# Global Epidemiology of Diabetes and Prevention of T1D

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589 million adults (20-79 years) are living with diabetes worldwide
*This number is predicted to rise to 853 million by 2050*
Diabetes was responsible for 3.4 million deaths in 2024 – 1 every 9 seconds.

## Diagnosis of Diabetes: USA

| Test | Diabetes<br>should be diagnosed if 1 or more of the following criteria are met | "Prediabetes"<br>(IFG and/or IGT)<br>requires at least one of the following criteria |
|---|---|---|
| Fasting plasma glucose | > 125 mg/dL | 100-125 mg/dL (IFG) |
| Two-hour plasma glucose<br>after 75g oral glucose load (oral glucose tolerance test (OGTT)) | ≥ 200 mg/dL | 140-199 mg/dL (IGT) |
| HbA1c | ≥ 6.5% | 5.7–6.4% |
| Random plasma glucose<br>in the presence of symptoms of hyperglycaemia | ≥ 200 mg/dL | Not applicable |

# Global and Regional Prevalence of Diabetes

## Diabetes Guidelines & Epidemiology

- ADA
- EASD
- IDF

- American Diabetes Association
- European Association for the Study of Diabetes
- International Diabetes Federation

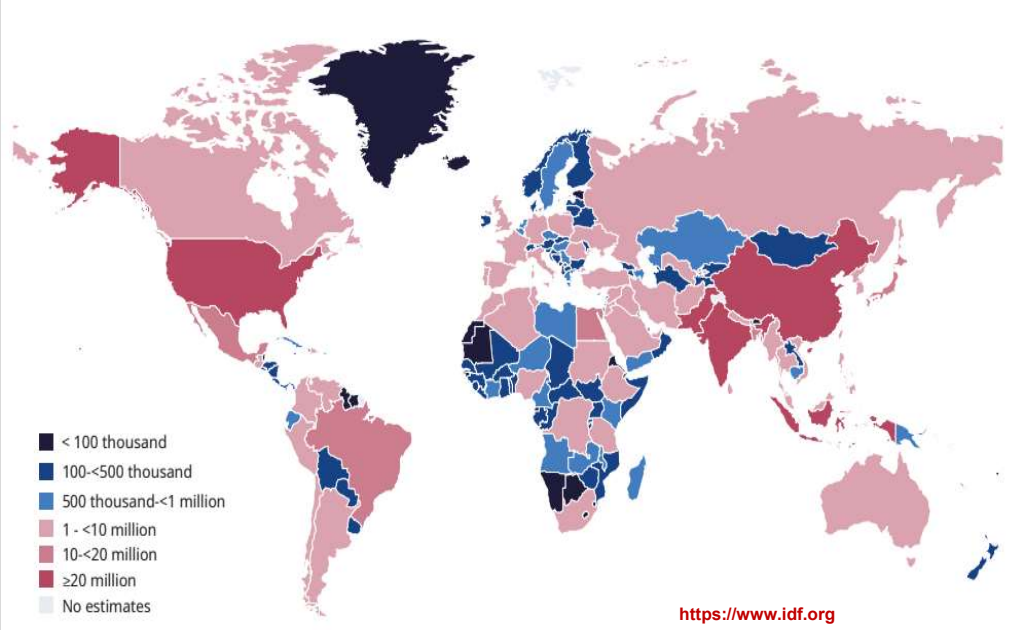
Visit www.diabetesatlas.org

Scan QR code

Contact atlas@idf.org

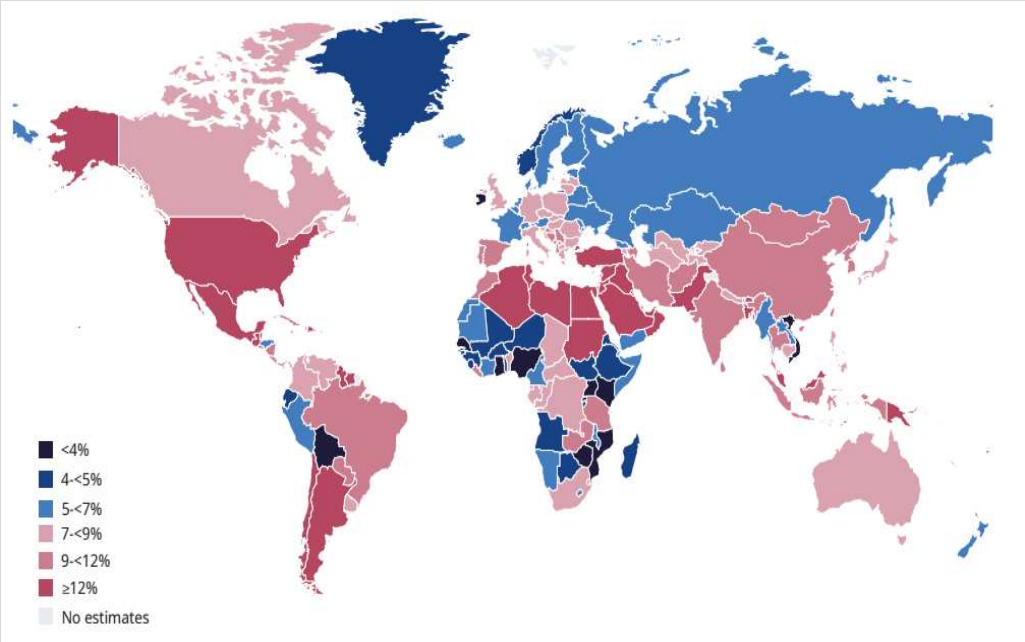
## IDF World Diabetes Atlas 11th Edition 2025

