

Diabetes and Glucose Monitoring

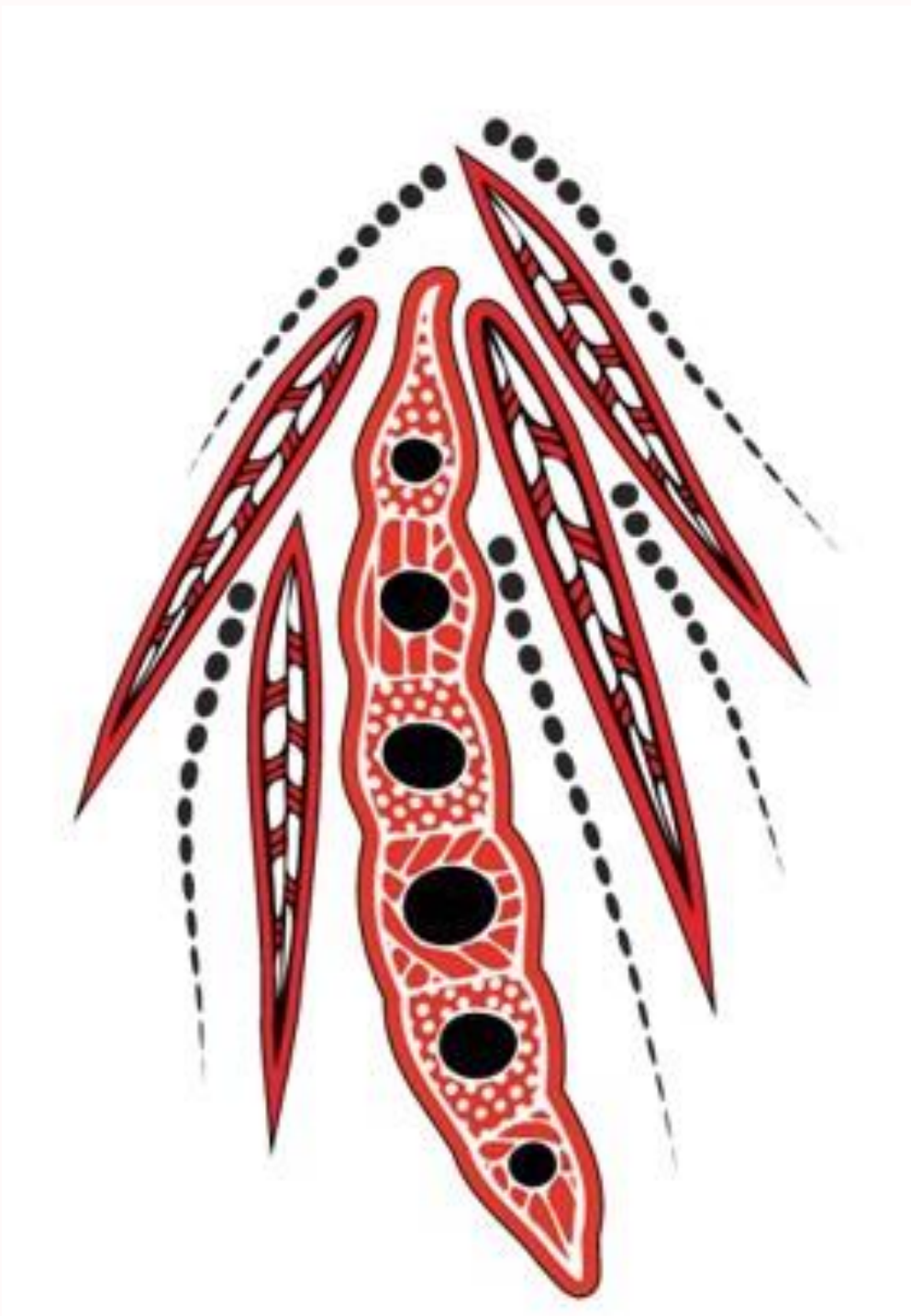
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AH&MRC
Aboriginal Health & Medical
Research Council of NSW



Deadly Doctors
FORUM 2025



Acknowledgement of Country

Blackwattle seeds, Girra Maa, Faculty of Health, UTS

<https://www.uts.edu.au/about/faculty-health/school-public-health/indigenous-health>

Learning Outcomes (Morning):

CGM is a yarn, not a test.

