

# Effects of Intense Physical Exercise In Rehabilitation of Patients Submitted to Heart Transplant



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**Submission:** April 20, 2018; **Published:** May 30, 2018

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## Introduction

Cardiovascular diseases account for 17.3 million deaths per year and it is estimated that by 2030 this number will reach 23.6 million [1]. Despite the constant therapeutic advances of the last decades, heart failures still a reserve prognosis, and heart transplantation is a widely accepted surgical alternative in cases where drug therapy is not sufficient to maintain the quality of life of patients with the form most severe disease [2]. Post-transplant cardiac rehabilitation with physical exercise has proven benefits for the patient to return to daily activities, improving fitness, and reduce some complications such as obesity, hypertension and depression [3,4].

This comment describe the effects of intense physical exercise on rehabilitation of patients undergoing heart transplantation. Descriptors such as "exercise, heart transplantation, rehabilitation" were used to search in MEDLINE (via PubMed), PEDro and periodicals CAPES. Individually supervised and prescribed exercise can start at any time. Both in the programs introduced in the hospital stay 5, and in those introduced after 6 months 6, 1 year 7, 2 years 8, 4 years 9, 10 years 11 the efficacy of intense exercise training results in an improvement in their rehabilitation of transplant patients.

Most studies compare the use of exercise programs in their rehabilitation of transplant patients with their patients who did not use exercise programs. The most frequently used parameter was the evaluation of peak oxygen consumption (VO<sub>2</sub>). However, other parameters such as chronotropic response, blood pressure, muscle mass are also used to evaluate patient rehabilitation.

The studies use a stationary bicycle and treadmill for aerobic training programs [5-9]. Supervised training programs are significantly more effective when compared to the unsupervised exercise control group 7. The peak VO<sub>2</sub> of transplanted patients who participated in intense exercise training programs shows a significant increase in most of the studies analyzed [5-8,10-12]. In addition, high-intensity

exercises showed a beneficial chronotropic effect [7], not yet understood, but which may be due to an increase in autonomic nervous control.

A significant reduction in blood pressure is observed in the group after high intensity exercises [5,6]. There is also a significant increase in strength and muscle mass, with a consequent improvement in the quality of life and in the execution of routine tasks [6-8,10,13-16]. Cardiac rehabilitation programs based on intense exercise are beneficial to patients undergoing heart transplant as improve the quality of life, help them return to daily activities and avoid common clinical complications in the postoperative period.

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DOI: [10.19080/JOJS.2018.01.555560](https://doi.org/10.19080/JOJS.2018.01.555560)

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