

Chapter 7

Cardiac Plasticity in Health and Disease

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Introduction

Heart failure is the leading cause of death in industrialized nations, a longstanding fact which is expected to persist into the foreseeable future. In the USA, heart failure affects around five million people with a 5-year mortality approaching 50% [1]. Sadly, effective treatment of this disease—a huge burden on individuals and societies alike—remains elusive. Heart failure is the final common pathway of numerous pathological insults to the heart, each of which triggers a series of remodeling processes involving gene expression cascades, myocyte growth, cell death, fibrosis, and more. Current research aims at gaining enhanced understanding of molecular mechanisms underlying these remodeling events. The overriding expectation in this field is that unraveling mechanisms of pathological cardiac remodeling will culminate in novel therapeutics to augment existing—demonstrably inadequate—therapies for this devastating syndrome.

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