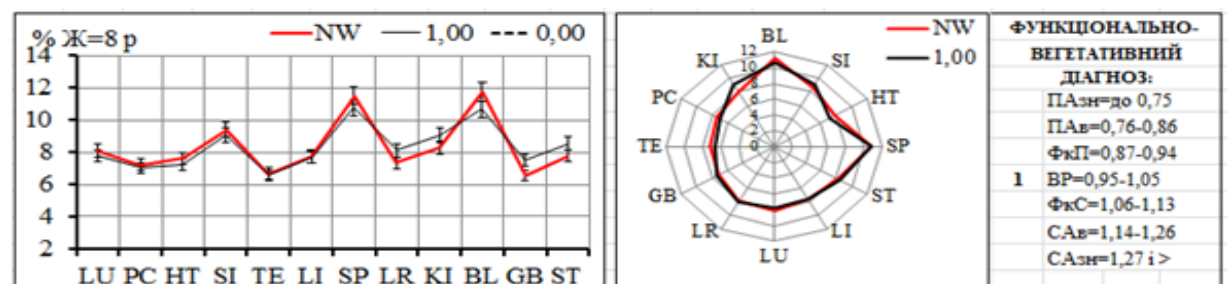


Fig.5 Female norm group of JSA – 104 children of 8 years of age. The dispersion of vegetative levels and norm activity of separate functional systems...

k VG	LU	PC	HT	SI	TE	LI	SP	LR	KI	BL	GB	ST
1,00	7,80	7,02	7,23	9,04	6,58	7,68	10,76	8,11	9,08	10,67	7,50	8,54





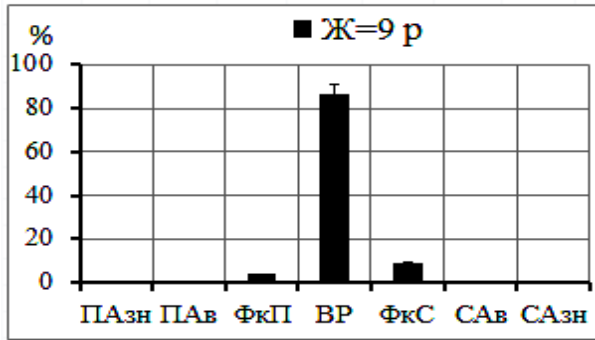
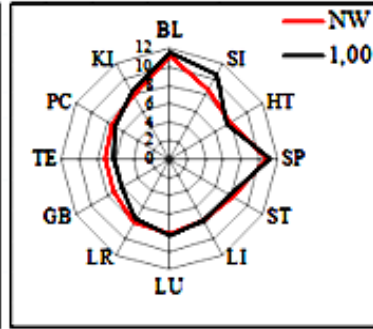
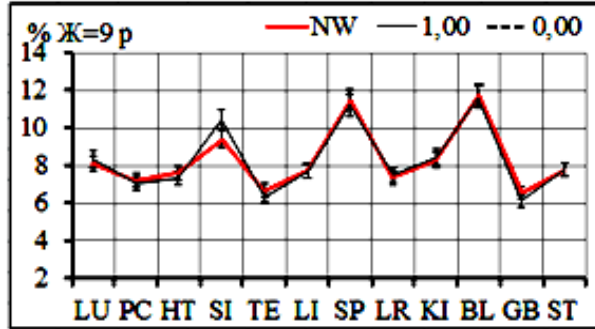


Fig.6 Female norm group of JSA – 129 children of 9 years of age. The dispersion of vegetative levels and norm activity of separate functional systems...