- Explain CGM vs finger-prick
- Apply & pair sensor, set safe alerts
- Recognise 3 red-flag times to finger-prick



CGM in Our Context: Model of Care

CGM = shared map
for yarns

Reduces fear of hypos
& improves social
emotional wellbeing

Tool for learning,
not judgement

CGM is a **yarning tool** — not a test or report card, but a shared map that's more than just numbers.

➤ The framing is to reduce ***anxiety and diabetes distress*** from the data overload.

CGM vs Finger-Prick

Finger-prick = snapshot 

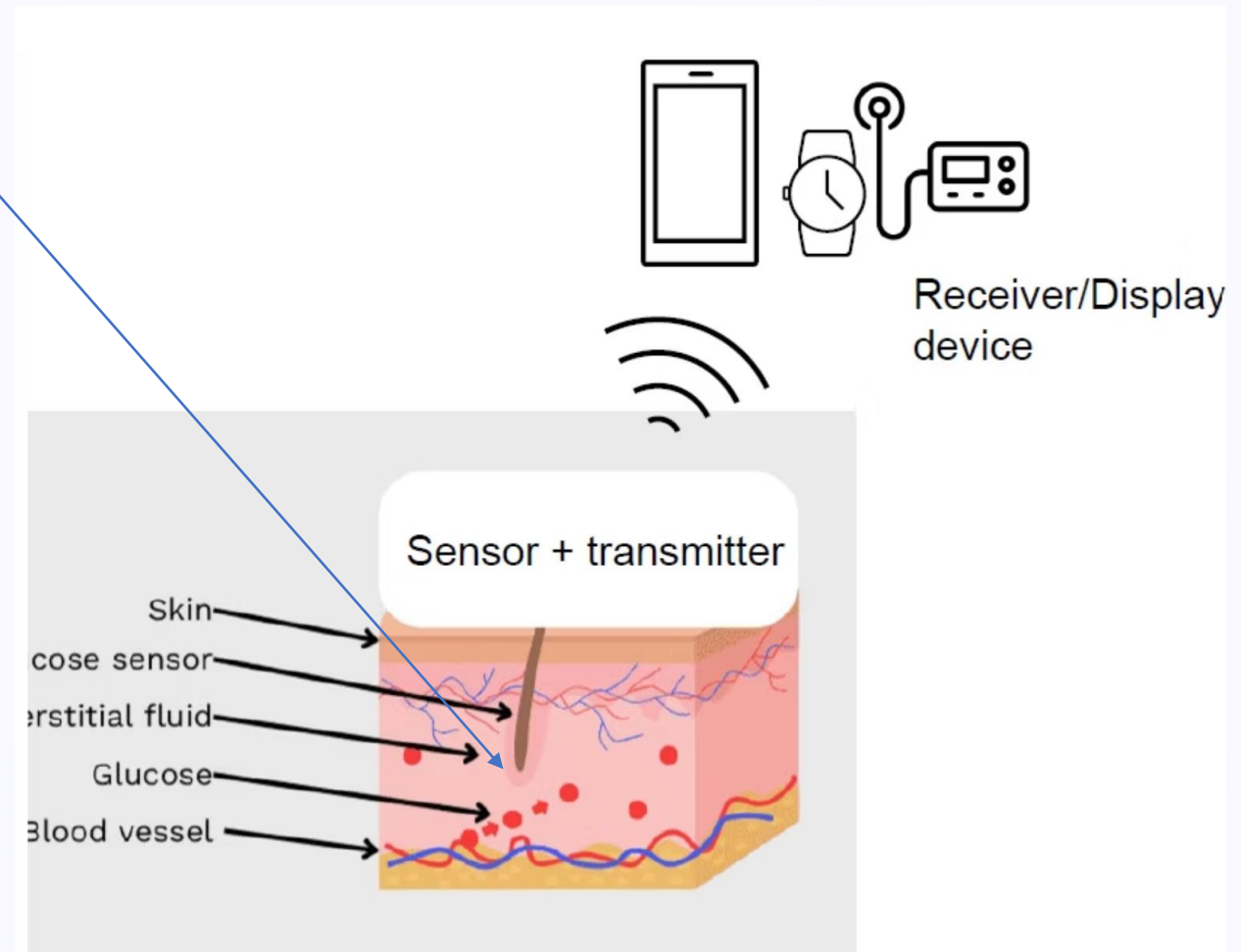
CGM = video + GPS 

Shows: meal spikes, overnight lows, patterns

Evidence: HbA1c ↓ by 0.8–1.5% (just like adding a medication)

How CGM Works & Finger-Prick Rule

- Measures interstitial glucose (lag 5–10 min)
- Arrows show direction, not dose
- Rule: If story $\neq$ number $\rightarrow$ finger-prick $\boxed{?}$



Who to Start & Access Issues

- Best: T1D (NDSS eligibility), insulin users, recurrent hypos
- Readiness: interest + smartphone and internet access
- Equity: NDSS forms, clinic readers, family support

What is our goal?

Co-design the 'why'

