

Cardiorespiratory effects of breathing and relaxation instruction in myocardial infarction patients. van Dixhoorn J. Biol Psychol. 1998 Sep;49(1-2):123-35.

The effect of individual instruction in relaxation and breathing, additional to an exercise training program, was investigated in 76 post-myocardial infarction patients after rehabilitation and at 3 months follow-up. Respiration rate (RR), heart rate (HR) and respiratory sinus arrhythmia (RSA) were the outcome variables used to compare experimental (exercise plus relaxation) and control (exercise without relaxation) groups. HR and RR decreased slightly during 20-min sessions of supine measurement. This response did not vary between sessions (pre-rehabilitation, post-rehabilitation and after 3-month follow-up). RSA tended to decrease during the sessions. The within-session reduction in RSA became more apparent in the control group after treatment and less so in the experimental group. RR decreased in the experimental group after rehabilitation, but not in the control group. HR decreased for all patients, but the decrease was larger in the experimental group. This effect was associated with the lower RR. RSA did not change in the control group but increased in the experimental group, during both normal and deep breathing. This effect was also associated with a slower RR and became marginally significant when RR was statistically controlled for. We conclude that the relaxation intervention induced a slower breathing pattern which was associated with beneficial effects on resting HR and RSA. Further study is warranted to clarify the degree to which reduced respiration rate is an indicator of lower sympathetic arousal or merely a concomitant of the learned breathing technique.