k VG	LU	PC	HT	SI	TE	LI	SP	LR	KI	BL	GB	ST
1,00	8,33	7,06	7,37	10,46	6,33	7,69	11,21	7,51	8,47	11,63	6,12	7,80



**ФУНКЦИОНАЛЬНО-ВЕГЕТАТИВНЫЙ ДИАГНОЗ:**  
 ПА3Н=до 0,75  
 ПАВ=0,76-0,86  
 ФкП=0,87-0,94  
 ВР=0,95-1,05  
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 САВ=1,14-1,26  
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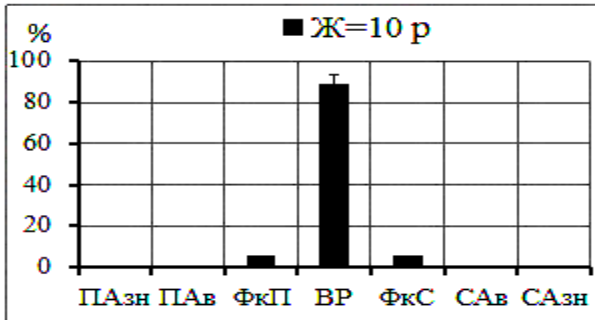
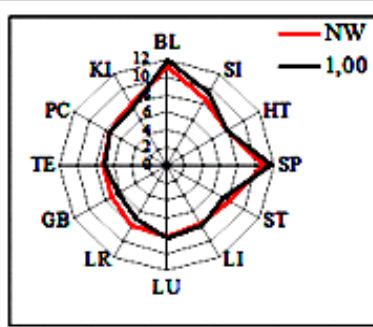
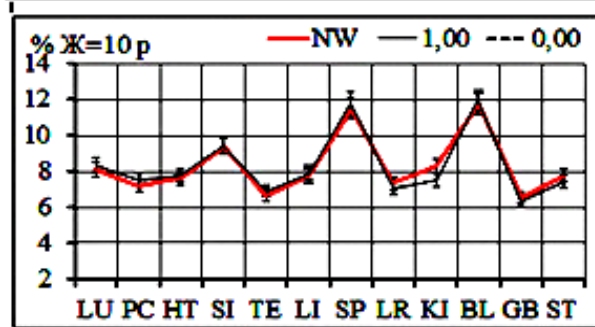


Fig.7 Female norm group of JSA – 166 children of 10 years of age. The dispersion of vegetative levels and norm activity of separate functional systems...

k VG	LU	PC	HT	SI	TE	LI	SP	LR	KI	BL	GB	ST
1,00	8,35	7,52	7,78	9,44	6,91	7,92	11,82	7,06	7,49	11,95	6,37	7,41



**ФУНКЦИОНАЛЬНО-ВЕГЕТАТИВНЫЙ ДИАГНОЗ:**  
 ПА3Н=до 0,75  
 ПАВ=0,76-0,86  
 ФкП=0,87-0,94  
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 СА3Н=1,27i>

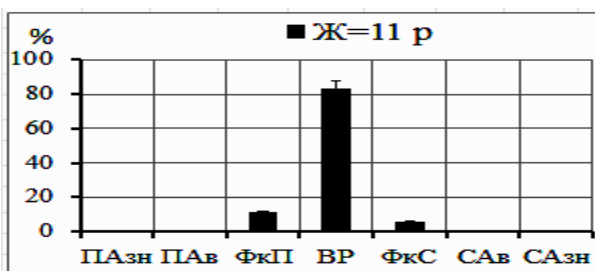
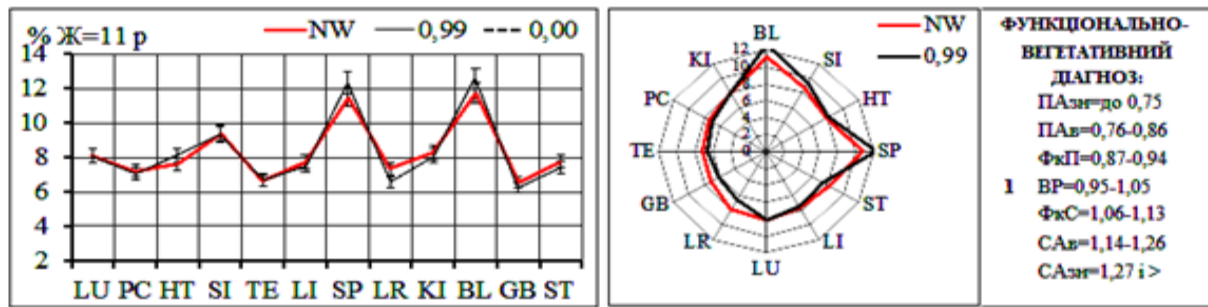


Fig.8 Female norm group of JSA – 126 children of 11 years of age. The dispersion of vegetative levels and norm activity of separate functional systems...

