

## DIABETES across the LIFECOURSE: Northern Australia Partnership

### Our Research Highlights for Policy and Practice

### August 2022

This Diabetes across the Lifecourse: Northern Australian Partnership brief  
(April 2022 to August 2022).

Further resources are available on our website, which can be accessed here:

<https://diabeteslifecourse.org.au>

Should you have any questions, or require further information, please contact us on  
[diabetespartnership@menzies.edu.au](mailto:diabetespartnership@menzies.edu.au) or ring (08) 8946 8698

#### **“I don’t really know what diabetes is”: A qualitative study exploring the experiences of Aboriginal and Torres Strait Islander young people aged 10-25 years living with type 2 diabetes in northern and central Australia.**

**Published in:** *Canadian Journal of Diabetes (In press)*

<https://www.sciencedirect.com/science/article/pii/S1499267122000958>

**Authors:** Weaver E, Freeman N, Mack S, Titmuss A, Dowler J, Corpus S, Hyatt T, Ellis E, Sanderson C, Connors C, Moore E, Silver B, Azzopardi P, Maple-Brown L, Kirkham R.

This study explored the experiences of young Aboriginal and Torres Strait Islander people living with type 2 diabetes in the Top End and Central Australian regions of the NT. Twenty-seven young people participated in semi-structured in-depth interviews from four primary health care sites. The study found that young people have nuanced reactions to their diabetes diagnosis – on the one hand, diabetes is normalised because it is widespread in communities, but young people also experience shame and strong negative emotions when diagnosed. Young people need support to better understand their diabetes and experience multiple barriers that prevent them from engaging in health promoting behaviours including complex lives and different levels of social support. Successful management requires support from health professionals and family and includes strengthening young people’s social networks and educational opportunities. We recommend future support systems are tailored to the specific needs of young people and co-designed with young people and their communities. Other recommendations include shifting norms and expectations about youth type 2 diabetes to reduce diabetes stigma, broaden social supports available to young people and consider the delivery of health information in youth-friendly environments.

#### **Prevalence and incidence of diabetes among Aboriginal people in remote communities of the Northern Territory, Australia: a retrospective, longitudinal data-linkage study.**

**Published in:** *BMJ Open 2022;12:e059716. Doi:10.1136/bmjopen-2021-059716.*

<https://bmjopen.bmj.com/content/12/5/e059716.long>

**Authors:** Hare MJL, Zhao Y, Guthridge S, Burgess P, Barr ELM, Ellis E, Butler D, Rosser A, Falhammar H\*, Maple-Brown LJ\* (\* authors contributed equally).

This research highlights the growing epidemic of type 2 diabetes among Aboriginal people in remote NT communities. The study, a collaboration between NT Health and Menzies School of Health Research, analysed health information from the NT Health Primary Care Information System relating to more than 21,000 Aboriginal people living in 51 remote communities across the NT. It found that the prevalence of diabetes among adults had increased to 29%. Concerningly, the prevalence was much higher in Central Australian communities, where 40% of adults had diabetes. In all age groups, more women were living with diabetes than men. The average age of people with a new diagnosis of diabetes during the study period was 38 years, with almost all people being diagnosed with type 2 diabetes. This is decades younger than the average age of onset in the national Australian population. The findings highlight the pressing need for partnering with Aboriginal communities and investing in strengthened systems of care for people living with type 2 diabetes and inter-sectoral diabetes prevention strategies that address the social determinants of health.

**Breastfeeding and infant growth in offspring of mothers with hyperglycaemia in pregnancy: The pregnancy and neonatal diabetes outcomes in remote Australia study.**

**Published in:** *Paediatric Obesity*. 2022 Jun;17(6);e12891 doi: 10.1111/ijpo.12891.

<https://onlinelibrary.wiley.com/doi/10.1111/ijpo.12891>

**Authors:** Longmore DK, Titmuss A, Barr E, Barzi F, Simmonds A, Lee IL, Hawthorne E, Derkenne R, Connors C, Boyle J, Zimmet P, O'Dea K, Oats J, McIntyre HD, Brown A, Shaw J, Maple-Brown LJ.

