Executive problems in adolescents with type 1 diabetes are associated with poor metabolic control and low physical activity

Charlotte Nylander MD, PhD, Ylva Tindberg MD, PhD, Josephine Haas MD, PhD, Ingemar Swenne MD, PhD, Torun Torbjörnsdotter MD, PhD, Karin Åkesson MD, PhD, Eva Örtqvist MD, PhD, Jan Gustafsson MD, PhD, Elisabeth Fernell MD, PhD, Sweden

Background
Management of diabetes is demanding and requires efficient cognitive skills, especially executive functions. However, the impact of impaired executive functions on diabetes control has been studied only to a limited extent.

Methods
241/477 (51 %) of 12-18 year-old adolescents, with a diabetes duration of >2 years in Stockholm, Uppsala and Jönköping, Sweden, participated. Parents and adolescents completed questionnaires, including BRIEF, ADHD Rating Scale and demographic background factors. Diabetes related data was collected from the Swedish Childhood Diabetes Registry, SWEDIABKIDS.

Objective
To investigate the association between executive problems and diabetes control in adolescents with type 1 diabetes.

Results
Executive problems were for both genders associated with mean HbA1c > 70 mmol/mol, a large number of outpatient visits and low physical activity. Self-rated executive problems were more prevalent in girls, while parents reported these problems to a larger extent in boys.

Conclusion: Executive problems are related to poor metabolic control and low physical activity in adolescents with type 1 diabetes. Patients with executive problems need to be recognized by the diabetes team and the diabetes care should be organized to provide adequate support for these patients.

Correspondance: Charlotte.nylander@kbh.uu.se