k VG	LU	PC	HT	SI	TE	LI	SP	LR	KI	BL	GB	ST
0,99	8,11	7,07	8,11	9,30	6,66	7,55	12,37	6,57	8,07	12,58	6,23	7,39



**NORMS OF THE MALE GROUPS OF THE JUNIOR SCHOOL AGE (BY AGE)**

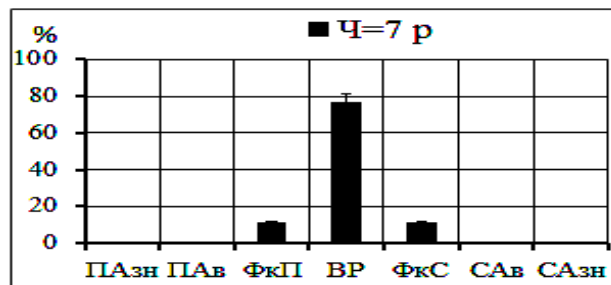


Fig9 Male norm group JSA – 61 children of 7 years of age (fig. 9). The dispersion of the vegetative levels and norm activity across functional systems... (fig.9-13).

k VG	LU	PC	HT	SI	TE	LI	SP	LR	KI	BL	GB	ST
1,00	8,50	7,93	7,87	8,31	6,85	7,94	9,99	7,44	8,32	10,57	7,79	8,50

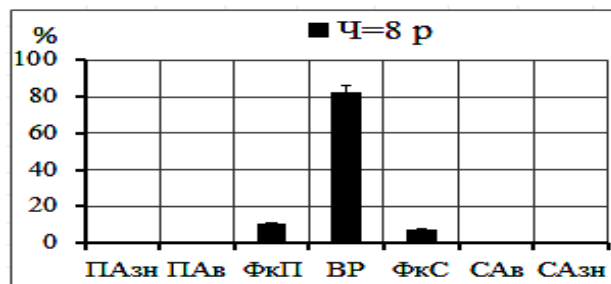
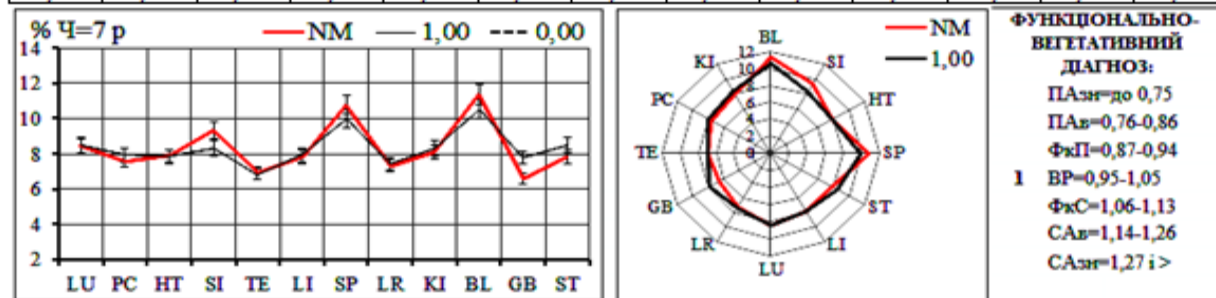
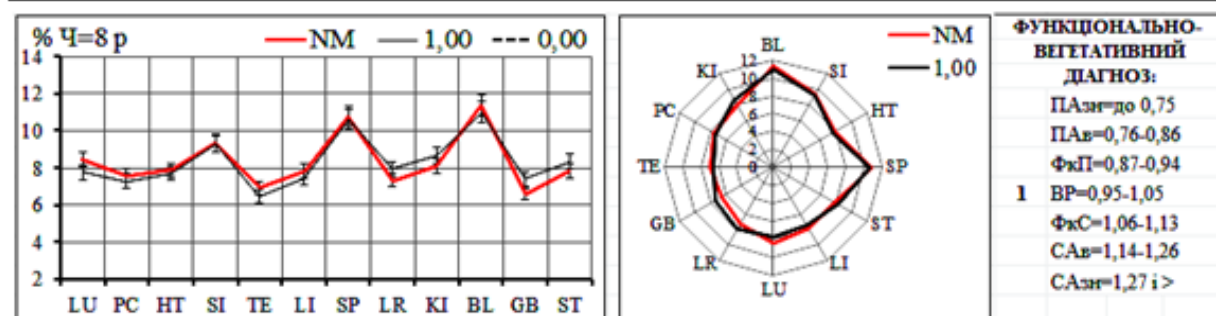


