

## The Effect of Aerobic Training on Structure and Function of Heart in the Disabled With Spinal Cord Injury

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**Abstract :** Research was done on the structure and function of the heart in disabled athletes and non-athletes. The purpose of this study was to investigate the effects of a selected aerobic program on 48 disabled participants with spinal Cord Injury (SCI). The athletes were selected from those involved in athletics (field events) at provincial and national levels. Non-athletes were selected from the disabled of Kahrizak sanitarium. Four equal groups were formed, two experimental groups including athletes and non-athletes, plus two control groups of athletes and non-athletes. The experimental groups performed aerobic exercise for 8 weeks and 3 sessions per week. The Control groups did not perform any special exercise. Echo-cardiography and Spectral Doppler were applied to study the structure and function of heart of the test groups before and after the exercises. At the end of the exercise program, no significant statistical changes were observed ( $P>0.05$ ).

Spectral Doppler

### Key Words:

Spinal cord Injury, Selected training program, Interventricular septal systolic, Interventricular septal diastolic, Left ventricular End Diastolic Dimension, left ventricular End Systolic Dimension, Left ventricular End Diastolic Volume , Left

( $P < /$  )

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**ventricular End Systolic volume, Ejection fraction,  
stroke volume, Left ventricular mass.**



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*Fukuda*

*Spectral Doppler*

*FFsonic UF*

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*Post Hoc (Tukey)*

*(ANOVA)*

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\* NC, NE, SC, SE

(NC)	(NE)	(SC)	(SE)	
				(n)
/ ± /	/ ± /	± /	/ ± /	(Yr)
/ ± /	/ ± /	/ ± /	/ ± /	(cm)
/ ± /	/ ± /	/ ± /	/ ± /	(Kg)
%	%	/ ± /	/ ± /	(n)
±%	±%	/ ± /	/ ± /	(Yr)
%	%	/ ± /	/ ± /	(Yr)
%	%	/ ± /	/ ± /	(Yr)

:SE\*

:SC

:NE

:NC

NC, NE,

SC, SE

(NC)	(NE)	(SC)	(SE)	
				(n)
/ ± /	/ ± /	/ ± /	/ abc ± /	((mm)IVSD)
/ ± /	/ ± /	/ ± /	/ bc ± /	((mm) IVSS)
/ ± /	/ ± /	/ ± /	/ ± /	((mm) LVPWTd)
/ ± /	/ ± /	/ ± /	/ ± /	((mm) LVPWTs)
/ ± /	/ ± /	/ ± /	/ c ± /	((mm) LVEDD)
/ ± /	/ ± /	/ ± /	/ c ± /	((mm) LVEDS)
/ ± /	/ ± /	/ ± /	/ bc ± /	((ml) EDV)
/ ± /	/ ± /	/ ± /	/ c ± /	((ml) ESV)
/ ± /	/ ± /	/ ± /	/ abc ± /	(%EF)
/ ± /	/ ± /	/ ± /	/ abc ± /	((ml)SV)
/ ± /	/ ± /	/ ± /	/ abc ± /	((gr) LVM)

NC, NE,

SC, SE

(NC)	(NE)	(SC)	(SE)	
				(n)
/ ± /	/ ± /	/ ± /	/ ± /	((mm)IVSD)
/ ± /	/ ± /	/ ± /	/ ± /	((mm) IVSS)
/ ± /	/ ± /	/ ± /	/ ± /	((mm) LVPWTd)
/ ± /	/ ± /	/ ± /	/ ± /	((mm)LVPWTs)
/ ± /	/ ± /	/ ± /	/ ± /	((mm) LVEDD)
/ ± /	/ ± /	/ ± /	/ ± /	((mm) LVEDS)
/ ± /	/ ± /	/ ± /	/ ± /	((ml) EDV)
/ ± /	/ ± /	/ ± /	/ ± /	((ml) ESV)
/ ± /	/ ± /	/ ± /	/ ± /	(%EF)
/ ± /	/ ± /	/ ± /	/ ± /	((ml)SV)
/ ± /	/ ± /	/ ± /	/ ± /	((gr) LVM)

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