**Title:** Gestational Early-Time Restricted Feeding Results in Sex-Specific Glucose Intolerance in Adult Male Offspring

**Authors:** Molly C. Mulcahy1, Noura El Habbal1, Detrick Snyder1, JeAnna R. Redd1, Haijing Sun2, Brigid E. Gregg1,2, Dave Bridges1

**Affiliation:**

1University of Michigan School of Public Health, Department of Nutritional Sciences, Ann Arbor MI, USA

2University of Michigan Medicine, Department of Pediatrics, Division of, Diabetes, Endocrinology, and Metabolism, Ann Arbor MI, USA

**Keywords:** time-restricted feeding, glucose intolerance, maternal nutrition, developmental programming

**Running title:** eTRF leads to offspring glucose intolerance

**Corresponding Author Information**:   
Dave Bridges PhD   
Email address: [davebrid@umich.edu](mailto:davebrid@umich.edu)  
Postal address: 1863 SPH I 1415 Washington Heights, Ann Arbor, Michigan48109-2029   
Telephone: +1 (734) 764-1266

**Word Count:** 3909

**Funding:** This work was supported by R01 DK107535 (DB) and R56 DK121787 (BEG). MCM was supported through the University of Michigan Rackham Merit Fellowship.

**Disclosure:** The authors declare no conflicts of interest.

**Answers to study importance questions:**

What is already known about this subject?

* TRE modulates metabolic health in adults. TRE currently is thought to improve metabolism, even in some cases without weight loss. Recent work demonstrates that up to 23.7% of a pregnant sample would consider attempting TRE during gestation, yet there is no study that evaluates the long-term implications of this diet on the resultant children.

- What are the new findings in your manuscript?

* This manuscript highlights a novel population affected by TRE, the offspring of mothers who had adopted TRE during pregnancy. We see glucose intolerance in adult males fed on a HFD whose mothers were assigned to TRE without weight changes or food intake changes. Females are spared from this glucose intolerance.

- How might your results change the direction of research or the focus of clinical practice?

* These findings highlight the critical missing populations where TRE might affect long-term health, mothers and their children. It demonstrates the need to evaluate this dietary practice for further safety and efficacy information.