Fig10 Male norm group JSA – 96 children of 8 years of age. The dispersion of the vegetative levels and norm activity across functional systems...

k VG	LU	PC	HT	SI	TE	LI	SP	LR	KI	BL	GB	ST
1,00	7,76	7,30	7,71	9,28	6,48	7,45	10,59	7,95	8,69	11,01	7,40	8,36



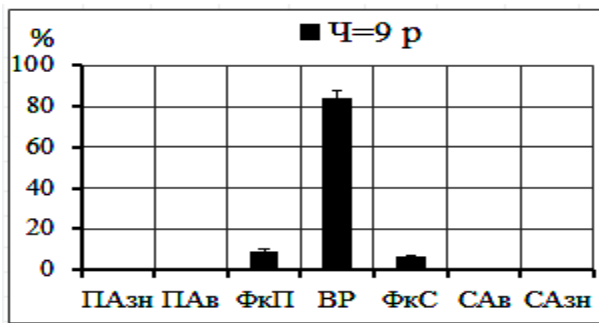
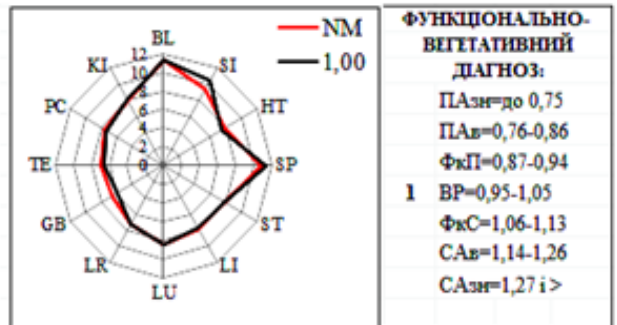
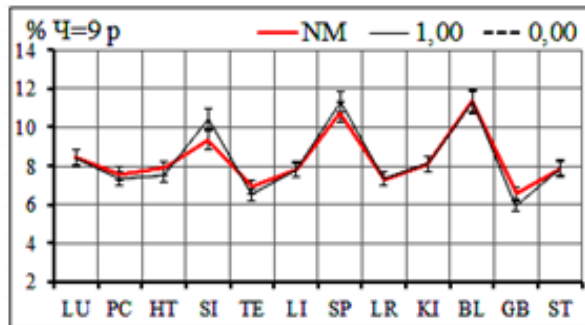


Fig.11 Male norm group JSA – 117 children of 9 years of age. The dispersion of the vegetative levels and norm activity across functional systems.

k VG	LU	PC	HT	SI	TE	LI	SP	LR	KI	BL	GB	ST
1,00	8,41	7,38	7,53	10,48	6,52	7,79	11,32	7,36	8,13	11,29	5,92	7,89



**ФУНКЦИОНАЛЬНО-ВЕГЕТАТИВНЫЙ ДИАГНОЗ:**  
 ПАЗн=до 0,75  
 ПАВ=0,76-0,86  
 ФкП=0,87-0,94  
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 САВ=1,14-1,26  
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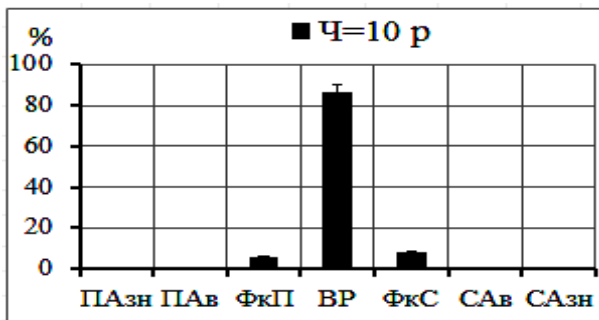
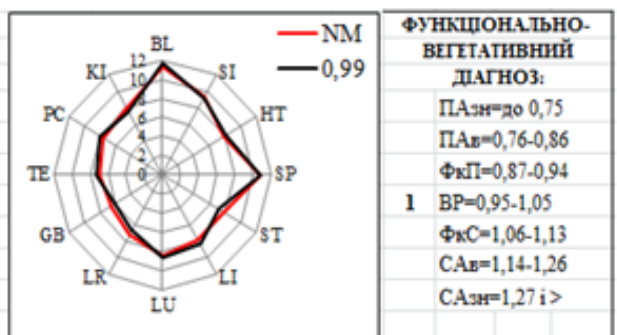
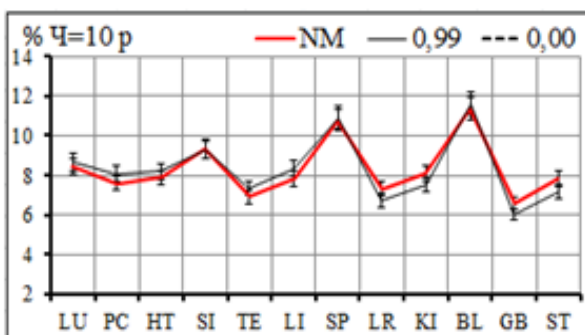


