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Beta-Cell function of diabetic patients unaffected by metformin with insulin

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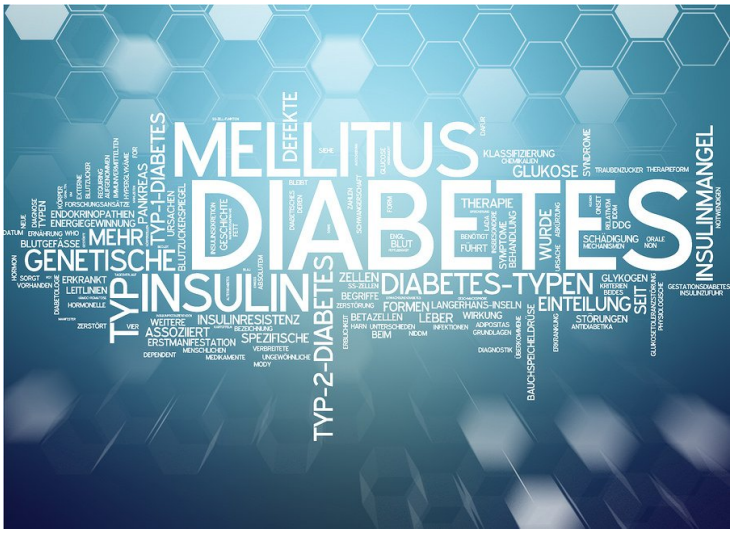
Restoring Insulin Secretion (RISE) Pediatric Medication Study shows that youth have markedly reduced insulin sensitivity and respond differently to medications



Singapore – According to recent research, the insulin resistance and pancreatic beta-cell (?-cell) dysfunction associated with type 2 diabetes (T2D) was unresponsive to treatment with metformin alone or metformin combined with insulin glargine in youth with impaired glucose tolerance (IGT), which is an element of prediabetes, or early T2D. Additionally, youth with IGT and T2D, compared to adults, are more insulin resistant, and thus their insulin is less effective in lowering blood glucose levels in their bodies. These findings from the Restoring Insulin Secretion (RISE) program's Pediatric Medication Study were presented today at the American Diabetes Association's® (ADA's) 78th Scientific Sessions® at the Orange County Convention Center.

T2D is increasing in prevalence in youth and adults in the U.S., and increases the risk of early morbidity and mortality, as well as long-term complications. T2D and its precursor, prediabetes, are characterized by insulin resistance and beta-cell dysfunction in youth and adults, and prediabetes includes IGT. However, research has suggested that T2D in youth might represent a more severe and rapidly progressive condition than in adults.

Given the increased recognition of the critical role of pancreatic ?-cell function (?-cells store and release insulin in the body) in the pathogenesis of T2D, research efforts have begun to focus on prevention of the loss of insulin secretion among individuals at high risk for T2D or in early stages of the disease. The RISE program consists of three randomized, multi-center studies across the U.S. The trials focus on youth and adults to assess the impact of different interventions at the stage of IGT or shortly after the diagnosis of T2D to determine if the ?-cell decline observed in IGT and early T2D could be halted or reversed.

Baseline data comparing youth and adults as well as results of one of the RISE studies, the RISE Pediatric Medication Study, will be featured in three articles published online simultaneously with today's Symposium and in the August 2018 issue of *Diabetes Care*.

"These findings contrast with prior reports in adults, showing an improvement in ?-cell function after 12 months of treatment with metformin or after insulin treatment, either for diabetes prevention or treatment," said Kristen Nadeau, MD, MS, Professor of Pediatric Endocrinology at the University of Colorado Anschutz Medical Campus. "Early treatment of youth with IGT or type 2 diabetes may require other glucose-lowering medications alone or in combination to combat insulin resistance and arrest the progressive loss of ?-cell function in youth. Additionally, the results of our study call for further studies to better understand the physiology of youth-onset type 2 diabetes and to identify new, safe and effective treatment options for youth with IGT or type 2 diabetes."