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## **Long term impact of gestational diabetes and breastfeeding initiation on subsequent diabetes in mothers and offspring**

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The prevalence of type 2 diabetes mellitus (T2DM) has increased rapidly among First Nations (FN) people in Canada and notably among FN children in Manitoba. The relationship between GDM and subsequent diabetes in FN and non-FN mothers in offspring was assessed using administrative data (1981-2011) from the Population Health Data Repository at the Manitoba Centre for Health Policy and the Diabetes Education Resource for Children and Adolescents. The prevalence of GDM was 2.9% (11,906/404, 736 deliveries). GDM was 3-times higher in pregnant FN women than in non-FN pregnant women (6.7% versus 2.2%,  $p < 0.0001$ ). Postpartum diabetes occurred in 3.5% of non-FN women and 14.2% of FN women by 25 years post-delivery ( $p < 0.0001$ ). Of women with GDM, 17.2% (non-FN) and 21.4% (FN) developed postpartum diabetes within follow-up periods up to 30 years. Among a total of 1,184 T2DM offspring ( $\geq 7$  year) detected during the study period, 4.7% (non-FN) and 19.4% (FN) were exposed to GDM. The hazard ratio (HR) of GDM for postpartum diabetes was 10.6 in non-FN mothers and 5.4 in FN mothers. Among offspring, the HR of FN for T2DM was higher (5.3) than that for intrauterine exposure to GDM (3.1). Breast feeding initiation was recorded in 56% of FN mothers and 83% of non-FN mothers in Manitoba (1987-2011). Breast feeding initiation was associated with a 14% reduced risk of diabetes among FN mothers (HR 0.859) and a 23% reduced risk among non-FN mothers (HR: 0.768,  $p < 0.001$ ). A protective effect of breast feeding initiation for T2DM was observed among offspring during up to 24 years of follow-up (HR 0.821,  $p = 0.0317$ ). In conclusion, GDM was associated with increased postpartum diabetes in non-FN or FN mothers and T2DM in FN offspring in Manitoba. Breast feeding initiation was associated with a reduced risk of subsequent diabetes among FN and non-FN women and their offspring.

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