Functional and Anatomical Characterization of Brown Adipose Tissue in Heart Failure with Blood Oxygen Level Dependent Magnetic Resonance

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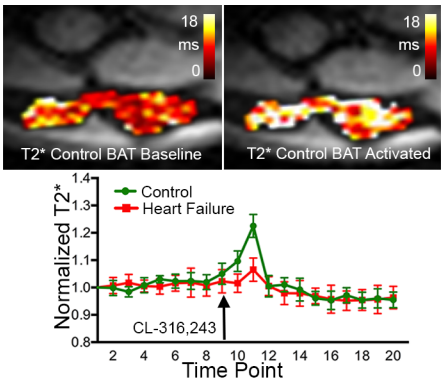

BOLD MRI of BAT was performed in control and heart failure mice before and after administration of the β3 adrenergic agonist CL-316,243. β3 agonism increased BAT T2* in healthy animals but not in mice with heart failure. This change was largely driven by an increase in flow. BAT volume, measured by MRI, was lower in heart failure and UCP1 levels were lower. Combined these data show that BAT is activated in heart failure but its response to subsequent sympathetic stimulation is blunted.