Estimated Number of Adults (age 20-79) with DM by country



# IDF World Diabetes Atlas 11th Edition 2025

age-adjusted comparative prevalence of DM in adults (20–79 years)




# IDF 2021 & 2025:

## Age-Adjusted DM prevalence in adults (20–79 years)

| 2021 | | |
|---|---|---|
| Rank | Country or territory | Comparative diabetes prevalence[i] (%) |
| 1 | Pakistan | 30.8 |
| 2 | French Polynesia | 25.2 |
| 3 | Kuwait | 24.9 |
| 4 | New Caledonia[ii] | 23.4 |
| 5 | Northern Mariana Islands[ii] | 23.4 |
| 6 | Nauru[ii] | 23.4 |
| 7 | Marshall Islands | 23.0 |
| 8 | Mauritius | 22.6 |
| 9 | Kiribati | 22.1 |
| 10 | Egypt | 20.9 |

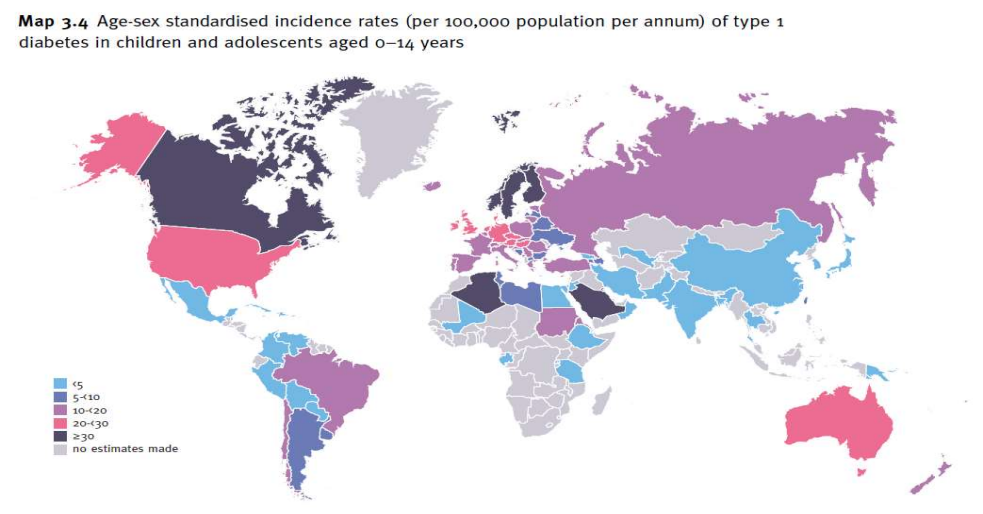
| 2024 | | |
|---|---|---|
| Rank | Country or territory | Age-standardised diabetes prevalence (%) |
| 1 | Pakistan | 31.4 |
| 2 | Marshall Islands | 25.7 |
| 3 | Kuwait | 25.6 |
| 4 | Samoa | 25.4 |
| 5 | Qatari | 24.6 |
| 6 | Kiribati | 24.6 |
| 7 | Saudi Arabia | 23.1 |
| 8 | French Polynesia | 22.8 |
| 9 | Egypt | 22.4 |
| 10 | Bahrain | 22.1 |

# IDF Data for T1D

- 2021:
  - Of the 215 countries and territories covered by the IDF Diabetes Atlas, only 97 have their own incidence data for T1D.
    - For most, this is limited to children and adolescents under 15 years of age
    - The countries without data for age <20 are some very populous nations, such as Nigeria, Indonesia, the Philippines, Vietnam, and South Africa.
- 2022:
  - The T1D Index utilizes a Markov Model and machine learning techniques to estimate the number of people with T1D globally and by individual country.

www.diabetesatlas.org

## IDF 10th Atlas: Global Incidence of T1D in 2021




The IDF Europe Region has the highest number of children and adolescents (0–19 years) with T1D – 295,000 in total

www.diabetesatlas.org

# IDF 10th Atlas: Top 10 Countries for T1D in 2021

**Table 3.10** Top 10 countries or territories for estimated number of incident (new) cases of type 1 diabetes in children and adolescents (0–19 years) per annum

| Rank | Country or territory | Number of incident (new) cases (0–19 years) in thousands |
|---|---|---|
| 1 | India | 24.0 |
| 2 | United States of America | 18.2 |
| 3 | Brazil | 8.9 |
| 4 | Algeria | 6.5 |
| 5 | China | 6.1 |
| 6 | Morocco[i] | 5.1 |
| 7 | Russian Federation | 4.0 |
| 8 | Nigeria | 3.8 |
| 9 | Saudi Arabia | 3.8 |
| 10 | Germany | 3.6 |

i The figure for Morocco uses incidence rates extrapolated from Algeria

**Table 3.11** Top 10 countries or territories for estimated number of prevalent (existing) cases of type 1 diabetes in children and adolescents (0–19 years) per annum