What is the main thing we want to learn from this?

➔ Frames CGM as **a tool** to answer their questions, *not just* a device gives them numbers.

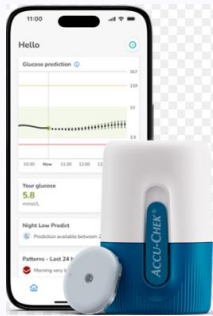
Quick Checklist – 4Dos

- 1) Does the patient want to use it?
- 2) Do they have a compatible smartphone?
- 3) Do they feel comfortable using the app?
- 4) Do you have a shared goal?

Choosing the Right Patient & Setting Goals

Common CGM systems in primary healthcare setting

Features	Dexcom One+	Freestyle Libre 2 plus	Roche SmartGuide (Coming)	Sibionics GS3 (Coming)
Sensor Wear	10 days + 12-hour grace period	14 days	14 days	14 days
Sensor Location	Back of upper arm or abdomen	Back of upper arm	Back of upper arm	Back of upper arm
Age	2+	2+	18+	3+
Device	Android & iOSApple watch; Receiver (\$150)	Android & iOSReceiver (free)	Android & iOSpps	Android & iOS +/- Si-Wiki watch
Hypo Prediction	Hypo alarm only	Hypo alarm only	30-min before getting hypo Virtualize 2-hr glucose prediction	Hypo alarm only



SmartGuide Prediction

- Understand how the glucose evolves in future
- Inform better therapeutic decisions from patients