This study explored the growth of NT Aboriginal and Torres Strait Islander children within the PANDORA cohort between birth and 14 months of age. It focused on the influence of predominant breastfeeding at six months of age and maternal diabetes in pregnancy (type 2 diabetes or gestational diabetes). Children who were predominantly breastfed had lower body mass index (BMI) throughout infancy regardless of their mother's diabetes status. The study further explored the growth of children born to mothers with gestational diabetes. In these children, maternal obesity during pregnancy was associated with greater infant growth and accounted for some of the differences seen by breastfeeding status. This study highlights the importance of supporting breastfeeding for all women, and addressing maternal obesity, to improve health outcomes for children.

**Association between hyperglycaemia in pregnancy and growth of offspring in early childhood: The PANDORA study.**

**Published in:** *Pediatric Obesity*. 2022 May 29;e12932. doi: 10.1111/ijpo.12932. Online ahead of print.

<https://onlinelibrary.wiley.com/doi/10.1111/ijpo.12932>

**Authors:** Titmuss A, Longmore D, Barzi F, Barr E, Webster V, Wood A, Simmonds A, Brown ADH, Connors C, Boyle JA, Oats J, McIntyre HD, Shaw JE, Craig ME, Maple-Brown LJ.

This study explored the growth of NT Aboriginal and Torres Strait Islander children within the PANDORA cohort up to 5 years of age. It focused on the influence of being born to a mother with either type 2 diabetes in pregnancy or gestational diabetes, as well as the influence of maternal body mass index (BMI), on growth trajectories over time. Children born to mothers with type 2 diabetes or gestational diabetes had lower weight, length and BMI throughout infancy than children born to mothers without diabetes. However, by completion of follow-up, these children had similar weight, length and BMI. These differences remained after inclusion of maternal BMI in modelling. This was the first known study to include women with type 2 diabetes in exploration of childhood growth trajectories. The study highlights the need to better understand cardiometabolic risk from a young age, particularly the role of early blunted growth. We know that Canadian and United States First Nations children born to mothers with diabetes in pregnancy are at high risk of obesity and type 2 diabetes in childhood. We do not yet understand how altered growth trajectories in infancy, as shown in our study, may influence this risk. PANDORA Wave 2 (up to 13 years of age) may help provide some of these answers.

**Hyperglycemia in pregnancy and developmental outcomes in children at 18-60 months of age: the PANDORA Wave 1 study.**

**Published in:** *J Dev Orig Health Dis*. 2022 Apr 4:1-11. doi: 10.1017/S2040174422000101.

[Hyperglycemia in pregnancy and developmental outcomes in children at 18–60 months of age: the PANDORA Wave 1 study | Journal of Developmental Origins of Health and Disease | Cambridge Core](#)

**Authors:** Titmuss A, D'Aprano A, Barzi F, Brown ADH, Wood A, Connors C, Boyle JA, Moore E, O'Dea K, Oats J, McIntyre HD, Zimmet P, Shaw JE, Craig ME, Maple-Brown LJ.

Within the PANDORA cohort, a subgroup of Aboriginal and Torres Strait Islander and non-Indigenous children participated in the Wave 1 study at 18 months to 5 years of age. The focus was on their risk of developmental or behavioural difficulties. Developmental screening included a tool modified specifically for Aboriginal and Torres Strait Islander children, the ASQ-TRAK. Children born to mothers with type 2 diabetes in pregnancy or gestational diabetes were more likely to have concerns raised regarding their fine motor (5.3 x higher for type 2 diabetes, 4.0 x higher for gestational diabetes) and problem-solving skills (2.7 x higher for type 2 diabetes, 2.5 x higher for gestational diabetes). Higher maternal education reduced these concerns regarding problem solving skills. There were no differences in risk of behavioural difficulties among children born to mothers with type 2 diabetes, gestational diabetes or no diabetes. These results highlight that prevention of diabetes in pregnancy is a potential point of intervention to improve developmental trajectories of children. Addressing wider social determinants and inequities and building on the strengths of Aboriginal and Torres Strait Islander cultures and families, is likely to improve developmental outcomes.