GDF15 knockout does not impact maternal food intake or body composition but increases female offspring bodyweight in the first 14 days of life

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Keywords:

Abstract

# Introduction

# Materials and Methods:

## Animal Husbandry and Protocol

Male and female GDF15 animals were procured from the Seeley Lab at the university of Michigan. Adult female mice, at least 70days old, were singly house in a temperature and humidity-controlled facility with a 12-hour light:dark cycle. Once single-housed, weekly food intake and body weight measurements began and continued throughout the experiment. After one week of food and body weight monitoring, homogenous genotype males were introduced for mating. Males were allowed to remain in the breeding cage until a copulatory plug was discovered, indicating pregnancy (E0.5). All protocols were approved by the institutional animal care and use committee of the University of Michigan.

## Weigh-suckle-weigh, milk volume production

On postnatal day 10.5, we assessed milk volume production by conducting a weigh-suckle-weight test (ref). Dams were weighed using an analytical scale to the nearest 0.01 gram and placed in a clean cage with free access to food and water. Pups were then weighed in aggregate and placed in a clean cage on top of a heating pad without access to food or water. Dam and pups remained separated for 2 hours. After 2 hours, weight measurement was repeated and pups were reintroduced to the dam’s cage where they remained for 1 hour. After one hour, the final weights were taken for both dams and pups in aggregate. Volume of milk produced is expressed the average as /number of pups

## Milk collection

Milk collection took place on postnatal day 14.5-17.5. Pups were separated from dams and sacrificed 2 hours before milk collection began. Following pup sacrifice, dams were allowed to *ad libitum* access to food and water in a clean cage.

## Milk fat percentage determination

Whole milk collected at Postnatal day 14.5-17.5 was thawed on wet ice then homogenized by pipetting up and down. Milk was then diluted in PBS+EDTA in a 1:3 ratio and mixed thoroughly by pipetting up and down.

Capillary tubes were filled with the diluted solution and one end was double-sealed with crit-o-seal. Sample tubes were spun in 8 consecutive 120 second cycles in a mini hematocrit spinner. After Milk samples were run in duplicate, or triplicate if milk fat percentage differed by more than 25% in the first two samples. Filled capillary tubes

## Offspring

# Results

# Conclusion

# Discussion

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# References