Ketones drive mitochondrial uncoupling in adipose tissue

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**Objective.** The purpose of this study was to determine the effects of the ketone b-hydroxybutyrate (bHB) on mitochondrial respiration and uncoupling in distinct adipose tissues.

**Methods.** We used cell, rodent, and human models. 3T3-L1 adipocytes were treated with bHB; in rodents and humans, following a period of ketosis, fat samples were excised and measured for similar mitochondrial outcomes. In each model, mitochondria respiration was analyzed and, where presently available, UCP1 levels were measured.

**Results.** In every model, bHB robustly increased mitochondrial respiration. In rodent tissue, UCP1 expression was higher in inguinal fat.

**Conclusions.** Ketones increase mitochondrial respiration in cells and mammalian adipose tissue, likely via upregulation of UCP1.