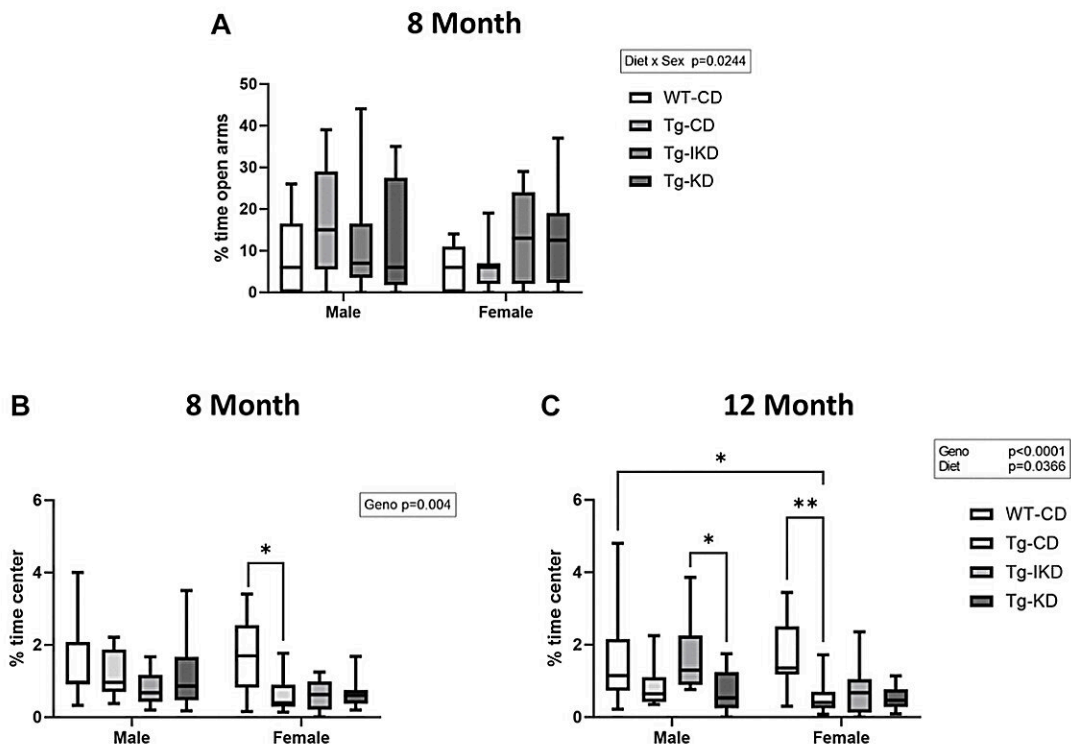


The impact of ketogenic diets on cognitive behavior, motor function, and blood lipids

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Measure of anxiety in TgF344-AD (Tg) and wild type (WT) rats. Credit: *Aging* (2024). DOI: 10.18632/aging.205741

A new research paper titled "The impact of continuous and intermittent ketogenic diets on cognitive behavior, motor function, and blood lipids in TgF344-AD rats" has been [published](#) in *Aging*.

Studies suggest that ketogenic diets (KD) may improve memory in mouse models of aging and Alzheimer's disease (AD). In this new study, researchers Jennifer M. Rutkowsky, Zabrisky Roland, Anthony Valenzuela, An B. Nguyen, Heui Hye Park, Natalie Six, Ilknur Dursun, Kyoungmi Kim, Pamela J. Lein, and Jon J. Ramsey from the University of California Davis and Istinye University determined whether a continuous or intermittent KD (IKD) enhanced [cognitive behavior](#) in the TgF344-AD rat model of AD.

"[...] it remains to be determined whether long-term consumption of a ketogenic [diet](#) can mitigate declines in cognitive or motor behavior in a rat model of AD. Therefore, the current study aimed to determine whether a KD improves cognitive or motor behavior in the TgF344-AD rat," the researchers write.

At 6 months old, TgF344-AD and wild-type (WT) littermates were placed on a control (CD), KD, or IKD (morning CD and afternoon KD) provided as two meals per day for 2 or 6 months. Cognitive and motor behavior and circulating β -hydroxybutyrate (BHB), AD biomarkers and blood lipids were assessed. Animals on a KD diet had elevated circulating BHB, with IKD levels intermediate to CD and KD.

TgF344-AD rats displayed impaired spatial learning memory in the Barnes maze at 8 and 12 months of age and impaired motor coordination at 12 months of age. Neither KD nor IKD improved performance compared to CD. At 12 months of age, TgF344-AD animals had elevated blood lipids. IKD reduced lipids to WT levels with KD further

reducing cholesterol below WT levels.

"[...] the IKD or KD did not improve motor coordination or spatial learning memory compared to the control diet. However, KD, and to a lesser extent IKD, mitigated elevations in plasma lipids in the TgF344-AD rats. Furthermore, the KD diet decreased plasma levels of total Tau in females," the researchers conclude.

More information: Jennifer M. Rutkowsky et al, The impact of continuous and intermittent ketogenic diets on cognitive behavior, motor function, and blood lipids in TgF344-AD rats, *Aging* (2024). [DOI: 10.18632/aging.205741](https://doi.org/10.18632/aging.205741)

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