Table 1: HbA1c and CGM goals for pregnant women with T1D[†]

	Measures	Aim
HbA1c when planning pregnancy	Measures glycated HbA1c, which reflects glycaemic levels over the past 3-4 months	<7.0% (<53 mmol/mol) <6.5% (<48 mmol/mol) if feasible
HbA1c first trimester		<6.5% (<48 mmol/mol)
HbA1c second and third trimester		<6.0% (<42 mmol/mol)[215]
Percentage of sensor data obtained	The proportion of possible over obtained readings by the CGM device; provides a measure of confidence in all data-derived metrics	≥70% of data during the collection period[38]
TIR when planning pregnancy	Measures the percentage of time spent between 3.5–7.8 mmol/L (63–140 mg/dL) for pregnancy if possible or between 3.9–10.0 mmol/L (70–180 mg/dL) otherwise	>70% of time per day (i.e., 16h 48 min)
TIRp	Measures the percentage of time spent in consensus target glucose range in pregnancy between 3.5–7.8 mmol/L (63–140 mg/dL)	>70% of time per day (i.e., 16h 48 min)* from as early as possible following pregnancy confirmation
TBRp <3.5 mmol/L (63 mg/dL)	Measures the percentage of time spent with glucose <3.5 mmol/L (<63 mg/dL)	<4% of time per day (1h)
TBR <3.0 mmol/L (54 mg/dL)	Measures the percentage of time spent with glucose <3.0 mmol/L (<54 mg/dL)	<1% of time per day (15 min)
TARp >7.8 mmol/L (140 mg/dL)	Measures the percentage of time spent with >7.8 mmol/L (>140 mg/dL)	<25% of time per day (6h)^

Mean sensor glucose	A measure of the mean 24h glucose concentration calculated across all recorded sensor glucose readings.	Suggested mean sensor glucose of 6.0-6.7 mmol/L (108-120 mg/dL), based on expert opinion (evidence level E)
GMI	A measure of short-term glucose levels that can be used to predict long-term glucose exposure; the GMI is expressed in the same units as HbA1c (e.g., as a percentage or mmol/mol) for comparative purposes, but they are usually not identical	No international consensus target, but <42mmol/mol which is comparable (but not equivalent to) an HbA1c of 6.0% is suggested
CV	A measure of dynamic GV expressed as percentage CV and calculated as 100 × (SD divided by mean glucose)	≤36% of glucose variability in T1D,[38] ≤30% in T2D [216,217]
TIRp intrapartum	Measures the percentage of time spent in consensus target glucose range between 3.5–7.8 mmol/L (63–140 mg/dL) during labor and delivery	>70% of time intrapartum
TIR postpartum	Measures the percentage of time spent in consensus target glucose range between 3.9–10.0 mmol/L (70–180 mg/dL) following the delivery	>70% of time per day

† HbA1c is known to be an inconsistent marker of glycaemia during pregnancy, emphasizing the value of CGM metrics

*Percentage of TIRp is specific for pregnant women with T1D. Percentage of TIRp for pregnant women with T2D and GDM should probably be greater than 70% but exact amount is unknown at this time due to scarcity of data.

^ Percentage of TARp is specific for pregnant women with T1D. Percentage of TARp for pregnant women with T2D and GDM should be much less than 25% but exact amount is unknown at this time due to scarcity of data.

TIR, Time in range; TIRp, Time in range in pregnancy; TBRp, Pregnancy Time below range; TBR, Time below range; TARp, Pregnancy Time above range; GMI, Glucose Management Indicator; CV, Coefficient of variation; GV, Glucose variability; SD, Standard deviation

Table 2: Overview of the different available AID systems and suggested settings for pregnancy