Fig.12 Male norm group JSA – 123 children of 10 years of age. The dispersion of the vegetative levels and norm activity across functional systems...

k VG	LU	PC	HT	SI	TE	LI	SP	LR	KI	BL	GB	ST
0,99	8,70	8,08	8,19	9,31	7,37	8,35	10,92	6,73	7,52	11,62	6,02	7,18



**ФУНКЦИОНАЛЬНО-ВЕГЕТАТИВНЫЙ ДИАГНОЗ:**  
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 ПАВ=0,76-0,86  
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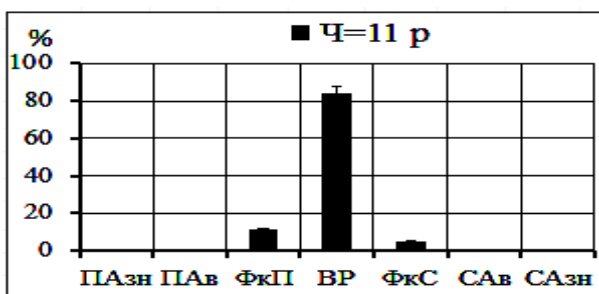
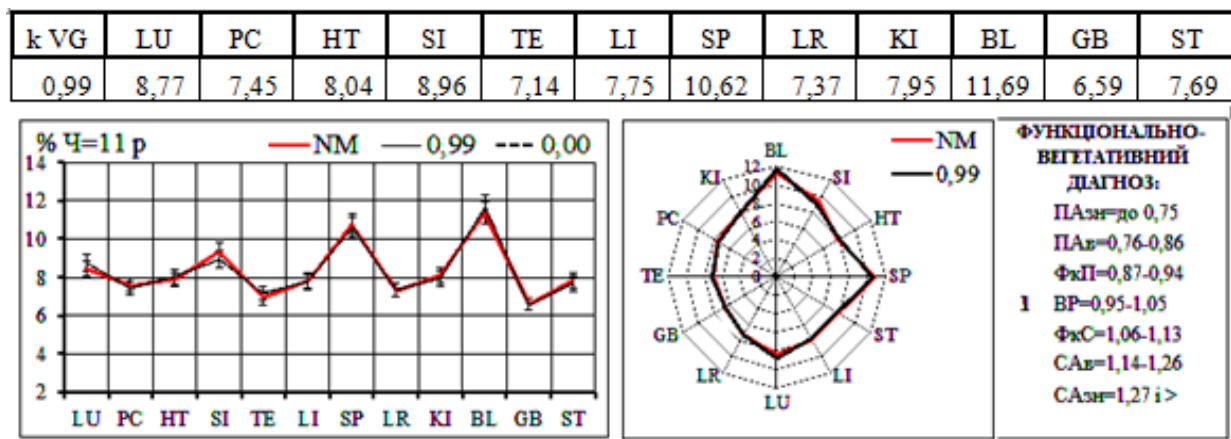


Fig.13 Male norm group JSA – 142 children of 11 years of age. The dispersion of the vegetative levels and norm activity across functional systems...



## Conclusions

1. The norms across separate ages of the junior school age children do not differ from the indices of the age group of 7-11 years. The identified variances are non-liable and do not influence the transformation of functional-vegetative levels (FV-levels) within the selected norm-age groups of children.

2. The practical assessment of the value of the distinguished norms requires the study of gender-age dependency of FV-levels on the habitation of children within the regions of the ecological (radiation) pollution.

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