

Ingwall JS, RG Weiss. Is the failing heart energy starved? On using chemical energy to support cardiac function. *Circ Res* 2004;95(2):135-45.

The requirement of chemical energy in the form of ATP to support systolic and diastolic work of the heart is absolute. Because of its central role in cardiac metabolism and performance, the subject of this review on energetics in the failing heart is ATP. We briefly review the basics of myocardial ATP metabolism and describe how this changes in the failing heart. We present an analysis of what is now known about the causes and consequences of these energetic changes and conclude by commenting on unsolved problems and opportunities for future basic and clinical research.