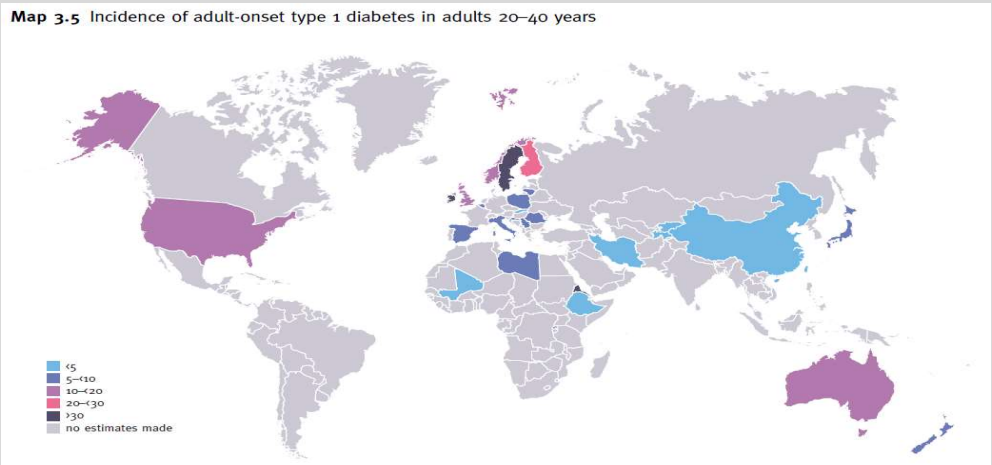
| Rank | Country or territory | Number of children and adolescents with type 1 diabetes (0–19 years) in thousands |
|---|---|---|
| 1 | India | 229.4 |
| 2 | United States of America | 157.9 |
| 3 | Brazil | 92.3 |
| 4 | China | 56.0 |
| 5 | Algeria | 50.8 |
| 6 | Morocco[i] | 43.3 |
| 7 | Russian Federation | 38.1 |
| 8 | Germany | 35.1 |
| 9 | United Kingdom | 31.6 |
| 10 | Saudi Arabia | 28.9 |

i The figure for Morocco uses incidence rates extrapolated from Algeria

www.diabetesatlas.org

# IDF 10th Atlas: Global Incidence of Adult Onset T1D in 2021

**Map 3.5** Incidence of adult-onset type 1 diabetes in adults 20–40 years




Annual incidence of type 1 diabetes (per 100,000 per year) among adults aged 20–40 years (men and women) per country/region (estimated from studies between 1973 and 2020)

Among the 46 studies identified, incidence of adult-onset (≥20 years) T1D was available for 32 countries and regions reporting estimates between 1973 and 2019.

www.diabetesatlas.org

**Table 3.13** Countries with the highest incidence of adult-onset type 1 diabetes

| Rank | Country | Study year | Incidence (per 100,000) |
|---|---|---|---|
| 1 | Eritrea | 2019 | 46.2 |
| 2 | Sweden | 2009 | 30.6 |
| 3 | Ireland | 2011–2016 | 30.6 |
| 4 | Finland | 2017 | 24.0 |
| 5 | United Kingdom | 2009–2013 | 17.8 |
| 6 | Norway | 1978–1982 | 16.7 |
| 7 | United States | 2017 | 16.5 |
| 8 | Australia | 2020 | 16.4 |
| 9 | Libya | 1981–1990 | 9.9 |
| 10 | Spain | 1987–1990 | 9.9 |

www.diabetesatlas.org

The majority of available studies are limited by the use of clinical diagnosis or diagnostic codes for ascertainment of T1D in adults and, therefore, likely underestimate the true burden.

## Limitations of the Data in Adults

- ICD10 Coding
  - Youth and Adolescents are often coded as T1D even when documentation is clear that diagnosis is T2DM
    - This has minimal impact on the data as T2DM is a very small percent of the diabetes diagnosed in youth and adolescence
  - Most adults with documented T1D are still coded as T2DM
    - EHR defaults “diabetes mellitus” to E11.9
  - Many adults are not tested for T1D but are merely presumed to be T2DM
- Clinical Diagnosis typically uses initiation of insulin within 6 or 12 months of diagnosis as indication of T1D

## Countries with the highest number of people of all ages living with T1D in 2024

| Rank | Country | Number of people of all ages living with T1D |
|---|---|---|
| 1 | United States of America | 1,477,000 |
| 2 | India | 941,000 |
| 3 | China | 599,000 |
| 4 | Brazil | 499,000 |
| 5 | United Kingdom | 341,000 |
| 6 | Germany | 337,000 |
| 7 | Russian Federation | 323,000 |
| 8 | Canada | 243,000 |
| 9 | Saudi Arabia | 223,000 |
| 10 | Turkey | 196,000 |

www.diabetesatlas.org

## US Data, 2018-2020

- 64,000 new diagnoses of T1D annually
  - 27,000 cases in youth (0-19 years)
  - 37,000 cases in adults (20-64 years)
- 1.6 million American are living with T1D
  - 200,000 of these are < age 20
  - 1.4 million are age 20+
- This number is projected to rise to 5 million people (3X increase) in the U.S. by 2050, including nearly 600,000 youth