AID system	Algorithm and glucose targets	Data in Pregnancy, Approval for Pregnancy	Suggested Pump settings/features for pregnancy[a,b]
CamAPS FX®	Cambridge treat-to-target adaptive MPC with mylife YpsoPump®, DANA Diabecare RS® and DANA-i® insulin pumps (with Dexcom G6/G7 or Freestyle Libre 3 CGM), recommends customizable glucose targets of between 4.4-5.5 mmol/L (80-100 mg/dL) during pregnancy. Ease-off function to temporarily increase glucose target by approximately 2.5 mmol/L (45 mg/dL) and stop insulin delivery when glucose <7.7 mmol/L (<139 mg/dL); Boost function to temporarily increase insulin delivery by approximately 35% (until target is reached).	Data from RCT available.[61] Approved in >15 countries (UK, across Europe, Australia, New Zealand, USA and Canada)	Personalized glucose target recommended setting of 5.5 mmol/L (99 mg/dL) before 16 weeks gestation, and 5.0 mmol/L (80-90 mg/dL) from 16 weeks until delivery. Overnight targets of 4.5 mmol/L (80 mg/dL) may be applicable from 22:00-06:00 hr, from 20 weeks gestation. Use Boost as needed for 2-4 hrs after larger meals from 20 weeks gestation. Update weight every trimester during pregnancy, as needed. Bolus 10-15min before meals throughout pregnancy
Diabeloop®	Diabeloop Generation 1 (DBLG1) algorithm with Dexcom G6 CGM, customizable glucose targets between 5.5-7.2 mmol/L (99-130 mg/dL). Adaptable features include: Aggressiveness in hyperglycaemia (conditions the administered boluses when glucose >10 mmol/L [>180 mg/dL]), aggressiveness in normoglycaemia (conditions the basal rate provided by the system when glucose values are between 3.8-10 mmol/L [70-180 mg/dL]), and aggressiveness at breakfast, lunch, and dinner (conditions the amount of bolus in each of the intakes). CI ratios and insulin sensitivity cannot be adapted.	No data available from RCT No pregnancy indication	Lowest glucose target 5.5 mmol/L (99 mg/dL), increase aggressiveness in hyperglycaemia, normoglycaemia and at meals as needed.

AID system	Algorithm and glucose targets	Data in Pregnancy, Approval for Pregnancy	Suggested Pump settings/features for pregnancy[a,b]
iLet[®]	Adaptive closed-loop algorithm with Dexcom G6 or Dexcom G7, customizable glucose targets between 6.1-7.2 mmol/L (110-130 mg/dL) in 0.6 mmol/L (10 mg/dL) increments, listed as "lower", "usual", and "higher"	No data available from RCT No pregnancy indication	Lowest glucose target of 6.1 mmol/L (110 mg/dL), update weight listed in pump with GWG.
Medtronic MiniMed 670/770G[®]	Treat to target PID technology with insulin feedback with Guardian[®] 3 CGM, non-customizable glucose target 6.7 mmol/L (120 mg/dL), temporary target of 8.3 mmol/L (150 mg/dL).	Data from small pilot RCT available No pregnancy indication	Glucose target 6.7 mmol/L (120 mg/dL, non-customizable), active insulin time of 2 hours.
Medtronic MiniMed 780G[®]	PID technology with insulin feedback with the most advanced SmartGuard™ technology, with Guardian 3 or 4 CGM, customizable glucose target 5.5-6.7 mmol/L (99-120 mg/dL), in 0.6 mmol/L (10 mg/dL) increments, temporary target of 8.3 mmol/L (150 mg/dL).	Data from RCT available[62] CE mark for use in T1D pregnancy in Europe	Glucose target of 5.5 mmol/L (99 mg/dL), active insulin time of 2 hours, if safe meal bolus[b] occurs when strengthening meal CI ratios, then relax CI ratios and add extra "fake carbohydrates" with meals. Bolus 10-15min before the meals, also later in pregnancy.
Omnipod 5[®] (SmartAdjust)	MPC algorithm with Dexcom G6 CGM, Dexcom G7 CGM, or FreeStyle Libre 2 CGM, customizable glucose targets between 6.1-8.3 mmol/L (110-150 mg/dL) in 0.6 mmol/L (10 mg/dL increments)	No data available from RCT No pregnancy indication	Lowest glucose target of 6.1mmo/L (110 mg/dL), Correction factors need to be lowered in the second and third trimesters, Shorter insulin action is needed (2-3 hours), Many additional correction doses are likely to be needed; especially postprandially, If glucose is <6.1 mmol/L (110 mg/dL) and the glucose arrow is trending down, manually entering the glucose value does not reduce the amount of insulin recommended for the bolus, turn off reverse correction. Exit AID overnight as needed.

