

Type 1 Diabetes in Pregnancy

Welcome to the service

Firstly, congratulations and welcome to the Women's and Children's Hospital (WCH) Women's Diabetes Education service. We are a small team of Diabetes Educators and Physicians that will work with you to navigate pregnancy and the ups and downs of Type 1 Diabetes. It is a big job, but you are not alone. We look forward to working with you on your journey.

Pregnancy and Type 1 Diabetes: We highly recommend looking at the National Diabetes Service Scheme (NDSS) website for information relating to type 1 diabetes and pregnancy - both how diabetes can impact your pregnancy, and, how pregnancy can impact your diabetes. Please scan the QR code or visit: www.ndss.com.au/about-diabetes/pregnancy/type-1-diabetes/



HbA1c targets: (3 month glucose average)

Conception and 1st trimester = $\leq 6.5\%$

2nd and 3rd trimester: $\leq 6\%$

Your HbA1c: _____

Date: _____

This test will be repeated every 2-3 months in pregnancy. Achieving a HbA1c within range before and during pregnancy has many benefits, including reduced risks of:

- Defects of the baby's heart, brain and spine.
- Miscarriage and early pregnancy loss
- Large or small baby
- High blood pressure and pre-eclampsia
- Preterm birth
- Birth complications (caesarean section, shoulder dystocia and birth trauma)
- Nursery admission for baby
- Low blood sugars in the baby after birth

Don't worry if you have never had an HbA1c this low ever in your life. With the right support from your healthcare team you will be surprised at what you can achieve.



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Continuous Glucose Monitoring (CGM): Did you know that CGM is fully subsidised for those with Medicare by the Australian Government for pre-pregnancy planning, during pregnancy and up to 3 months after birth? Please ask your diabetes educator or endocrinologist for more information.

- **CGM target range:** 3.5 – 7.8mmol/L
- **Target time in range:** 70%

Monitoring your Blood Glucose Levels (BGL's): In pregnancy we look at making adjustments based on how high your BGLs go after eating (rather than only what your BGLs are before you eat). Please remember that the targets we work towards in pregnancy are *impossible* to get all the time - so be kind to yourself.

- **Fasting target:** 5.3 mmol/L or below (without hypos)
- **1 hour after meal target:** 7.8mmol/L or below
- **2 hours after meal target:** 6.7mmol/L or below

There are more than 40 factors that affect BGLs. Therefore, the more information we have when reviewing your BGLs the better; for example, we find it very helpful if you make notes if you have been unwell, stressed or have increased / reduced physical activity.

Insulin: Please record your pre-pregnancy insulin doses. We will refer to this once your baby is born. A good idea is to print a copy and file it in your orange pregnancy record so we can easily locate it later.

Reusing the same site can lead to the fatty tissue under your skin becoming hard and bumpy (lipohypertrophy). Insulin is not absorbed evenly in these areas and can lead to unexpectedly high or low BGLs. It is important to remember to:

1. *change your needle for each use.*
2. *change your injection site each time.*

For more information

Women's Diabetes
Women's and Children's Hospital
72 King William Rd, North Adelaide SA 5006
Telephone (08) 8161 8823
Email: womensdiabetes@sa.gov.au



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Pre-meal blousing: Food affects your BGL within minutes and fast-acting insulin, like NovoRapid® (insulin aspart), can take up to 20 minutes to start working. If you are using NovoRapid®, it is recommended to have your meal bolus **prior** to eating. By doing this you can reduce your glucose readings after meals.

- **First trimester** - Inject 10-15 minutes before you start eating.
- **Second trimester** - Inject 20-30 minutes before you start eating.
- **Third trimester** - Inject 30-40 minutes before you start eating.

Hypoglycaemia or "Hypos" (low blood sugar levels):

- The symptoms of hypos often change in pregnancy.
- Carry hypo treatment with you at all times.
- You are more at risk of having low BGLs in pregnancy.
- Remember to treat low BGLs with fast-acting carbohydrates.
- **Low BGL in pregnancy is 3.5mmol/Lt or below.**
- *Try not to over treat hypos as you can end up with rebound high sugar levels.*
- **Remember:** too many hypos can cause you to lose your hypo awareness.

Glucagon: We strongly recommend you have in-date glucagon at home, and someone trained with how to administer it. If you need a script, please notify the Physician at your next appointment.

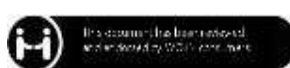
Exercise: We encourage all pregnant women to aim for 30-60 minutes of moderate physical activity most days as recommended by the National Health and Medical Research Council. We understand exercise can be difficult with type 1 diabetes as it will make insulin work better which increases the risk of hypos. If exercise is not part of your current routine, we encourage you to try some low-impact exercises, such as walking, yoga, or swimming.

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Carbohydrate counting: Do you know how to count carbohydrates? This is something we highly encourage you to work towards, for best possible glucose management in pregnancy. Counting carbohydrates will also give you more control over what you eat day to day as we can give you a way to calculate insulin doses.

To learn more about carbohydrate counting please scan this QR code or visit <https://www.ndss.com.au/services/support-programs/carb-counting-online/> for resources on carbohydrate counting developed by the NDSS. If you need extra support with carbohydrate counting or nutritional advice you can ask to speak with the WCH dietitian.

