

## **D-RIBOSE IMPROVES VENTILATORY EFFICIENCY IN CONGESTIVE HEART FAILURE PATIENTS (NYHA CLASSES II-IV)**

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Energy is essential to maintain cellular integrity and function. Congestive heart failure (CHF) patients (pts) have decreased levels of myocardial high energy compounds, contributing to myocardial dysfunction. Advanced class CHF pts have compromised ventilatory efficiency (Veff), limiting their exercise reserve even during sub-maximal exertion. Ribose (R), a natural occurring pentose carbohydrate, has repeatedly shown to enhance high energy phosphates and improve diastolic dysfunction following myocardial ischemia. A two center study investigated the effect of R on Veff in CHF pts (NYHA classes II-IV). Twenty-three pts consumed oral R for 8 weeks (5 gm, tid). Repeat cardiopulmonary exercise tests' using a 4-minute sub-maximal step protocol was completed and a retrospective analysis was performed after the 8 week routine clinical visit. Ventilatory efficiency was assessed up to the anaerobic threshold at baseline and at 8 weeks of R. Ribose significantly improved Veff (VE to VCO<sub>2</sub> linear slope) in classes III and IV, with a trend towards improvement in class II pts (table, mean +/- SD). Oxygen uptake efficiency (linear regression slope of VO<sub>2</sub> to log VE) demonstrated a strong trend in classes III and IV (data not shown).

	VENTILATORY EFFICIENCY	
	Pre-R	Post-R
Class II, n=8	29.4+/-5.0	28.8+/-4.9
Class III, n=9	43.9+/-4.8	38.5+/-3.9*
Class IV, n=6	60.4+/-5.8	46.1+/-6.8**

(\*p<0.05, \*\*p<0.005)

Besides the consistently reported benefits of R in improving myocardial function, this study demonstrated a significant improvement in Veff (classes III and IV), the most powerful predictor of survival in CHF pts. Oral R as an adjunctive therapy utilizes a unique metabolic approach not provided by conventional guidelines.

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