AID system	Algorithm and glucose targets	Data in Pregnancy, Approval for Pregnancy	Suggested Pump settings/features for pregnancy[a,b]
Tandem t:slimX2 or Tandem Mobi with Control-IQ® or Control-IQ+ technology	Treat to range MPC algorithm, with Dexcom G6 CGM, Dexcom G7 CGM, and Freestyle Libre 2-Plus CGM, non-customizable target range options Responsive to user basal rate and sensitivity adjustments. Sleep activity range 6.2-6.7 mmol/L (112-120 mg/dL) which can be used 24h a day with optional exits to regular control IQ activity target range 6.2-8.8 mmol/L (112-160 mg/dL), or exercise activity range 7.8-8.8 mmol/L (140-160 mg/dL).	RCT data available[63, 97] No pregnancy indication	Use Sleep Activity day and night, teach users not to accept to reduce the bolus correction when glucose is under 6.1 mmol/L (110 mg/dL), use "super bolus" technique when possible[d], need to split boluses for those that exceed 25 units or use U200 off label. Strengthening carbohydrate-insulin ratios, basal settings and sensitivity. Bolus 10-15min before the meals, later in pregnancy as needed up to 30-45 min before the meals.
Open Source Systems (Do-it-yourself APS) (examples, Loop[*] Android APS Trio) *Loop algorithm is now commercially available with the Sequel Twiist system	MPC algorithm with Dexcom G6 CGM or Dexcom G7 CGM or Freestyle Libre. Fully customizable glucose targets. Lower user-set targets can be temporarily activated before meals to increase insulin delivery before eating, to help with postprandial glucose rises. Program custom temporary override settings for future use. For example post-meal high of 120-130% for 2-3 hours. Safety settings are individually set by user.	No data from RCTs No pregnancy indication	Personalized glucose targets. Recommended daytime target of 5.0- 5.5 mmol/L (90-99 mg/dL) before 16 weeks gestation. If glucose variability low, a nighttime target of 5.0 mmol/L (90 mg/dL) or less can be considered. After 16 weeks consider lower targets. Liberally use post-meal high custom override. Consider if premeal target provides better results than premeal bolusing since bolusing shuts off the lower pre-meal target. For Loop users consider using the "LolliPop" – (30 minutes) food absorption time at meals after 16 weeks. Consider increasing the auto-bolus – microboluses from the default of 40% if user regularly misses food boluses. Learning about new system features and complete training modules or review system-specific resources prior to implementing new feature updates during pregnancy.

Abbreviations: AID, automated insulin delivery; CI, carbohydrate-to-insulin ratio; CGM, continuous glucose monitoring; MPC, model predictive controller; PID, proportional integral derivative; T1D, type 1 diabetes.

[a]For all systems, pump settings (basal rates, CIs, insulin sensitivity factors, and active insulin time) should be adjusted for manual and automated modalities as appropriate for stage of pregnancy and individualized care.

[b]Safe meal bolus refers to a meal bolus amount that is adjusted downwards due to various factors that the algorithm considers such as hypoglycaemia risk prediction within the next 4 hours, active insulin on board, and total daily insulin dose.

[c]Reverse correction refers to a calculated dose of insulin lower than that strictly derived from the CI ratio when the glucose level is below target range at the time of the carbohydrate announcement.

[d]The "super bolus" technique was initially promoted by John Walsh for use of insulin pumps in non-pregnant populations. To avoid late hypoglycaemia when strengthening the CI, reduce basal rates during the late postprandial period.[1–3]

[e]For all systems, availability differs across regions with differences in algorithms according to differing regulatory systems and other regional factors.

This table is updated based on Benhalima K, *et al*. Automated insulin delivery in pregnancies complicated by type 1 diabetes. *J Diabetes Technol Ther.* 2025; Mar 12 doi: 10.1177/19322968251323614

Table 3: Overview of the suggested settings intrapartum and postpartum of the different available AID systems