Recommended modules:

Module 1 - Program overview

Module 2 - Identifying foods that contain carbs

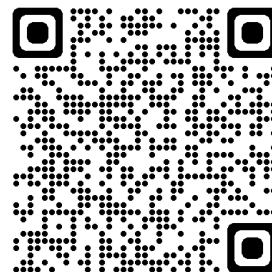
Module 7 - Introduction to carb counting in grams (part 1)

Module 8 - Carb counting in grams (part 2)

Module 9 - Working out carbs from a label

Module 10 - Tools for carb counting

Module 11 - Counting carbs in recipes



You may find it easier for optimal glucose control if you have smaller meals with small snacks in between rather than 3 large meals as it reduces your glucose load. Remember to also be mindful of the recommended serves of carbohydrates:

- **Main meals** = 30-45 grams of carbohydrates
- **Snacks** = 15-30 grams of carbohydrates

	Breakfast	Snack	Lunch	Snack	Dinner	Snack
Recommended Carbohydrates	30-45g	15-30g	30-45g	15-30g	30-45g	15-30g
Example						
Carbohydrate Total in Meal	45g	15g	45g	15g	45g	30g

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This document has been reviewed and endorsed by WCH dietitians.



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Recommended supplements (in addition to your routine pregnancy supplements):

- **Folic-Acid 2.5-5mg daily** from 3 months pre-conception until 12 weeks of pregnancy.
- **Aspirin 100–150 mg daily with the evening meal** except if advised against by your doctor:
 - > from 12 weeks of pregnancy.
 - > usually stopped at 36 weeks of pregnancy.
- **Calcium supplementation** (total 1.5 g daily including dietary calcium) from 12 weeks of pregnancy.

Eye checks: During pregnancy there is increased risk of diabetes-related eye disease called retinopathy. We highly recommend for all women with type 1 diabetes have and eye check in first trimester (unless performed within 3 months prior to conception).

Insulin pumps:

- Print a copy of **pre-pregnancy** settings and file it in your orange pregnancy record so we can easily locate it.
- [Save your pre-pregnancy basal/bolus rates on your pump.](#)
- Try to change your infusion set every 2-3 days. Longer wear may result in poor insulin absorption and can lead to higher BGLs.
- Please ensure you can upload your pump data.

Pump failure plan - Please ensure you have an insulin pump failure plan. have:

- insulin pen (eg NovoPen®) and needles for injection.
- script / supply for long acting and short acting insulin.
- Machine that can check ketones and ketone strips
- Keep a record of your most recent basal, bolus and correction settings in case you need to restart basal / bolus injections.

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Ketones and sick days: Ketones are a result of insufficient insulin and can be dangerous to you and your baby. It is important that you have a way to check your ketones – particularly during pregnancy.

- Do you have a machine that can check your ketones?
- Do you have ketones strips? If you don't have ketones strips – please order some.
- Do you have a sick-day plan?

Please let us know if you don't have a sick-day plan as this is very important in pregnancy.

We suggest testing your ketones if:

- you're feeling unwell (even if your BGL is in target)
- your BGL remains > 12 mmol/L for 3-4 hours (even if you're feeling well).
- vomiting occurs, particularly if two meals are missed.
- you have not had enough insulin: missed insulin dose, insulin pump malfunction, improper storage of insulin.
- **IF blood ketones ≥ 0.6 mmol/L** follow your sick day action plan.
- **IF blood ketones are above 1.0 mmol/L** please contact the women's diabetes education service or women's assessment on 08 8161 7530 and **ask to speak to the on-call women's physician** for advice.

Antenatal expressing: We encourage all women with diabetes in pregnancy who wish to breastfeed to consider antenatal expressing from 37 weeks. Please ask your midwife or doctor for more information at your next appointment.

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Support: You will be well supported by a multi-disciplinary team of diabetes and pregnancy specialists including:

- **Endocrinologist / obstetric physician** (MCC clinic) is a medical specialist who will help with the development of your diabetes management plan, including any referrals. They will review every 2, 4 or 6 weekly according to the stability of your glucose levels and risk of pregnancy complications.
- **Diabetes educators** will empower you with knowledge and guidance to understand diabetes in pregnancy and help overcome any challenges. The diabetes educator will regularly touch base with you in between your endocrinology / obstetric physician appointments. You can contact the diabetes educators Monday to Friday by our contact details at the bottom left of this page.
- **Obstetrician** provides medical care to manage complex or high-risk pregnancies and births.
- **Registered midwives** will provide you with support during pregnancy, labour, birth and the postpartum period.
- **Dietitian** can provide you with education and support on understanding carbohydrates, carbohydrate counting and nutrition for pregnancy and diabetes.
- **Women's Assessment** are available 24/7 for anything urgent relating to your pregnancy – you can call on 8161 7530. **Please note: if you have concerns relating to your diabetes** please ask to speak to the "obstetric physician on call".
- **Private patients:** Your health care team will ensure you are linked in with a private physician or endocrinologist who will work with you during your pregnancy.

We wish you all the best with your pregnancy journey.

Regards, The WCH Women's Diabetes Team

For more Information:

- Contact your diabetes team – see contact details on bottom of page.
- SA Pharmacy Medicines Information Service Phone: (08) 8161 7555 (9am–5pm Mon-Fri) Email: medinfo@sa.gov.au

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