Rogers et al. BMC Medicine (2017) 15:199

# Can we prevent T1D?

# Stages of T1D

| | Stage 1 | Stage 2 | Stage 3 |
|---|---|---|---|
| | | | |
| **Symptoms** | Asymptomatic | Asymptomatic | Symptomatic |
| **Antibodies** | Autoantibodies present | 2+ Autoantibodies present | Autoantibodies present in 90-95% |
| **Glucose** | No IFG or IGT | Dysglycemia* | Hyperglycemia |
| | | | |
| **ICD10 Code** | E10.A1 | E10.A2 | E10.65 |

IFG= impaired fasting glucose
IGT = impaired glucose tolerance
*FPG 100-125 mg/dL or 2h PG 140-199 mg/dL or A1c 5.7-6.4%

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## Using Immunotherapy to Prevent T1D
### Teplizumab (an anti-CD3 antibody)

- Cancer therapy has seen a dramatic impact with checkpoint inhibitors that block CTLA-4, PD-1, or PD-L1, either alone or in combination
- Preventing autoimmunity needs a different approach
  - Teplizumab is now FDA approved to delay or prevent T1D in people at high risk
    - an anti-CD3 antibody
      - Prevents activation of the T-cell Receptor by preventing formation ofthe T-Cell Receptor-CD3 complex
        - This prevents activation of the CD4+ T-cells
          - prevents the recognition of autoantigens by T-cells
    - Shown to slow progression of T1D from Stage 2 to Stage 3 by a median of 2 years
  - *More biologic agents are in clinical trials*

## Summary

- The majority of T1D is diagnosed in adults
- The actual prevalence of T1D, in youth & adolescents and in adults, is not known in many countries
  - As data is coming available it is much higher than previously assumed, with India as the primary example
- Prevention of T1D is possible, if treated in Stage 2

# Newer technologies in the care of women with diabetes complicating pregnancy

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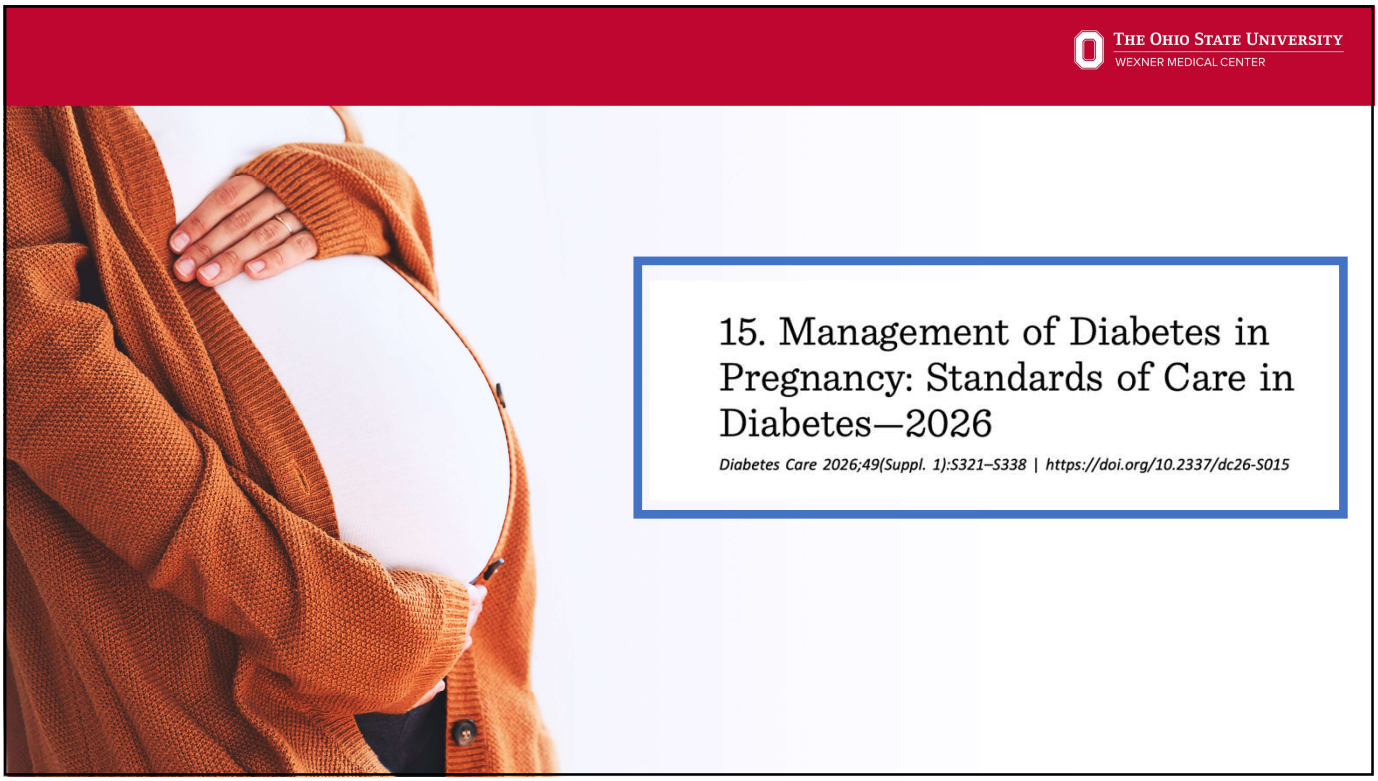
## Objectives

