

their physically challenged possibilities just before the MCR academic course and through the month have been authentically much better (e.g. $59,3\pm 2,4$), than just before the MCR academic course $52,2\pm 2,5$ (e.g. $p=0,039$). The EF under-aged children with their physically challenged possibilities just after the medical treatment have been authentically much better (e.g. $69,5\pm 1,8$), than just before their rehabilitation $55,1\pm 2,1$ (e.g. $p\leq 0,001$). So, the difference between the SF under-aged children with their physically challenged possibilities at the beginning of the medical treatment (e.g. $48,8\pm 1,9$) and through the month (e.g. $54,3\pm 1,7$) has also been authentic (e.g. $p=0,016$). The LS under-aged children with their physically challenged possibilities has been considerably improved from $49,7\pm 1,7$ up to $52,3\pm 1,6$ just after the MCR academic course finishing, in the comparison with the given indices just before academic course beginning indices (e.g. $p\leq 0,001$).

Thus, according to the secondary school (SS) or the high school (HS) scale data, by the children themselves valuation, their LQ has already been improved with the time, against the background of the MCR academic course passing.

So, the medical and social rehabilitation (MSR) academic course is making positively its direct influence upon the under-aged children with their physically challenged possibilities the vital functions and the vital activity physical, the emotional, and the social sides, that is being revealed in all the scales indices further improvement, having characterized their LQ.

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RECOMBINATORY MORPHOGENESIS OF LYMPHATIC SYSTEM IN PRENATAL ONTOGENESIS OF HUMAN

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Morphogenesis of lymphatic system is the result of interactions of different uneven increasing vessels, its forms change such as structure and topography of vessels and their combinations:

1) differential morphogenesis of primary venous bed – its division on secondary veins

(magistrals) and lymphatic chinks with tributaries (collaterals) after this anlage lymphatic sacs and primary vessels in the result of interactions of arteries with primary veins;

2) transformatory morphogenesis of primary lymphatic bed – its conversion into secondary lymphatic bed, when are passed anlage of lymph nodes in the result of interactions of arteries and veins with primary lymphatic vessels;

3) modificatory morphogenesis of secondary lymphatic bed – its modification by means of uneven growth and deformation of its walls with various appearance of valves and intervalvar segments, smooth myocytes. For instance pressure of aorta and its branches on some parts of thoracic duct causes increased formation of valves and smooth myocytes in these parts – they limit reverse lymph flow and support direct lymph flow. These processes can pass consecutively as stages of lymphatic system morphogenesis or parallelly and even in intimal relation especially last two processes. Thus morphogenesis of lymphatic system passes as process of recombination of arteries and veins and then lymphatic vessels, is manifestation of autodifferentiation of cardiovascular system when its parts enter into reinteraction including after their transformation.

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MULTI-LEVEL SEGMENTARY ORGANIZATION OF THE LYMPHATIC BED

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Lymphatic bed (LB) is the part of whole cardiovascular system but has specific construction. LB consists of different segments which organize flow out of surplus of tissue fluid as lymph in conditions of deficit of lymph flow energy. Multi-level segmentary organization of the LB includes its (kwazy)segmentary connection with arteries in the nerve-vascular bundles of different organs and regions of human body and fold construction of LB walls. Segments of LB can divide on general or intersystem (LB and blood bed) and special or intrasystem (intervalvar), general segments – on regional or periarterial, organic or

perinodal, root or interarteriolar. In the periarterial segment lymphatic vessels and lymph nodes take place about extraorganic arteries. In the perinodal segment lymphatic vessels from LB of this organ or its part end into the neighbouring lymph node. The root segment takes place in microcirculatory bed district: terminal arteriolar and collective venules, their branches and roots "cut" lymphatic capillaries network on parts, usually from them the lymphatic postcapillaries go out and accompany terminal arteriolar and collective venules but don't always. On each level of general, paraarterial segmentation LB divides on intervalvar segments with different construction of the walls accordingly fluctuate character of lymph flow, tissue metabolism, functional activity of organs – endothelial wall of lymphatic capillaries with mobile contacts between cells (intrawall valves) supplements then its folds with connective tissue in lymphatic postcapillaries (true, intraluminal valves), smooth myocytes in lymphatic vessels and lymphoid tissue in lymph nodes. Morphogenesis of general segments of LB is determined by influence of arteries and growing organs (over arteries) on primary venous and lymphatic paths. In early embryos branches of aorta connect with somites which determine their segmentary direction. Arteries break up primary venous bed that leads to anlage of primary lymphatic collectors along aorta and its branches – venous pockets, lymphatic chinks and sacs with their tributaries, including the intraorganic. Anlage of lymph nodes takes place along arteries too by means of their invaginations into lymphatic sacs and vessels – thus arteries break up primary LB. Segmentation in anatomic organization of primary vascular system partly loses later in result moving of organs from their anlage places, secondary fusions of peritoneum and another processes, reaching to a far greater extent in the walls of LB (intervalvar segments). Growing of some organs into mesenteries of another organs in embryos and secondary fusions of peritoneum in fetuses, grow of microstructures in organs and lymph nodes, inconstancy of blood and lymph flow lead to approach and association of existent paths and formation of new, more short, including aberrant paths of lymph flow from organs, beginning from root segments of LB. Morphogenesis of the root segments are determined by special features of tissue metabolism, lymphproduction as main moving force of lymph flow in roots of LB. Arteries thanks to more blood pressure in them dominate in interactions with veins and LB, contact (dividing of embryonal vessels and massage of definitive vessels) and remote (over blood flow and tissue metabolism). As origin of blood supply for all organs arteries exert determinative influence on tissue metabolism, grow of organs, lymphproduction and lymph flow, morphogenesis of LB intervalvar and general segments.

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CORRELATION BETWEEN NATURAL GROWTH AND FUNCTIONAL DEVELOPMENT OF CHILDREN (for the 90th anniversary of Ch. Child's hypothesis)

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On the basis of examination data of 3500 newborns for 20 years of observation it has been revealed that in case of prolonged worsening of population quality of life the decrease of body sizes occurs both in women in labor and in newborns, as well as the fall of functional maturity value of the latters. However, when economic situation stabilizes the birth rate coefficient rises and newborns' development increases selectively. The revealed phenomenon of brain development rate maintenance for body growth rate deceleration confirms Ch. Child's hypothesis of the craniocaudal gradient of fetal development.

Natural longitudinal growth of body in children and adolescents is implied by the conception of «growth», when the question concerns human beings. Under these conditions the increase of body sizes and development can't be contrasted. And, although growth is a simultaneous result of development, at some stages of life the development itself can be a growth derivative (V.V. Kupriyanov, 1974). As far as body height increased, associated with development acceleration in children in the last century, continuous renewal of the best achievements in sport was observed (G.S. Tumanian et al., 1976).

Quality of life worsening of Russia population at the end of the last century has led to the delay of children growth rate, the decrease of the values of newborn functional maturity and that of the index of schoolchildren intellectuality [V.A. Shchurov et al., 2008].

According to Ch. Child's hypothesis [1], the difficulties arising in the course of pregnancy (circulation worsening, intoxication) can have not only an overall negative effect on fetal growth, but