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Caffeine intake increases plasma ketones: an acute metabolic study in humans

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Abstract

Brain glucose uptake **declines during aging** and is significantly impaired in Alzheimer's disease. Ketones are the main alternative brain fuel to glucose so they represent a potential approach to compensate for the brain glucose reduction. Caffeine is of interest as a potential ketogenic agent owing to its actions on lipolysis and lipid oxidation but whether it is ketogenic in humans is unknown. This study aimed to evaluate **the acute ketogenic effect of 2 doses of caffeine (2.5; 5.0 mg/kg) in 10 healthy adults**. Caffeine given at breakfast significantly stimulated ketone production in a dose-dependent manner (+88%; +116%) and **also raised plasma free fatty acids**. Whether caffeine has long-term ketogenic effects or could enhance the ketogenic effect of medium chain triglycerides remains to be determined.

Keywords: Alzheimer's disease; acides gras libres; caffeine; caféine; cétones; cétonémie; free fatty acids; ketonemia; ketones; lipolyse; lipolysis; maladie d'Alzheimer; medium chain triglycerides; triglycérides à chaîne moyenne.

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