- Review goals in management of diabetes in pregnancy
- Review use of CGM in type 1 diabetes in pregnancy
- Describe insulin pumps and automated insulin delivery
- Research studies




# ADA recommendations for reproductive health

- Preconception counseling should be part of every visit starting at puberty
- If pregnancy desired:
  - A1c level as close to normal as possible (<6.5%) without hypoglycemia
  - Evaluate and treat complications
  - Evaluate medications' safety

Diabetes Care Volume 49, Supplement 1, January 2026
Management of Diabetes in Pregnancy: Standards of Care in Diabetes-2026

# Risks of maternal hyperglycemia in pregnancy

| Fetal and neonatal risks |
|---|
| Congenital anomaly (cardiac, CNS, limb defects, orofacial clefts) |
| Prematurity |
| Large for gestational age or growth restriction |
| Neonatal medical complications |
| Perinatal mortality |
| Long-term outcomes |

| Obstetric complications |
|---|
| Miscarriage |
| Preeclampsia and gestational hypertension |
| Polyhydramnios |
| Preterm delivery |
| Cesarean delivery |

| Maternal medical risks |
|---|
| Progression of retinopathy |
| Progression of diabetic kidney disease |
| Cardiovascular disease |
| DKA |

# Your patient with T1D is pregnant…now what?

- Discuss usual changes in insulin requirements during pregnancy
- Refer to multidisciplinary team of maternal fetal medicine providers, endocrinologist, diabetes educator, nutritionist, if available
- Weekly (or more often) glucose review to begin immediately

## Guidelines for glycemic targets for pregnancy

| | Fasting glucose | Peak postprandial | A1c | CGM Recommended |
|---|---|---|---|---|
| ADA | 70-95 mg/dl | 1h 110-140 mg/dl<br>2h 100-120 mg/dl | <6% | T1D<br>Not for T2D or GDM |
| ACOG | <95 mg/dl | 1h <140 mg/dL<br>2h <120 mg/dL | <6% | T1D |
| AACE | 60-99 mg/dl | 1h or 2h: 100-129 mg/dl | <6% | Recommend if unable to achieve targets for all types of DM in pregnancy |
| CCPGP | <95 mg/dl | 1h <140 mg/dl<br>2h <120 mg/dl | <6.5% | T1D |
| NICE | <95 mg/dl | 1h <140 mg/dl<br>2h <115 mg/dl | <6.5% | T1D<br>Also for T2D/GDM on insulin, severe hypoglycemia, or unable to achieve goals |

## Should CGM be used in pregnancy?

- Since 2022, many CGM have been approved by the FDA for pregnancy

**15.10** Continuous glucose monitoring (CGM) can help to achieve glycemic goals (e.g., time in range, time above range) **A** and A1C goal **B** in type 1 diabetes and pregnancy and may be beneficial for other types of diabetes in pregnancy. **E**

**15.11** Recommend CGM to pregnant individuals with type 1 diabetes. **A** In conjunction with aims to achieve traditional pre- and postprandial glycemic goals, real-time CGM can reduce the risk for large-for-gestational-age infants and neonatal hypoglycemia in pregnancy complicated by type 1 diabetes. **A**

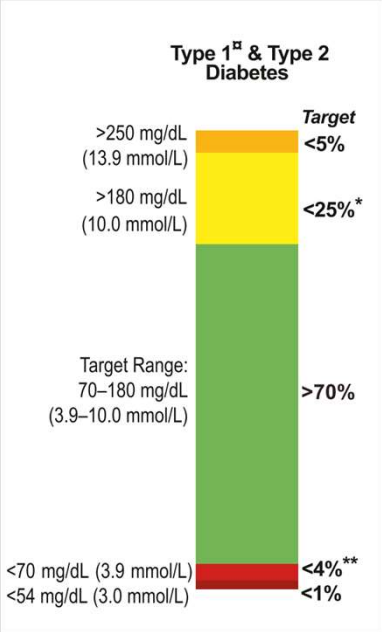
American Diabetes Association Professional Practice Committee; 15. Management of Diabetes in Pregnancy: Standards of Care in Diabetes—2026.

