

95 **A COMPARISON OF VARIANT OF ECHOCARDIOGRAPHY OF HEART IN ATHLETE AND NON-ATHLETIC TEENAGERS**

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Diameters of heart are influenced by age, gender, body surface area and exercise. Extreme volume load and extreme pressure

load may cause hypertrophic changes on heart. The aim of this study was a comparison of the rate of changes in end systolic and diastolic diameter and end systolic and diastolic volume and interventricular septum and posterior wall thickness and stroke volume of left ventricle in athlete and non-athlete teenagers. Three groups (each 10 person, 15–17 years old) were included, and matched for weight and body surface area. The first group comprised middle-distance runner athletes, the second group, taekwondo player athletes and the third group, non-athlete controls. Diameters of heart were measured by M-mode and 2-D echocardiography with a single observer in a blinded fashion.

Results There were no significant differences in mean of end systolic diameter and posterior wall thickness of left ventricle in three groups, but other variables were significantly larger in middle-distance runner and taekwondo groups than the control group. The results of LSD test showed that mean of left ventricle end diastolic volume and interventricular septum thickness were significantly larger in middle-distance runners than taekwondo players.

Variants	Means			F	p
	Middle-distance runner	Taekwondo players	No athletes		
LVEDD, mm	29.56±3.88	29.66±3.20	27.51±2.75	0.897	0.42
LVEDV, ml	50.46±3.20	50.17±3.52	45.51±3.44	5.35	0.012
LVEDV, ml	89.89±2.66	79.11±4.87	60.04±2.05	16.97	0
LVESV, ml	38.70±1.97	33.98±2.70	27.27±1.36	6.082	0.007
SV, ml	51.18±5.26	45.12±9.27	32.76±3.49	16.25	0
IVST, mm	9.57±0.024	8.86±0.024	7.97±0.024	10.38	0.001
PWT, mm	8.67±0.045	8.74±0.040	7.7±0.026	1.44	0.25

The stroke volume and volume of left ventricle of heart in anaerobic athlete teenagers with 3 years of background dynamic exercise, like taekwondo may increase as well as middle-distance runners. The results of present study are in agreement with the studies of Babet, Bary, Makan and Sanjay. Furthermore, dynamic exercise increases the thickness of walls of ventricle. This result is in accordance to Babet study.