DIABETES across the LIFECOURSE:
Northern Australia Partnership

NEWSLETTER

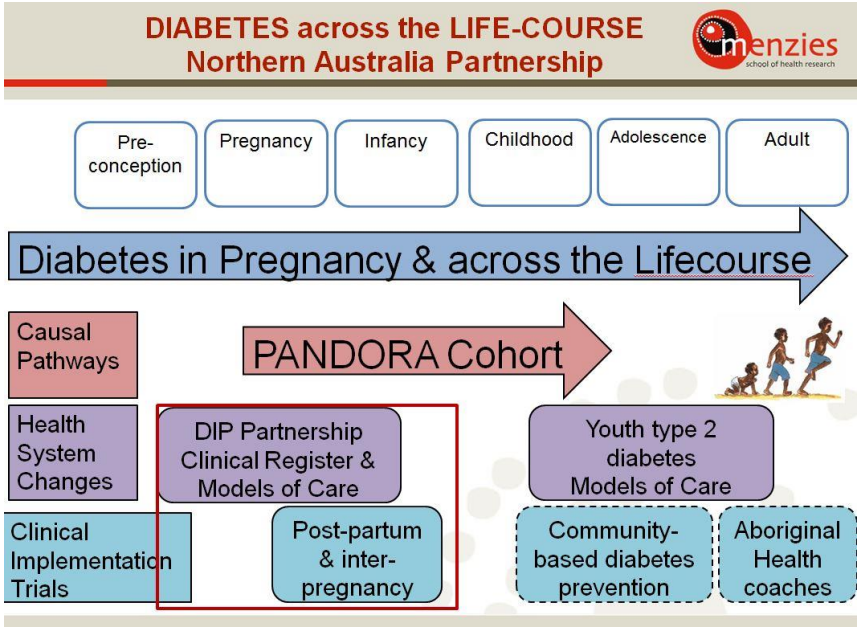
Welcome to the 2019 April edition of our Partnership newsletter

Over recent years, the focus of our Partnership has broadened. Guided by priorities identified by the Partnership's Indigenous Reference Group and Clinical Reference Group, our program now includes work on the prevention and management of diabetes and obesity in young people, with partners in the Kimberley region joining the NT and Far North Qld.

In light of this, the NT and FNQ Diabetes in Pregnancy Partnership has been renamed;
Diabetes across the Lifecourse: Northern Australia Partnership

We look forward to continuing our current programs and making progress on newly established priorities.

This edition of our newsletter provides the cumulative Key Findings summary from the NT Diabetes in Pregnancy (DIP) Clinical Register from (2011 until 2017). We will also be focusing on **healthy weight** *which is one of the five key focus areas for postpartum management of women who have DIP, alongside glucose checks, breastfeeding, smoke free and contraception. Partnership updates will also be included.*



Postpartum management of women with diabetes in pregnancy

The Key Five

NT Diabetes in Pregnancy Clinical Register:

Summary points of cumulative key findings from the NT DIP Clinical Register (November 2011 until December 2017) are provided below.

- There were **2119** births recorded from women on the NT DIP Clinical Register
- Of these births, **359** were to women with type 2 diabetes, and **1731** were to women with gestational diabetes
- For Indigenous women with diabetes in pregnancy, **30%** had type 2 diabetes
- **33%** of all women on the Clinical Register who had type 2 diabetes had babies who were large for gestational age
- For women on the Clinical Register who had gestational diabetes, **43%** delivered via ceasarean section, while **62%** of women with type 2 diabetes delivered via ceasarean section.

We are working to improve coverage of women on the Clinical Register. Please email us for copies of the Information for Women brochures or for further information.
ntdippartnership@menzies.edu.au

Or visit our website:dipp.org.au

SAVE the DATE

We are pleased to announce the date for our annual Educational Symposium, to be held
Friday 27th September 2019, 8am until 1pm
All welcome to join the **Clinical Reference Group** meeting afterwards, 1.30pm - 4pm.
Registration will be free, yet essential. More details available soon.

Diabetes and Pregnancy Workshops

Top End

A Diabetes and Pregnancy Workshop, facilitated by the RDH Maternity Educators, Diabetes teams and the Diabetes across the Lifecourse Partnership took place on Friday, March 29, 2019 in the Menzies building.

The workshop used a case study approach to examine issues affecting pregnancy, labour and birth in women with both gestational and pre-existing diabetes and their newborns. The pre-conception and post-natal period was also considered.

This workshop filled up quickly and was very well received! Planning is also underway to provide the workshop in regional locations of the Top End.

