Progress Report for Physical Activity in Very Young Children with Type 1 Diabetes
November 2021

Background: Very young children with type 1 diabetes are an important but understudied group of people living with type 1 diabetes. As they have longer exposure to type 1 diabetes they have higher risk of long term complications and mitigating risk factors is very important. Although physical activity is encouraged for general health and has other specific benefits for type 1 diabetes such as insulin sensitivity it can be challenging to manage glucose levels. Limited research in this area suggests very young children with type 1 diabetes are less physically active than their peers.

Aim: This research project which will investigate the amount of physical activity very young children with Type 1 diabetes is the same as the general population of the same age to inform further education aimed at families of young children with type 1 diabetes.

Methods: Children less than 7 years of age will wear accelerometers to measure physical activity for 7 days and keep a diary of activities undertaken and food intake as well as wear continuous glucose monitors. Parents will complete a questionnaire regarding perceived barriers to physical activity and hypoglycaemia fear. The amount of moderate to vigorous physical activity will be compared to general population data. Secondary outcomes will include comparing to Australian guidelines and assessing perceived barriers to physical activity in carers of very young children with type 1 diabetes and exploring associations between physical activity amounts and diabetes specific measures including HbA1c, BMI Z score and hypoglycaemic events.

Ethics approval for this project was granted on the 17th November 2020 by the Hunter New England Human Research Ethics Committee, approval number 2020/ETH02274 and the trial is registered with Clinical Trials Notification. Recruitment and data collection is currently ongoing at 2 Australian sites, there was been a pause in study recruitment at one site due to public health orders restricting usual activities during the COVID-19 pandemic in mid-2021 which have now lifted. To date 11 of 42 participants have completed the study with a further 8 recruited. There has been no adverse events to report to date.