**IMPACT OF EXERCISE TRAINING ON DIASTOLIC FUNCTION IN HFPEF: GATHERING EVIDENCE FROM CLINICAL AND PRE-CLINICAL STUDIES**

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Epidemiologic studies indicate that up to 50% of patients with heart failure have a preserved ejection fraction (HFpEF), and this proportion is predicted to rise due to increasing prevalence of risk factors such as obesity, hypertension and diabetes in an ageing population. HFpEF is responsible for frequent hospitalizations, high consumption of resources and poor prognosis. While no treatment has yet been shown to reduce morbidity or mortality, exercise training (ExT) is emerging as an ally for the clinical management of health-related outcomes in HFpEF patients. Randomized controlled intervention trials suggest that non-cardiac peripheral factors (e.g. skeletal muscle and vascular function) are important contributors for these improvements. Regarding the impact of ExT on ventricular relaxation and diastolic stiffness, the hallmark of HFpEF, the data is not so clear. Differences in the exercise intervention (e.g. mode, intensity, duration), in the assessment and grading of diastolic function, heterogeneity between patients (e.g. underlying etiology of HF and comorbidities) may be confounding factors influencing the effect of exercise training on cardiac function and remodeling. Evidences of the cardiac effects induced by ExT at the pre-clinical level are scarce, mainly because there is no animal model that reasonably recapitulates the human disease. However, available studies suggest that ExT decreases left ventricular stiffness by modulating titin phosphorylation and fibrosis, which are major contributors to diastolic dysfunction.