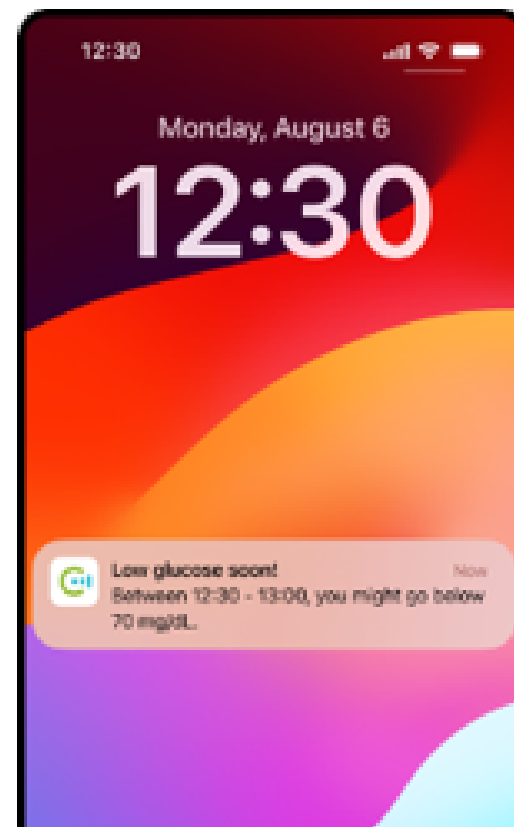


Predictive Suite

Low Glucose Predict



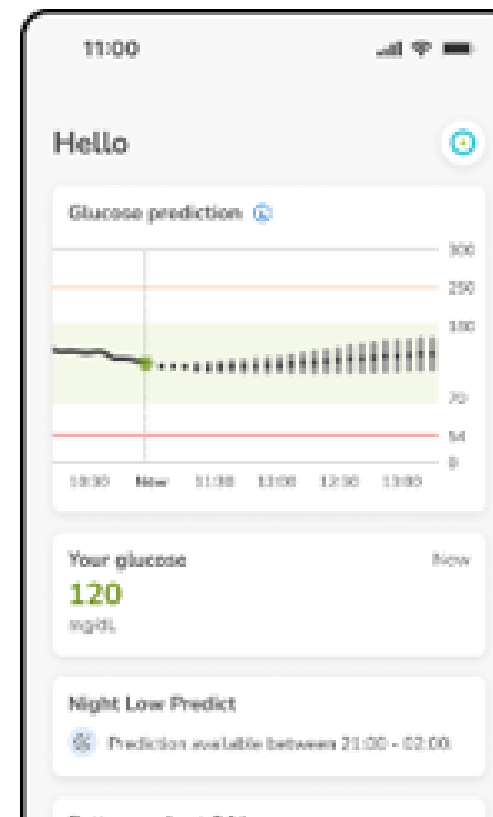
Receive an alert 30 minutes before your glucose values get too low



Glucose Prediction



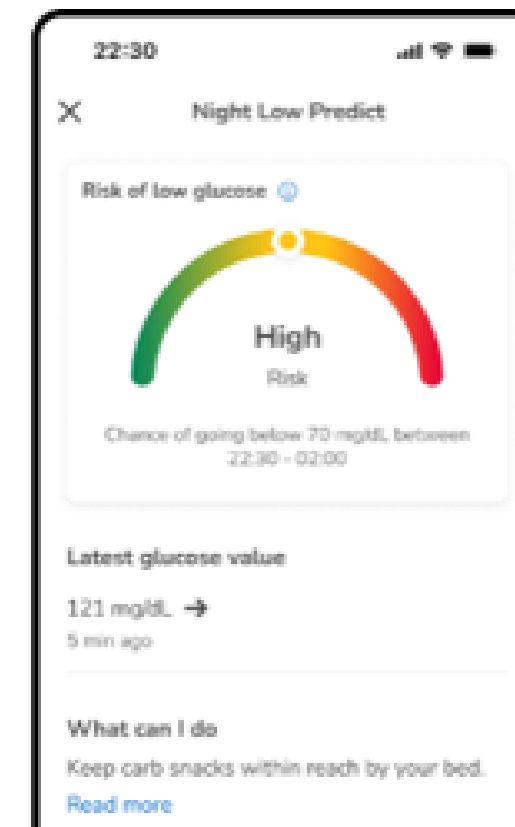
Visualise 2-hour glucose prediction allowing to be prepared and take action



Night Low Predict



Get notified before bedtime of the risk of having a hypoglycemia event during the night



SmartGuide Prediction:
provides future glucose trends to support **safer decisions**



Hands-On Demo & Safety Drill

Apply, pair, set alerts

Safety: trust finger-prick if story $\neq$ number

Common CGM Pitfalls & Fixes (1)

False Lows

1) Compression lows: Lying on sensor → reduced blood flow → false low

✓ Fix: Change sleep side, avoid direct pressure

2) Cold weather: Slows blood flow → false low

✓ Fix: Warm up, check with finger-prick if unsure

False Hights

1) Hot baths/sauna: Heat increases blood flow → false high

✓ Fix: Interpret cautiously, confirm if needed

2) Paracetamol: overuse → false high

✓ Fix: Interpret cautiously, confirm if needed. Consider another pain relievers (ibuprofen)



Golden Rule: One fix per visit only

Common CGM Pitfalls & Fixes (2)

Practical Issues

1) Adhesion problems:

Sweat/heat loosen sensor

 **Fix:** Apply to dry skin, rotate sites, use overpatch

2) Alarm fatigue: Frequent alerts

→ stop using CGM

 **Fix:** Adjust thresholds, personalise quiet hours

Special Situations

1) X-ray, CT, MRI: Radiation damages electronics; Magnetic fields disrupt/heat components

