

**Abstract #49 (0346\_0513\_000062)**

## **PHYSICAL ACTIVITY AND CARDIOMETABOLIC HEALTH IN YOUTH WITH TYPE 2 DIABETES**

**Jana Slaght**, University of Manitoba, The Children's Hospital Research Institute of Manitoba; **Brandy Wicklow**, University of Manitoba, The Children's Hospital Research Institute of Manitoba; **Allison Dart**, University of Manitoba, The Children's Hospital Research Institute of Manitoba; **Elizabeth Sellers**, University of Manitoba, The Children's Hospital Research Institute of Manitoba; **Jonathan McGavock**, University of Manitoba, The Children's Hospital Research Institute of Manitoba

### **Background:**

Youth living with type 2 diabetes (T2D) are characterized by an increased cardiovascular disease (CVD) risk profile. It is unclear if regular daily physical activity (PA) modifies this CVD risk.

### **Objective:**

Main outcomes were HbA1c, ambulatory blood pressure (BP; 24 hr readings) and albuminuria (first morning urine). The main exposure, regular vigorous intensity ( $\geq 3$  days/week) PA was determined from a validated questionnaire (Adolescent PA Recall Questionnaire).

### **Methods:**

Using a cross-sectional design, we analyzed cardiometabolic risk factors among 164 youth with T2D from the *The Improving renal Complications in Adolescents with T2D through REsearch (iCARE)* cohort, stratified according to weekly vigorous intensity PA.

### **Results:**

Youth were  $15 \pm 3$  yrs, 78% lived rurally, 68% were girls, mean BMI Z score was  $2.4 \pm 1.1$  and HbA1c was  $9.6 \pm 2.6$ . Active youth (40%; n=67) achieved nearly twice the dose of PA than less active peers (176 vs 108 MET-HR/week; p=0.001). After adjusting for duration of diabetes, BMI Z score, sex and smoking, active youth displayed lower HbA1c (9.1%, vs 9.9% p = 0.052) and diastolic BP (70 vs 73 mmHg, p = 0.002) and diastolic load (20 vs 26%, p = 0.023) and were less likely to have proteinuria (OR: 0.40 95% CI: 0.19-0.84) and hypertension (OR: 0.39 95% CI: 0.16-0.95).

### **Conclusion:**

Among youth living with T2D, self-reported frequent vigorous PA is associated with lower cardiometabolic risk. These data need to be confirmed with a prospective experimental trial.