

*Consumer Abstract*

Although insulin resistant is associated with Type 2 diabetes and obesity, the cause of it is unclear. Reactive oxygen species, toxic byproducts of metabolism, are one likely candidate. Mitochondria are the part of cells where energy metabolism occurs and are the chief producers of reactive oxygen species, making mitochondria highly susceptible to damage from these toxins. Fortunately, the cell can replace damaged mitochondria through a process called biogenesis. However, if biogenesis does not occur fast enough, the damaged mitochondria can cause insulin resistance. For this reason, Dr. Liu's research group plans to use both cell and animal models to determine ways to stimulate biogenesis. The results from this experiment may provide insight into both the treatment and/or prevention of insulin resistance that is associated with Type 2 diabetes, obesity, and other clinical conditions.