

Elite Child Athletes Are Our Future: Cardiac Adaptation to Monofin Training in Prepubertal Egyptian Athletes

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Abstract : Background: The elite child athletes are one who has superior athletic talent. Monofin (a single surface swim fin) swimming already proved to be the most efficient method of swimming for human being. This is a novel descriptive study examining myocardial function indices in prepubertal monofin children. The aim of the present study was to determine the influence of long-term monofin training (LTMT), 36 weeks, 6 times per week, 90 min per unit on Myocardial function adaptation in elite child monofin athletes. Methods: 14 elite monofin children aged 11.95 years (± 1.09 yr) took part for (LTMT). All subjects underwent two-dimension, M-mode, and Doppler echocardiography before and after training to evaluate cardiac dimensions and function; septal and posterior wall thickness. Statistical methods of SPSS, means \pm SD and paired t test, % of improvement were used. Findings: There was significant difference ($p < 0.01$) and % improvement for all echocardiography parameter after (LTMT). Inter ventricular septal thickness in diastole and in systole increased by 27.9 % and 42.75 %. Left ventricular end systolic dimension and diastole increased by 16.81 % and 42.7 % respectively. Posterior wall thickness in systole very highly increased by 283.3 % and in diastole increased by 51.78 %. Left ventricular mass in diastole and in systole increased by 44.8 % and 40.1 % respectively. Stroke volume (SV) and resting heart rate (HR) significant changed (sv) 25 %, (HR) 14.7 %. Interpretation: the unique swim fin tool and create propulsion and overcome resistance. Further researches are needed to determine the effects of monofin training on right ventricular in child athletes.

Keywords : prepubertal, monofin training, heart athlete's, elite child athlete, echocardiography

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