

# CHRD 2024: Abstract Submission Form

**Presenter Name**

Thiago Baltus

**Presenter Status**

Post-Doctoral Fellows

**Role in the project**

Perform Experiments  
Write Abstract

**Research Category**

Basic Science

**Title**

Type-2 Diabetes Risk in Offspring: standardization of an exposure model in mice.

**Background**

In human cohort studies, it has been shown that exposure to type 2 diabetes (T2D) increases the risk for T2D development in exposed offspring 16 times; 4-fold greater than exposure to gestational diabetes mellitus. Currently, we have little mechanistic understanding of how exposure to T2D during gestation drives the susceptibility of offspring to T2D, largely due to limitations associated with human studies and lack of an appropriate rodent model of T2D in pregnancy.

**Objective**

Our goal is to characterize a model of T2D in pregnancy and examine the metabolic parameters in the T2D-exposed offspring.

**Methods**

To induce T2D pre-pregnancy, C57BL6/J female mice were fed a high-fat and-sucrose (HFS) diet for 8 weeks followed by a single-dose of Streptozotocin (STZ; 75mg/kg) to hinder beta cell compensation causing insulin insufficiency. Control females were fed a standard chow diet and were injected with citrate buffer. All females were bred with healthy male mice and pregnancy established. All offspring were weaned onto a chow diet and evaluated at 4-12 weeks of age for glucose tolerance and insulin secretion capacity.

**Results**

While on-going, preliminary data indicates that exposure to T2D impacts early life glucose tolerance and insulin secretion in a sex-specific manner.

**Conclusion**

While in the early stages, our study demonstrates that exposure to T2D during gestation triggers mild metabolic dysfunction in early life, which is more severe in males. Further investigations are needed to understand the mechanistic drivers of these metabolic changes and to determine how this influences susceptibility to subsequent metabolic stress and T2D development.

**Do you have a table/figure to upload?**

No

## Authors

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