

Dysfunctional ketogenesis promotes fatty liver disease in mice

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Approximately 1 billion people worldwide have non-alcoholic fatty liver disease (NAFLD). Individuals with this disease have an increased risk of type 2 diabetes, obesity, and kidney disease. It is not clear how this disease develops, though both genetics and events that alter metabolism appear to be involved.

A new study in the *Journal of Clinical Investigation* indicates that ketogenesis, a process that breaks down fat in the absence of carbohydrates, prevents NAFLD. Peter Crawford and colleagues at Sanford Burnham Medical Research Institute evaluated diet-induced NAFLD in mouse models.

Compared to wild type mice, animals with a genetic loss of ketogenesis exhibited excess hepatic glucose and lipid production. Mutant mice fed either a high-fat or high-carbohydrate diet exhibited symptoms associated with severe NAFLD, including hypoglycemia, extensive liver inflammation and hepatic injury.

The results from this study suggest that therapeutic strategies that target ketogenesis could potentially be used to treat NAFLD.

More information: Ketogenesis prevents diet-induced fatty liver injury and hyperglycemia, *Journal of Clinical Investigation*, October 27, 2014.

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