AID system	Available data from studies	Suggested settings intrapartum	Suggested settings postpartum
CamAPS FX®	RCT data available intrapartum and up to 6 months postpartum[213]	Increase glucose target to 5.5-6.0 mmol/L (99-108 mg/dL), insulin-to-carb ratios of between 1:12g and 1:15g	Glucose target 6.0 mmol/L (108 mg/dL) and utilize 'Ease off' as required. Mean postpartum glucose target was 6.0 mmol/L (108 mg/dL) in AiDAPT postpartum study, insulin-to-carb ratios of between 1:12g (non-breastfeeding) and 1:15g (breastfeeding).
Diabeloop®	No data available	No recommendation due to lack of evidence	Adapt glucose targets between 5.5-7.2 mmol/L (99-130 mg/dL). Adapt aggressiveness in hyperglycaemia, normoglycaemia and at meals as needed.
iLet®	No data available	No recommendation due to lack of evidence	Adapt glucose targets between 6.1-7.2 mmol/L (110-130 mg/dL) as needed.
Medtronic MiniMed 670/770G®	No RCT data available intrapartum on automode, RCT data available from 3-7 days onwards till 6 months postpartum [93,157]	No recommendation due to lack of evidence	Glucose target 6.7 mmol/L (120 mg/dL, non-customizable), active insulin time of 2-3 hours.
Medtronic MiniMed 780G®	RCT data available intrapartum and early postpartum[151]	Glucose target can most frequently remain at 5.5 mmol/L (99 mg/dL), increase as needed to glucose target of 6.1 or 6.7 mmol/L (110 or 120 mg/dL), active insulin time of 2 hours, increase insulin-to carb ratio's by at least 50%	Glucose target can most frequently remain at 5.5 mmol/L (99 mg/dL), increase as needed to glucose target of 6.1 or 6.7 mmol/L (110 or 120 mg/dL), temporary target of 8.3 mmol/L (150 mg/dL) is rarely needed, active insulin time of 2 hours, increase insulin-to carb ratios by at least 50% (and on average increase by 80% is needed when breastfeeding).

AID system	Available data from studies	Suggested settings intrapartum	Suggested settings postpartum
Omnipod 5® (SmartAdjust)	No data available	No recommendation due to lack of evidence	Adapt glucose targets between 6.1-8.3 mmol/L (110-150 mg/dL), may benefit from resetting the pump to prepregnancy settings or spending some time in manual mode before resuming automation.
Tandem t:slim X2 or Tandem Mobi with Control-IQ® or Control-IQ+ technology	Data available from case series,[97,99] RCT ongoing[96]	Sleep activity range 6.2-6.7 mmol/L (112-120 mg/dL) during labor and delivery.	Sleep Activity can often be continued 24/7 if postpartum profile is activated as outlined below * if frequent hypoglycaemia or fear of postpartum hypoglycaemia then control IQ without an activity target range 6.2-8.8 mmol/L (112-160 mg/dL) can be used with Sleep Activity overnight or, if needed, temporary use of Exercise Activity range 7.7-8.8 mmol/L (140-160 mg/dL) can be used.
Open Source Systems (Do-it-yourself APS) (examples, Loop* Android APS Trio) *Loop algorithm is now commercially available with the Sequel Twiist system.	Limited data available, Case reports	Set up two Custom Temporary Overrides for delivery [50% and 75% of insulin needs with a target of 5.5 mmol/L (99 mg/dL) enabled indefinitely] in advance, but do not activate until needed based on glucose, stage of labor and mode of childbirth.	Change target to 6.1-7.5 mmol/L (110–135 mg/dL) postpartum. Continue temporary overrides until postpartum settings* are activated. Android APS and TRIO-Experience is very limited, consider the follow setting adjustments. Stop dynamic insulin sensitivity factor. Lower the max units/hour and max total insulin on board by around 25-50% compared to the pregnancy values. Reduce 'max allowed bolus' by 25-50%.

*For systems with setting based algorithms (i.e., Control IQ, Open Source) basal rate, carbohydrate ratios and insulin sensitivity settings should be weakened after delivery or just prior to delivery of the neonate (whichever is practical) to an individualized "postpartum profile". General principles for calculating an individualized postpartum profile are as follows. If prepregnancy pump settings were optimised and are known then adjust all settings to be at least 20% weaker than prepregnancy setting (more for breastfeeding). Alternatively use settings that are at least 50% less aggressive than the end of pregnancy pump settings. For systems that have the option of multiple pump profiles (i.e., Control-IQ, TRIO) program a postpartum profile well in advance of delivery and activate just after delivery. For systems (Loop 1.0-3.0) that do not have the option of multiple pump profiles the postpartum profile will need to be programmed postpartum (basal rates, carbohydrate-to-insulin ratios, correction factors, glucose targets).