Is High-Intensity Functional Training Sufficient for Improving Cardiovascular Endurance in Cancer Survivors?

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INTRODUCTION

• Cancer survivors are recommended to follow the 2008 Physical Activity Guidelines for Americans (PAG): 150 minutes of moderate-intensity, or 75 minutes of vigorous-intensity or a combination, along with 2+ days of full-body muscle strengthening exercises per week [1].
• High-intensity functional training (HIFT) has been shown to take less time to improve metabolic and physiological adaptations than previously tested interventions at moderate-intensities [2].
• Exercise training in cancer survivors is considered safe and can improve physical functioning and quality of life, however specific guidelines for this population are lacking [3].
• Percentages of maximum heart rate appear to be valid indicators of exercise intensity for cancer survivors. [4]
• To date, HIFT has not been tested among cancer survivors.

METHODS

 Measures
During all exercise sessions
• Heart rate: participants wore heart rate monitors each session (Polar RS800CX)
• Measure of workout intensity
The week prior to and the week following the intervention
• Six minute walk test (6MWT): a submaximal test of aerobic capacity was used to assess cardiovascular endurance
• Participants walked on a 200-meter track for six minutes and the total distance walked was measured.

WORKOUT DURATION AND INTENSITY

• Total heart rate observations n=63; Two participants dropped out, but their data for completed sessions was included
• Mean time spent at moderate intensity was 24:43±12:43 min
• Mean time spent at vigorous intensity was 10:57±10:51 min
• Figure 1 shows the heart rates of a participant across a workout session
• Calculated mean and median time spent at moderate intensity: 48:36 min (±13:27) min; 50:40 min
• Participants completed a calculated average of 145:48 minutes of moderate intensity aerobic activity per week, which is not significantly lower than the recommended 150 minutes. p=0.704

6MWT
• Pretest distance: 638±12.1m; Posttest distance: 733±19.1m
• Participants significantly improved, t=3.53, p=0.039

Figure 1: HR of Subject during session 11

CONCLUSIONS

Not only did HIFT improve cardiovascular endurance in cancer survivors, but performing this exercise 3 days a week was sufficient to meet PAG. All participants reached vigorous heart rates with no apparent ill effects. HIFT appears to be a safe and effective exercise option for cancer survivors.

References