

Pregnancy Planning and Preconception Glycaemic Optimisation in Women With Pre-Existing Diabetes: Opportunities To Improve Early Developmental Health

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Background:

Pre-existing diabetes in pregnancy (PEDM) is associated with increased risks of congenital malformations and adverse perinatal outcomes. Many risks can be reduced through pregnancy planning and preconception care, particularly optimisation of glycaemic control prior to conception. However, unplanned pregnancy and low uptake of preconception care remain common. This study examined pregnancy planning behaviours among women with PEDM and their association with early pregnancy glycaemic control.

Methods:

A retrospective cohort study was conducted among women with PEDM attending two public hospitals in Sydney Local Health District between December 2019 and October 2024. Data were extracted from electronic maternity records following ethics approval. Variables included pregnancy planning status, preconception care indicators and HbA1c values before and during pregnancy. The primary outcome was achievement of target glycaemic control (HbA1c $\leq 6.5\%$).

Results:

Among 213 women with PEDM, HbA1c data were available for 199 and pregnancy planning status for 198. Overall, 66% (130/198) reported a planned pregnancy. Women with type 1 diabetes were more likely than women with type 2 diabetes to report a planned pregnancy (73.7% vs 50.5%, $p=0.001$). Women with planned pregnancies were significantly more likely to achieve target HbA1c levels than those with unplanned pregnancies (59.2% vs 23.2%, $p<0.001$). Greater engagement in pregnancy preparation was associated with improved glycaemic control.

Conclusions:

Pregnancy planning and preparation were strongly associated with improved glycaemic control during a critical developmental window. Integrating pregnancy intention discussions and preconception care into routine diabetes management may improve the periconception environment and support healthier starts for future generations.