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**Supplementation of glutamine and omega-3 polyunsaturated fatty acids as a novel therapeutic intervention targeting metabolic dysfunction and exercise intolerance in patients with heart failure.**

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**Source**

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**Abstract**

With its increasing prevalence throughout the world, heart failure continues to be associated with high morbidity and mortality. Patients with heart failure develop progressive metabolic abnormalities, inflammation, and atrophy in the myocardium and skeletal muscle. Improvement in functional capacity as defined by exercise tolerance is essential for better quality of life and potentially survival of these patients. Therapeutic management options aimed at improving peripheral organ function are limited. Nutritional approaches with dietary supplementation in addition to current therapies are particularly appealing as they are novel and mechanistically different. In this article, we review the role of glutamine and omega-3 polyunsaturated fatty acids on metabolism and functional capacity in heart failure. These two compounds are of particular interest due to their synergistic role on oxidative metabolism, lipolysis and inflammation.