

**שם:** תמר לוינסון פרופר

**שם העבודה:** The Association Between Disease-Specific Risk Factors and Disordered Eating Behaviors Among Adolescents with Type 1 Diabetes

**מנחה:** ד"ר רוני אלרון ברק ופרופ' שלומית שליטן

### Abstract

**Background-** Disordered eating behaviors (DEB), defined as preoccupation with food and weight, is more common in youth with type 1 diabetes (T1D) than among the general population. Among youth with T1D, DEB is associated with poor glycemic control and various medical complications. T1D treatment necessitates a special dietary regimen and intensive insulin therapy. These factors, along with the encumbrance of diabetes management, may contribute to the development of DEBs. The modified dual pathway model provides a theoretical explanation for the development of DEB in individuals with T1D, and proposes that they develop DEB through three mechanisms: (1) increased focus on food, (2) weight changes resulting from initiation of insulin therapy, (3) fluctuations in blood glucose (BG) levels associated with an inappropriate insulin dose. In addition, the treatment regimen for T1D includes intensive insulin therapy, involving either multiple daily injections (MDI) or continuous subcutaneous insulin infusion (CSII). The transition to CSII from MDI may affect DEBs and dietary intake, as it can normalize eating and enable eating patterns similar to those of the general population. However, it can lead to refocusing on nutrition and carbohydrate counting, in order to manage the insulin dose through CSII. The current study is the first that provides a broad analysis of the intersection of T1D management development of DEBs among youth. Specifically, this is the first study examining weight gain at the initiation of exogenous insulin, BG fluctuation, and implementation of CSII.

**Aim-** To validate the entire modified dual pathway model for T1D using a cross-sectional design, and to examine possible risk factors that may contribute to changes in DEB after implementation of CSII therapy.

## Methods-

**Cross-sectional-** In order to examine associations among constructs included in the modified dual pathway model, children and adolescents aged 10–21 years with T1D will be evaluated for DEB, dietary regimen, dietary restraint, hunger and satiety dysregulation, diabetes-specific negative affect, body dissatisfaction, weight gain at the initiation of exogenous insulin, HbA1c, insulin regimen, and BG fluctuation.

**Prospective study-** In order to assess risk factors that may contribute to changes in DEB before the implementation of CSII, children and adolescents, aged 10–21 years with T1D will be assessed in four timepoints: (1) 2 months before CSII initiation, (2) at CSII initiation, (3) 2 months after and (4) 6 months after initiation of CSII therapy. Participants will be evaluated for DEB, dietary regimen, diabetes-specific negative affect, BG fluctuation, HbA1c, height, weight, BMI and dietary intake.

**The importance of the study-** Examining the entire modified dual-pathway model is crucial for a better understanding of the development of DEB in those young patients with T1D. Understanding and expanding the knowledge regarding risk factors for DEB, and in particular risk factors specific to T1D, and examining the effect of initiating CSII on DEB and dietary intake of individuals with T1D is important. Understanding the clinical implications can help formulate recommendations with an impact on diabetes treatment. DEB tends to worsen over time thus, designing preventive efforts and early intervention for children and adolescents using findings that emerge from the study can be valuable.