

Type 2 diabetes and cardiovascular diseases affect millions of people world-wide, with the attending implications for morbidity and mortality. An underlying cause of these diseases is insulin resistance, especially skeletal muscle insulin resistance. Elevated circulating levels of amino acids are implicated in the development of muscle insulin resistance. In this study, we demonstrated that impairment in catabolism of some amino acids (branched-chain amino acids, BCAA) can cause insulin resistance, and that depleting muscle cells of enzymes that catabolize BCAA worsened insulin resistance. Our data suggest that interventions that increase BCAA catabolism may promote insulin actions in skeletal muscle, thus improving insulin resistance and its sequelae.

Reference: Mann, G., & Adegoke, O. (2021). Effects of ketoisocaproic acid and inflammation on glucose transport in muscle cells. *Physiological reports*, 9(1), e14673.
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