# Benefits of CGM in pregnancy

- Seeing trends in glucose changes and adjusting medications accordingly
- Identification of impending hypo- or hyperglycemia
- Identification of hyperglycemia overnight or postprandially not seen by SMBG
- Potentially may reduce nocturnal hypoglycemia
- Logging and sharing glucose data between visits
- Improved neonatal outcomes

## CGM Targets for Non-Pregnant Individuals

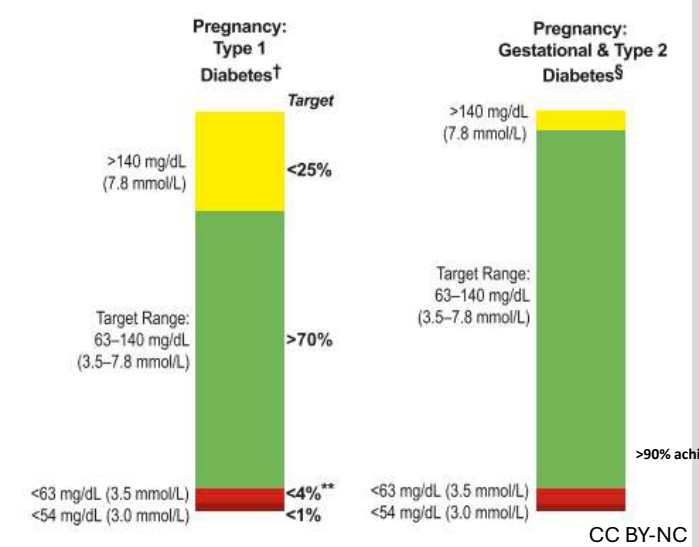
Default target range: 70-180 mg/dL






Battelino Tadej, et al. Clinical Targets for Continuous Glucose Monitoring Data Interpretation: Recommendations From the International Consensus on Time in Range. Diabetes Care. 2019 Aug;42(8):1593-1603. doi: 10.2337/dci19-0028. Epub 2019 Jun 8. PMID: 31177185; PMCID: PMC6973648.

# Tighter Targets for Diabetes during Pregnancy






† Percentages of time in ranges are based on limited evidence. More research is needed.

§ Percentages of time in ranges have not been included because there is very limited evidence in this area. More research is needed. Please see *Pregnancy* section in text for more considerations on targets for these groups.

Pregnancy-Specific Target Range: 63-140 mg/dL

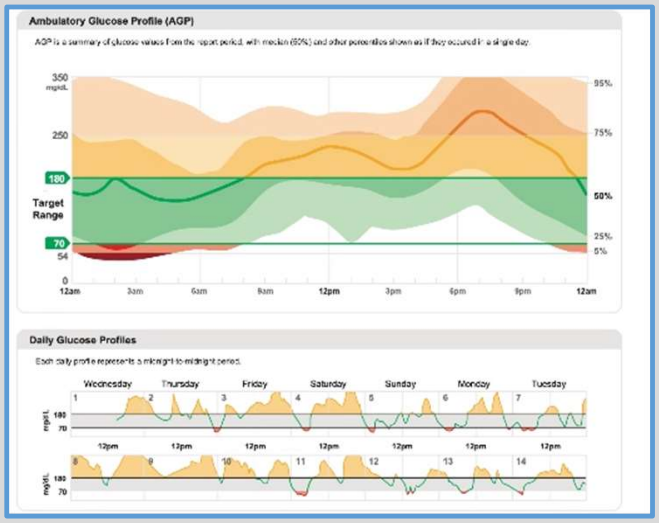
Battelino Tadej, et al. Clinical Targets for Continuous Glucose Monitoring Data Interpretation: Recommendations From the International Consensus on Time in Range. Diabetes Care. 2019 Aug;42(8):1593-1603. doi: 10.2337/dci19-0028. Epub 2019 Jun 8. PMID: 31177185; PMCID: PMC6973648.

Murphy HR, Rayman G, Duffield K, et al. Changes in the glycemic profiles of women with type 1 and type 2 diabetes during pregnancy, Diabetes Care 2007 Nov;30(11):2785-91.

# What to do with all the numbers/data??

## Understanding CGM reports

- Average sensor glucose
- Glucose management indicator (GMI): estimate of A1c based on 14 days of CGM data
- Measures of variability: standard deviation, coefficient of variation
- Ambulatory glucose profile
- Time in range graph



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- Use of CGM-derived mean glucose is superior to other measures such as glucose management indicator (GMI)

# Objectives

- Describe CGM
- Review goals in management of diabetes in pregnancy
- Review use of CGM in type 1 diabetes in pregnancy
- Describe insulin pumps and automated insulin delivery
- Should CGM be used for gestational diabetes and type 2 diabetes in pregnancy?

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- Benefits of CGM in Pregnant Individuals with T1D

## CGM in women with T1D in Pregnancy Trial (CONCEPTT)

- 325 women (215 pregnant, 110 planning pregnancy) with T1D randomized to CGM or no CGM (finger stick glucoses)

Glycemic outcomes:

- Increased time within target (63-140 mg/dL) (68% *vs* 61%; p=0·0034) at 34 weeks and less time hyperglycemic (27% *vs* 32%; p=0·0279)
- Time spent hypoglycemic and with severe hypoglycemia was comparable

Feig DS, Donovan LE, Corcoy R, et al. CGM in pregnant women with T1D (CONCEPTT): a multicenter international randomised controlled trial. Lancet 2017;390:2347-59.

