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Tandem Control-IQ in Pregnancy

The Tandem Control-IQ insulin pump has an indication for use in pregnancy. Recent research has demonstrated the effectiveness of this system for improving glucose in pregnancy and it is widely used in the Calgary Diabetes in Pregnancy clinics. This document summarizes guidelines based on current practice.

Preconception

- Strongly consider use of **sleep mode** activity 24/7 with optional exits for exercise to optimize glycemic control pre-conception. Use 2 sleep schedules (2000 to 0800 AND 0800 to 2000) to avoid inadvertent exits out of sleep activity.
- Give **manual correction bolus before bed** if glucose is elevated and the system recommends it.
- **ISF**: Adjust ISF to 90/TDD every 1 to 2 weeks. Use the weekly average TDD.
- **Basal rates**: Set programmed rates to reflect total basal dose on Tandem Source report.
- **Carb Ratio**: 400/weekly average TDD (or stronger).
- **Pre-bolus** 10 to 15 min before meals.
- Review the need to use fewer CHO to treat/prevent lows (i.e., 4-8g of CHO)

First trimester

- Use **sleep mode** activity24/7 with optional exits for exercise. Use 2 sleep schedules (2000 to 0800 AND 0800 to 2000) to avoid inadvertent exits out of sleep activity.
- Give **manual correction bolus before bed** if glucose is elevated and the system recommends it.
- **ISF**: Adjust ISF to 90/TDD every 1 to 2 weeks. Use the weekly average TDD.
- **Basal rates**: Set programmed rates to reflect total basal dose on Tandem Source report.
- **Carb Ratio**: 400/weekly average TDD.
- **Bolusing**:
  - **Pre-bolus** 10 to 15 minutes
  - Don't reduce correction bolus suggested when glucose is under 6.1 mmol/L (click X on screen if asked "Reduce Bolus Correction?")



- Review the need to use fewer CHO to treat/prevent lows (i.e., 4-8g of CHO)

Second trimester

- Use **sleep mode** activity 24/7 with optional exits for exercise. Use 2 sleep schedules (2000 to 0800 AND 0800 to 2000) to avoid inadvertent exits out of sleep activity.
- Give **manual correction bolus before bed** if glucose is elevated and the system recommends it.
- **ISF**: Adjust ISF to 90/TDD every 1 to 2 weeks. Use the weekly average TDD.
- **Basal rates**: At and after 20 weeks gestation, program basal rates to be approximately 25% more than total daily basal dose delivered.
- **Carb Ratio**: 400/weekly average TDD.
- **Bolusing**:
  - Set **Carb Ratio** = 400/TDD or stronger
  - **Pre-bolus** 20 to 30 minutes with increasing insulin resistance
  - Don't reduce correction bolus suggested when glucose is under 6.1 mmol/L (click X on screen if asked "Reduce Bolus Correction?")



- Review the need to use fewer CHO to treat/prevent lows (i.e., 4-8g of CHO)

Third trimester

- Use **sleep activity** 24/7 with optional exits for exercise. Use 2 sleep schedules (2000 to 0800 AND 0800 to 2000) to avoid inadvertent exits out of sleep activity.
- Give **manual correction bolus before bed** if glucose is elevated and the system recommends it.
- **ISF**: Adjust ISF to 90/TDD every 1 to 2 weeks. Use the weekly average TDD.
- **Basal rates**: Program basal rates to be approximately 25% more than total daily basal dose delivered.
- **Bolusing**:
  - Set **Carb Ratio** = 400/TDD or stronger
  - **Pre-bolus** 30 to 45 minutes with increasing insulin resistance
  - Don't reduce correction bolus suggested when glucose is under 6.1 mmol/L (click X on screen if asked "Reduce Bolus Correction?"
- Review the need to use fewer CHO to treat/prevent lows (i.e., 4-8g of CHO)

- Confirm delivery plan. **MD: Enter orders** in CC.
- **Enter post partum profile** and provide counselling.
  - **Post partum settings**:
    - **Basal rates** = 2/3 pre-pregnancy basal rates
    - **ISF** 10 to 20% weaker than pre-pregnancy
    - **Carb Ratio** 10 to 20% weaker than pre-pregnancy
    - Note: If pre-pregnancy settings aren't known, consider making all post-delivery settings 50% weaker than in the 3rd trimester [Double the pre-pregnancy carb ratio and ISF to reduce meal bolus/corrections by 50%]

During Delivery

- **Continue sleep activity** throughout labour. Exit sleep activity, into regular Control IQ if glucose is running low.
- **Switch to postpartum profile** at the start of pushing for vaginal delivery, or just prior to (within 1 h) caesarean sections (or immediately postpartum, if the previous options were not feasible).

Post Partum

- Exit sleep activity, into regular Control IQ if glucose is running low, or close to low. Consider exercise mode if necessary.
- Post partum settings:
  - **Basal rates** = 2/3 pre-pregnancy basal rates
  - **ISF** 10 to 20% weaker than pre-pregnancy
  - **Carb Ratio** 10 to 20% weaker than pre-pregnancy
  - **Shorten pre-bolus time** (10 to 15 minutes or less).
  - Note: If pre-pregnancy settings aren't known, consider making all post-delivery settings 50% weaker than in the 3rd trimester [Double the pre-pregnancy carb ratio and ISF to reduce meal bolus/corrections by 50%]
- Review the need to use fewer CHO to treat/prevent lows (i.e., 4-8g of CHO)
- If **frequent hypoglycemia** with breastfeeding, **turn off sleep activity**, or **use exercise activity 24/7.**

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1. Nandam, Neeharika et al. “Tandem T:Slim X2 Insulin Pump Use in Clinical Practice Among Pregnant Individuals With Type 1 Diabetes: A Retrospective Observational Cohort Study.” *Cureus*vol. 16,1 e52369. 16 Jan. 2024, doi:10.7759/cureus.52369 [Retrospective cohort study involving 8 patients
2. Wang, Xinye Serena et al. “Real-world use of Control-IQ™ technology automated insulin delivery in pregnancy: A case series with qualitative interviews.” *Diabetic medicine : a journal of the British Diabetic Association* vol. 40,6 (2023): e15086. doi:10.1111/dme.15086 [Case series of 4 patients which included qualitative interviews.]
3. Closed-Loop Insulin Delivery in Type 1 Diabetes in Pregnancy or at Closed-Loop Insulin Delivery in Type 1 Diabetes in Pregnancy: The CIRCUIT Randomized Clinical Trial JAMA. 2025 Oct 24:e2519578. doi: 10.1001/jama.2025.19578. [Multi-centre RCT of 94 pregnant women with type 1 diabetes. Women using Control-IQ had increased pregnancy-specific time in range compared to standard insulin delivery (65.4% versus 50.3%)]