13<sup>th</sup> European

## **Diabetes and Endocrinology Congress**

November 26-27, 2018 | Dublin, Ireland

## CHILDHOOD BMI AND ADULT TYPE 2 DIABETES, CORONARY ARTERY DISEASES, CHRONIC KIDNEY DISEASE, AND CARDIOMETABOLIC TRAITS: A MENDELIAN RANDOMIZATION ANALYSIS.

Huang Tao Peking University, China

**Objective**: To test the causal effect of childhood BMI on adult cardiometabolic diseases using a Mendelian randomization (MR) analysis.

**Research design and methods**: We used 15 single nucleotide polymorphisms (SNPs) as instrumental variables for childhood BMI to test the causal effect of childhood BMI on cardiometabolic diseases using summary-level data from consortia.

**Results**: We found that a one-SD increase in childhood BMI (kg/m2) was associated with an 83% increase in risk of type 2 diabetes (odds ratio [OR] 1.83 [95% CI 1.46, 2.30];  $P = 2.5 \times 10-7$ ) and a 28% increase in risk of coronary artery disease (CAD) (OR 1.28 [95% CI 1.17, 1.39];  $P = 2.1 \times 10-8$ ) at the Bonferroni-adjusted level of significance (P < 0.017) in adults. In addition, a one-SD increase in childhood BMI was associated with a 0.587-SD increase in adulthood BMI (kg/m2), a 0.062-SD increase in hip circumference (cm), a 0.602-SD increase in waist circumference (cm), a 0.111 pmol/L increase in log fasting insulin, a 0.068 increase in log HOMA  $\beta$  (log HOMA-B) (%), a 0.126 increase in log HOMA of insulin resistance (log HOMA-IR) (%), and a 0.109-SD increase in triglyceride (TG) (mg/dL), respectively, but a 0.138-SD decrease in HDL (mg/dL) in adults at the Bonferroni-adjusted level of significance (P < 0.0026).

**Conclusions**: A genetic predisposition to childhood BMI was associated with increased risk of type 2 diabetes and CAD in adult life. These results provide evidence supportive of a causal association between childhood BMI and these outcomes.