## Table 1: Glycemic control of pregnancy trial participants based on HbA1c

| | CGM (n=95) | Control (n=92) | P value |
|---|---|---|---|
| Baseline | 6.83% (0.67) | 6.95% (0.66) | -- |
| 24 weeks gestation | 6.23% (0.53) | 6.40% (0.68) | -- |
| Change from baseline to 24 weeks | -0.67 (0.58) | -0.52 (0.55) | 0.0374 |
| 34 weeks gestation | 6.35% (0.57) | 6.53% (0.70) | -- |
| Change from baseline to 34 weeks | -0.54 (0.62) | -0.35 (0.65) | 0.0372 |
| Achieved HbA1c ≤6.5% at 34 weeks | 63/95 (66%) | 48/92 (52%) | 0.0601 |

Data are mean percentage (SD). P values are from linear regression (HbA1c) or logistic regression (HbA1c ≤6.5%) on available data controlling for baseline HbA1c and method of delivery.

Feig DS, Donovan LE, Corcoy R, et al. CGM in pregnant women with T1D (CONCEPTT): a multicenter international randomised controlled trial. Lancet 2017;390:2347-59.

## Neonatal outcomes

- Lower incidence of LGA (53% vs 69%; p=0·02); NNT 6
- Fewer neonatal hypoglycemia (15% vs 28%; p=0·03), NNT 8
- Fewer NICU stays >24h (27% vs 43%; p=0·02), NNT 6
- 1-day shorter length of hospital stay (p=0·01)

*NNT=number needed to treat with CGM to prevent 1 adverse outcome

Murphy HR, et al. Modeling potential cost savings from use of real-time CGM in pregnant women with T1D. Diabetic Medicine 2019 Dec;36(12)1652-1658. Feig DS, Donovan LE, Corcoy R, et al. CGM in pregnant women with T1D (CONCEPTT): a multicenter international randomised controlled trial. Lancet 2017;390:2347-59.

## Maternal outcomes

- No change in:
  - Hypertensive disorders
  - Cesarean section
  - Preeclampsia
  - Maternal weight gain
  - Maternal length of stay

## Neonatal outcomes with CGM

- A 5% to 7% greater time in range during the second and third trimesters has been associated with lower risk of large for gestational age, macrosomia, shoulder dystocia, neonatal hypoglycemia, and neonatal intensive care unit stay

5% increase in TIR!

Battelino T, Danne T, Bergenstal RM, et al. Clinical targets for continuous glucose monitoring data interpretation: recommendations from the International Consensus on Time in Range. *Diabetes Care*. 2019;42(8):1593-1603. PMID: 31177185. Kristensen K, Ogge LE, Sengpiel V, et al. Continuous glucose monitoring in pregnant women with T1D: an observational cohortt study of 186 pregnancies. Diabetologia. 2019;62:1143-1153.

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- Describe insulin pumps and automated insulin delivery
- Should CGM be used for gestational diabetes and type 2 diabetes in pregnancy?

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None of the commercially available automated insulin delivery (AID) systems are approved for use in pregnancy in the U.S.

The CamAPS Fx algorithm is the first FDA approved AID algorithm in the U.S. in 2024 but is not yet commercially available.

- Traditional intensive insulin therapy with multiple daily injections
- Sensor augmented pump therapy (SAPT)
- Hybrid closed-loop (HCL) insulin therapy (off-label in pregnancy)

# Insulin Pumps with Automated Insulin Delivery (AID)


## ADA Standards of Care 2026

15.19 Automated insulin delivery (AID) systems with pregnancy-specific glucose targets are recommended for pregnant individuals with type 1 diabetes. A 15.20 AID systems without pregnancyspecific glucose targets or a pregnancyspecific algorithm may be considered for select pregnant individuals with type 1 diabetes when used with assistive techniques and working with experienced health care teams. B

15. Management of Diabetes in Pregnancy: Standards of Care in Diabetes—2026

Diabetes Care 2026;49(Suppl. 1):S321–S338 | https://doi.org/10.2337/dc26-S015

## Individualize the Decision to Use AID or Not in Pregnancy

- History of severe hypoglycemia or fear of hypoglycemia?
- Glycemic control on AID or SAPT
- Consider using AID certain times only (manual mode or SAPT overnight)
- Discuss risks and benefits with each patient

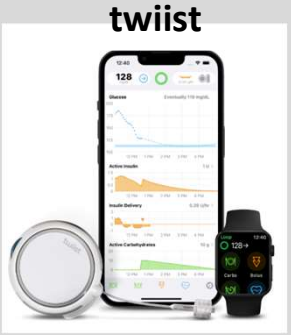
## Insulin Pumps with AID

**Omnipod 5**


**iLet Bionic Pancreas**


**Medtronic 770G & 780G**


**twiist**



**Tandem T-Slim X2**

**Tandem Mobi**

*None that are currently commercially available in the US are FDA approved for pregnancy