Central Australia

The Diabetes in Pregnancy: Across the Lifecourse Education Day, facilitated by the Partnership will take place on **Thursday June 6 2019 8:30am – 4pm** in the Baker Heart & Diabetes Institute Rubuntja Building Meeting Room, Alice Springs Hospital grounds.

A variety of Central Australian health professionals will examine issues affecting pregnancy and birth in women with both gestational and pre-existing diabetes and their newborns. The pre-conception and post-natal period will also be considered, highlighting intergenerational effects of diabetes in pregnancy. The 'Key Five' will also be explored.

Please contact Paula Van Dokkum, Central Australia Coordinator for more information, or to register your interest:
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Healthy weight in pregnancy

Kirby Murtha on behalf of the Partnership

Preventing obesity in women of reproductive age and focusing on healthy weight strategies before conception and between pregnancies is beneficial to overall health and the prevention of diabetes (1,2).

Weight and diabetes risk

A healthy weight at conception, appropriate weight gain during pregnancy and returning to a healthy weight after pregnancy are important goals for improving overall health, including the prevention and management of diabetes in current and future pregnancies (3-6).

Approximately half of women who become pregnant are now overweight or obese (4). Pre-pregnancy body mass index (BMI) is a key indicator of health outcomes for a woman and her baby. Underweight, overweight and obesity are associated with increased risk of pregnancy complications (5,7,8).

Obesity, excessive gestational weight gain and weight gain between pregnancies are identified risk factors for gestational diabetes (GDM) and type 2 diabetes (9-11). GDM risk increases twofold amongst women who are overweight (BMI 25-30kg/m^2), fourfold amongst women who are obese (BMI 30-35m^2) and an eightfold for women with a BMI over 35kg/m^2 (12). While even a small weight gain (1-2 BMI units) between pregnancies increases future GDM risk, postpartum weight loss of approximately 2 BMI units (approximately 6kg) amongst women who were overweight or obese at their index pregnancy has been shown to reduce future GDM risk by up to 80% (4,5,13). GDM results in an approximately sevenfold increase in lifetime risk of type 2 diabetes, with even higher rates seen amongst Aboriginal and Torres Strait Islander women (14,15).

Supporting a healthy weight gain during pregnancy

Monitoring weight is an important component of routine antenatal care. The recommended range of weight gain during pregnancy depends on a woman's pre-pregnancy BMI, see table below (3,6). Weight trackers such as the Queensland Health Pregnancy Weight Gain Charts can also assist with monitoring https://www.health.qld.gov.au/__data/assets/pdf_file/0026/153827/antenatal_wtoverwt.pdf

At the first available opportunity, pre-pregnancy weight and BMI should be recorded and a discussion had with the woman about her recommended weight gain range. Weight and gestational weight gain should then be monitored and reviewed at regular intervals throughout pregnancy.

Pregnancy can be a great motivator and opportunity for women to make healthy lifestyle changes . 'Eating for Two' is a common misconception; there is only a small increase in the amount of food a woman needs to eat during pregnancy whilst the requirement for certain micronutrients is higher, so the focus should be on dietary quality. It is important to adopt a non-judgemental and sensitive approach to discussing weight. Offer a referral to a dietitian for further healthy lifestyle and dietary support, and also refer for lactation support if required.

Pre-pregnancy BMI (kg/m^2)	**Rate of gain 2nd and 3rd trimester (kg/week) ***	**Recommended weight gain range during pregnancy (kg)**
<18.5 – underweight	0.45	12.5-18
18.5-24.9 – healthy	0.45	11.5-16
25-29.9 - overweight	0.28	7-11.5
≥ 30 - obese	0.22	5-9

*Calculations assume 0.5-2kg weight gain in first trimester

Recommendations to support health pregnancy weight gain include:

- Eat regular meals and choose foods from the core food groups (vegetables, fruit, wholegrains, low-fat dairy, lean meat and alternatives)
- Drink plenty of water and limit intake of sugary drinks (e.g. soft drinks, fruit drinks, cordial)
- Reduce intake of fried and processed foods, which tend to be high in saturated fat, sugar and salt.

- Aim for 30 minutes of low-moderate intensity exercise on most days of the week (unless contraindicated) – activities include walking, bike riding, swimming, yoga and Pilates, low impact aerobics or light resistance gym work.

As obesity increases the risk of GDM, women with a BMI ≥ 30 should receive an OGTT or HbA1c at entry to care, with a repeat OGTT at 24-28 weeks if negative (5). Women with a BMI ≥ 30 or pre-existing diabetes are also recommended to take a higher daily folic acid supplement of 5mg at least one month prior to conception and the first 3 months of pregnancy (5). It is recommended that all women take a 150ug iodine supplement daily before conception, during pregnancy and whilst breastfeeding (17).

