

Effectiveness of a physical activity pilot intervention in youth with Type 1 Diabetes: The ActivPals study.

F Mitchell¹, A Kirk¹, JJ Reilly¹, K Robertson²

¹Physical Activity and Health Group, University of Strathclyde, Glasgow, UK.

²Children's Diabetes Service, Yorkhill Hospital, Glasgow, UK.

Background: Type 1 Diabetes (T1D) is rising globally. Youth with T1D continue to suffer from poorer health and lower levels of physical activity (PA) than those without diabetes. The ActivPals study aimed to support young people with T1D to increase PA levels.

Methods: 20 youth (aged 7-16) with T1D were randomised to a pilot PA intervention (n=10) or control group. The Actigraph GT3X+ monitor measured PA at baseline and one-month follow-up to test the effectiveness of the intervention. PedsQoL scales (generic and diabetes module) were used to measure Quality of Life (QoL) in participants and parents at baseline and follow-up.

Results: Changes in PA in QoL were analysed using a two-way mixed ANOVA. The results showed a significant increase in Moderate to Vigorous PA (MVPA) in both intervention and control group from baseline to follow up ($p=0.03$), however there were no significant between group differences. Both groups reported significantly less overall diabetes 'problems' ($p=0.012$) and significantly less lifestyle 'problems' ($p=0.015$) at follow up. However, intervention and control participants also reported significant increases over time in 'problems' with daily diabetes routine ($p=0.022$). Parents reported increased worry about their child's diabetes at follow up, significant across both groups ($p=0.046$). There was no significant increase in reported hypoglycaemic occurrences despite increased MVPA.

Conclusions: A larger scale trial, with longer intervention period could significantly increase the MVPA levels and QoL in youth with T1D without significantly increasing hypoglycaemic episodes.

This study was funded by Yorkhill Children's Charity.