Cam APS Fx app is approved for pregnancy but not commercially available yet

| | Omnipod 5 | Tandem Control IQ | Medtronic 670G/770G |
|---|---|---|---|
| **Integrated CGM** | Dexcom G6 | Dexcom G6 | Guardian 3 |
| **Algorithm Insulin Adjustment** | 60 minute predictive based on CGM | 30 minute predictive based on CGM | 120 mg/dL |
| **Baseline Basal Pattern** | Adaptive basal rate based on insulin delivery history | Programmed settings | Insulin delivery updates q6d (basal, CF) |
| **Algorithm Target**<br>**Bolus Calc Target** | Customizable 110 to 150 mg/dL | 112.5 – 160 mg/dL<br>110 mg/dL | 120 mg/dL<br>150 mg/dL |
| **Temporary Override Options** | Activity 150 mg/dL | Exercise 140 – 160 mg/dL<br>Sleep 112.5 – 120 mg/dL | Temp Target 150 mg/dL |
| **CGM trend used in bolus calculator** | ↑ up to 30%<br>↓ up to 100% | - | - |
| **Insulin Action** | 2 – 6 hours | 5 hours | 2 – 8 hours |

| | Medtronic 780G | iLet Bionic Pancreas | twiist |
|---|---|---|---|
| **Integrated CGM** | Guardian 4 | Dexcom G6 | Libre 3+ |
| **Baseline Basal Pattern** | Insulin delivery updates q6d (basal, CF) | Weight entry | Programmed basal plus adjustments based on predicted CGM over next 6 hours |
| **Algorithm Target** | 100, 110, 120 mg/dL | 100, 110, 120, 130 mg/dL | 87-180 mg/dL |
| **Temporary Override Options** | Exercise (150 mg/dL) | None | Pre-meal preset (67-130 mg/dL<br>Exercise (87-250 mg/dL) |
| **CGM trend used in bolus calculator** | Bolus automation, every 5 minutes | No. Uses “usual for me,” “less,” or “more” customized by meal | Yes |
| **Insulin Action** | 2 – 8 hours | Unknown | 6 hours |

## AID limitations

- It's not perfect
- User must be prepared to use pump without AID
- Pumps and CGMs can fail
- Reporting software may have glitches
- DKA can happen due to site issues
- Cost
- Training needed
- No pregnancy specific glucose target or algorithm yet

## Clinician resources

PANTHER™ Diabetes Technology. Deciphered.™

PANTHERprogram.org

| CALCULATE | iLet | 780G | Control-IQ | Omnipod 5 |
|---|---|---|---|---|
| What is automation called? | iLet Bionic Pancreas | SmartGuard™ | Control-IQ™ | Automated Mode |
| Basal automation? | Insulin Automation is initialized by entering user's weight. Basal insulin delivery adjusts every 5 minutes based on CGM glucose trends and adapts over time based on the iLet's analysis of the user's daily glucose patterns. | "Auto Basal" calculated from total daily insulin, which is updated each day at midnight. Auto Basal is adjusted every 5 min based on recent CGM glucose trends, aiming for the target glucose value. | Increases or decreases the programmed basal rates based on a 30 min prediction of CGM glucose, aiming for the target glucose range. | "Adaptive Basal" calculated from total daily insulin, which is updated at each Pod change. Adaptive Basal is adjusted every 5 min based on a 60 min prediction of CGM glucose, aiming for the target glucose value. |
| Bolus automation? | All meal bolus doses and correction bolus doses are automated. | Auto correction boluses (max. every 5 min) if glucose is >120 mg/dL. Auto corrections can be turned on or off. | Auto correction boluses (max once/hr) if glucose is predicted to be >180 mg/dL in 30 min. | No automated boluses |
| Algorithm target glucose/ target range? | 3 target options: "Usual", "Lower", "Higher" | 3 target options: 100, 110, 120 mg/dL | Target range: 112.5-160 mg/dL | 5 target options: 110, 120, 130, 140, 150 mg/dL |
| Which insulin does the user give? | User completes a meal "announcement" to prompt the iLet to deliver a meal bolus, which involves indicating the carbohydrate amount for each meal ("Usual for Me"/"More" than usual/"Less" than usual). | User gives boluses for meals by entering total grams of carbs in the bolus menu / bolus calculator. User can deliver correction boluses as needed in the bolus menu / bolus calculator. | | |

v06.2023

# Research on Insulin Pumps with Automated Insulin Delivery (AID)


## Targets and Achieved Mean Glucose for AID Systems (US)

| Device (Algorithm) | Lowest BG Target (mg/dL) | Mean Glucose in Non-Pregnant Studies (mg/dL) | Mean Glucose in Pregnancy Studies (mg/dL) |
|---|---|---|---|
| TSlim X2, Mobi (Control IQ) | Sleep activity: 112-120 | 156 vs 179 (Parallel RCT) | Expected soon |
| Medtronic 780G (SmartGuard) | 100 | 147 vs 151 (single arm, run-in) | 126 vs 128 (parallel RCT) |
| Omnipod 5 (SmartAdjust) | 110 | 154 vs 161 (single arm, run-in) | --- |
| iLet | 110 | 164 vs 181 (parallel RCT) | --- |

# Summary

- Plan ahead – talk to your female patients with T1D about pregnancy planning & CGM use to improve neonatal outcomes
- Automated insulin delivery may be used off-label in pregnancy for those with T1D
- Pregnancy specific targets for AID systems are needed