Healthy weight in pregnancy: Key messages

- ◇ Discuss healthy weight and diabetes risk as appropriate with women of reproductive age
- ◇ Assess and monitor weight, BMI and gestational weight gain during pregnancy
- ◇ Encourage women to adopt a healthy diet, regular physical activity and support breastfeeding
- ◇ Offer follow up support to women who want to lose weight prior to pregnancy or postnatally

PANDORA Update

We completed PANDORA Wave 1 (a subset of the PANDORA cohort - Pregnancy and Neonatal Diabetes Outcomes in Remote Australia) in late 2018. The team travelled extensively across the NT for 3 years and visited over 400 mums and their children aged between 18 months and 5 years.

Wave 1 involved collecting biospecimens and a physical assessment, looking for early predictors of chronic disease. The data is currently being analysed and papers will be published in the next couple of years. We have recently received funding for PANDORA Wave 2 (age 6-10 years) and will be visiting the whole cohort, starting in late 2019.

PANDORA Follow up – the cohort of over 1100 women and children are now all over 2 years of age. Follow up questionnaires will continue until the children reach 3 years, along with medical records reviews of mother and child.

References

1. Hanson M, Barker M, Dodd JM, Kumanyika S, Norris S, Steegers E, et al. Series: Interventions to prevent maternal obesity before conception, during pregnancy, and post partum. The Lancet Diabetes & Endocrinology. 2017;5:65-76.
2.Agha M, Agha RA, Sandell J. Interventions to Reduce and Prevent Obesity in Pre-Conceptual and Pregnant Women: A Systematic Review and Meta-Analysis. 2014.
3. Commonwealth of Australia. Eat for Health: Australian Dietary Guidelines. National Health and Medical Research Council and Department of Health and Ageing; 2013.
4. The Royal Australian and New Zealand College of Obstetricians and Gynaecologists. Management of Obesity in Pregnancy. 2017.
5. Queensland Clinical Guidelines. Obesity in Pregnancy: Maternity and Neonatal Clinical Guideline. Queensland Government; 2015.
6. Institute of Medicine. Weight gain during pregnancy: reexamining the guidelines report brief. 2009.
7. National Institute of Health and Clinical Excellence. Weight management before, during and after pregnancy. 2010.
8. Santos S, Voerman E, Amiano P, Barros H, Beilin LJ, Bergstrom A, et al. Impact of maternal body mass index and gestational weight gain on pregnancy complications: An individual participant data meta-analysis of European, North American and Australian cohorts. BJOG : an international journal of obstetrics and gynaecology. 2019.
9. Farahvar S, Walfisch A, Sheiner E. Gestational diabetes risk factors and long-term consequences for both mother and offspring: a literature review. Expert Review Of Endocrinology & Metabolism. 2018:1-12.
10. Poston L, Caleyachetty R, Cnattingius S, Corvalán C, Uauy R, Herring S, et al. Series: Preconceptional and maternal obesity: epidemiology and health consequences. The Lancet Diabetes & Endocrinology. 2016;4:1025-36.
11. Schwartz N, Nachum Z, Green MS. Risk factors of gestational diabetes mellitus recurrence: a meta-analysis. Endocrine. 2016(3):662.
12. Chu SY, Callaghan WM, Kim SY, Schmid CH, Lau J, England LJ, et al. Maternal obesity and risk of gestational diabetes mellitus. 2007:2070.
13. Kim C. Maternal outcomes and follow-up after gestational diabetes mellitus. 2014:292.
14. Bellamy L, Casas J-P, Hingorani AD, Williams D. Articles: Type 2 diabetes mellitus after gestational diabetes: a systematic review and meta-analysis. The Lancet. 2009;373:1773-9.
15. Chamberlain CR, Oldenburg B, Wilson AN, Eades SJ, O'Dea K, Oats JJ, et al. Type 2 diabetes after gestational diabetes: greater than fourfold risk among Indigenous compared with non-Indigenous Australian women. Diabetes/metabolism research and reviews. 2016;32(2):217-27.
16.Birdsall KM, vyas S, Khazaezadeh N, Oteng-Ntim E. Maternal obesity: a review of interventions. 2009:494.
17. National Health and Medical Research Council. NHMRC Public Statement: Iodine supplementation for pregnant and breastfeeding women. 2010.

Your feedback and contributions are welcome.
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