



# Mental Health During Pregnancy and Postpartum in Mothers With Type 1 Diabetes

Sarah A.L. Price<sup>1,2,3</sup>

*Diabetes Care* 2022;45:1027–1028 | <https://doi.org/10.2337/dci22-0007>

Type 1 diabetes (T1D) has been associated with an increased risk of depression, anxiety, and other mental health disorders (1). Pregnancy is also recognized as a period of potentially increased susceptibility to poor mental health (2). Although both of these associations are well recognized and generally acknowledged, the combined impact of T1D and pregnancy on mental health has so far been variably described and has not included a large cohort of women.

Compared with women without T1D, women with T1D enter pregnancy with the increased demands of glucose self-management and an increased risk of pregnancy complications, including congenital anomalies, hypertensive disorders of pregnancy, and macrosomia (3). To mitigate these risks, women with T1D often have more frequent contact with maternity and diabetes health care providers. It could be anticipated that the burden of additional appointments and self-monitoring could diminish well-being in pregnancy and the postpartum period.

In previous studies, pregestational diabetes (4) and gestational diabetes mellitus (5) have been associated with an increased incidence of mental health conditions, including anxiety and depression, in pregnancy. These studies have also reported an association between mental health disorders and suboptimal glycemic control (4). Small retrospective

studies in women with T1D suggest increased anxiety in pregnancy compared with pregnant women without diabetes (6,7).

In this issue of *Diabetes Care*, Hall et al. (8) report the findings of a substudy of the Environmental Determinants of Islet Autoimmunity (ENDIA) study. ENDIA is a prospective pregnancy-birth cohort study involving over 1,400 women whose offspring have a first-degree relative, either a mother, father, or sibling, with T1D. Given their family history, all offspring in the ENDIA study will have an increased lifetime risk of developing T1D. Over 700 mothers in the ENDIA study were included in the substudy, representing a participation rate of 86% of the eligible cohort. A further 500 subjects were ineligible to participate, as they were recruited prior to the introduction of the mental health analyses.

In the present ENDIA substudy (8), the mental health of mothers with T1D is compared with that of mothers without T1D but whose offspring have a father or sibling with T1D. Mental health of mothers was assessed in the third trimester of pregnancy and postpartum period using two validated mental health questionnaires. Data regarding sociodemographic factors, history of mental health disorders, psychotropic medication use, and self-reported physical activity level were collected. The interaction between mental

health scores and glycemic control in late pregnancy was also explored. The mental health of the fathers and siblings with T1D was not assessed in this study.

Hall et al. (8) report that women with and without T1D had no difference in the Edinburg Postnatal Depression Scale (EPDS) and Perceived Stress Scale (PSS) in the third trimester of pregnancy and the postpartum period. The use of psychotropic medication and amount of physical activity did not differ between groups. In the third trimester of pregnancy, glycemic control did not correlate with EPDS or PSS scores (8). The data are largely reassuring and do not support previous smaller studies suggesting women with T1D have poorer mental health during pregnancy.

The findings of the current study are important for health care providers involved in the care of women with T1D during pregnancy for two reasons. First, the study does not suggest a difference in EPDS and PSS scores. This finding may be considered an endorsement of the increased multidisciplinary support women with T1D received during pregnancy. Although this type of care is usually routine practice in Australia, it is acknowledged that clinical care pathways are highly variable around the world. Second, this study represents a shift from focusing solely on physical health to appreciating the important role of mental health in maternity care. This will become

<sup>1</sup>Department of Medicine, University of Melbourne, Parkville, Victoria, Australia

<sup>2</sup>Department of Obstetric Medicine, Royal Women's Hospital, North Melbourne, Victoria, Australia

<sup>3</sup>Department of Diabetes and Endocrinology, Royal Melbourne Hospital, Parkville, Victoria, Australia

Corresponding author: Sarah A.L. Price, [sarah.price@unimelb.edu.au](mailto:sarah.price@unimelb.edu.au)

© 2022 by the American Diabetes Association. Readers may use this article as long as the work is properly cited, the use is educational and not for profit, and the work is not altered. More information is available at <https://diabetesjournals.org/journals/pages/license>.

See accompanying article, p. 1082.

increasingly important in a T1D population where the widespread use of continuous glucose monitoring in pregnancy provides women with a real-time picture of glycemic control. Clinicians will need to remain cognizant of the need to support both physical and mental health throughout pregnancy in women with T1D and to be inclusive of mental health care providers as a part of the multidisciplinary maternity team.

Some minor limitations to the study are articulated by the authors. The mental health assessment tools have known shortcomings, including the suboptimal assessment of anxiety and diabetes distress (9). Likewise, while HbA<sub>1c</sub> is a practical measure of glycemic control, it does not allow the assessment of glycemic variability. The analysis of the relationship between HbA<sub>1c</sub> and mental health scores was limited to late pregnancy and the postpartum period. Data from early pregnancy or the preconception period may have contributed to the description of mental health in women with T1D in other studies. These factors notwithstanding, the study by Hall et al. (8) is

the first large prospective cohort study to examine mental health during pregnancy in women with T1D.

In their article, Hall et al. (8) highlight that consideration of mental health in pregnancy is an important but often overlooked aspect of T1D management. The reported data are largely reassuring, but our ability to fully understand the mental health implications of T1D in pregnancy are still contingent on future longitudinal studies that examine mental health from the preconception period to late postpartum in a variety of national and international health care settings.

---

**Duality of Interest.** No potential conflicts of interest relevant to this article were reported.

#### References

1. Ducat L, Rubenstein A, Philipson LH, Anderson BJ. A review of the mental health issues of diabetes conference. *Diabetes Care* 2015;38:333–338
2. Woods SM, Melville JL, Guo Y, Fan MY, Gavin A. Psychosocial stress during pregnancy. *Am J Obstet Gynecol* 2010;202:61.e1–61.e7
3. Murphy HR, Bell R, Cartwright C, et al. Improved pregnancy outcomes in women with type 1 and type 2 diabetes but substantial clinico-clinic variations: a prospective nationwide study. *Diabetologia* 2017;60:1668–1677
4. Ásbjörnsdóttir B, Vestgaard M, Do NC, et al. Prevalence of anxiety and depression symptoms in pregnant women with type 2 diabetes and the impact on glycaemic control. *Diabet Med* 2021;38:e14506
5. Riffin L. Association between gestational diabetes and mental illness. *Can J Diabetes* 2020;44:566–571
6. Rasmussen B, Dunning T, Hendrieckx C, Botti M, Speight J. Transition to motherhood in type 1 diabetes: design of the pregnancy and postnatal well-being in transition questionnaires. *BMC Pregnancy Childbirth* 2013;13:54
7. Griffiths F, Lowe P, Boardman F, Ayre C, Gadsby R. Becoming pregnant: exploring the perspectives of women living with diabetes. *Br J Gen Pract* 2008;58:184–190
8. Hall M, Oakey H, Penno MAS, et al.; ENDIA Study Group. Mental health during pregnancy and postpartum in mothers with and without type 1 diabetes: the ENDIA study. *Diabetes Care* 2022;45:1082–1090
9. Levis B, Negeri Z, Sun Y, Benedetti A, Thombs BD; DEPRESSION Screening Data (DEPRESSD) EPDS Group. Accuracy of the Edinburgh Postnatal Depression Scale (EPDS) for screening to detect major depression among pregnant and postpartum women: systematic review and meta-analysis of individual participant data. *BMJ* 2020;371:m4022