 **Fix:** Remove sensor & transmitter, use finger-prick monitoring

2) Peri-operative: Sx & related changes (hypoperfusion, hypothermia, blood loss) reduce accuracy

 **Fix:** Use finger-prick monitoring



Golden Rule: One fix per visit only

Learning Outcomes (Afternoon):

AGP is a map, not just numbers

- Read Ambulatory Glucose Profile (AGP) in 5 min
- Discuss AGP with patients
- Know when not to act
- Troubleshoot common AMS issues



Ambulatory Glucose Profile (AGP) as a GPS Map



HbA1c = destination



AGP = map



CGM = live GPS

Ask the patient: 'What stands out to you?'

It shifts the ownership to the patient (*person-centred care*)

Accu-Chek® SmartGuide AGP Report

12:30

Export report

2 weeks period

From7 July 2022

Until21 July 2022

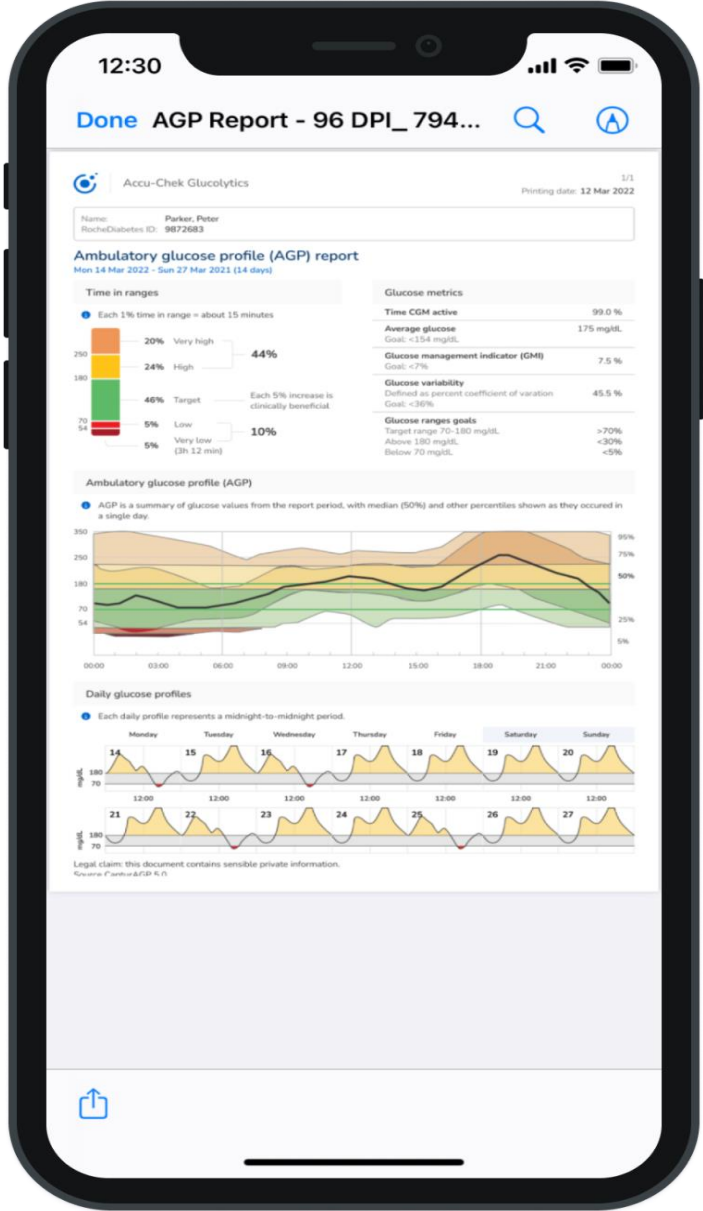
Report content

Patterns

Glucose profile (AGP)

Note: reports contain sensitive private information.

Generate report



Glucose Predict



Low Glucose Predict



Night Low Predict



Glucose Patterns



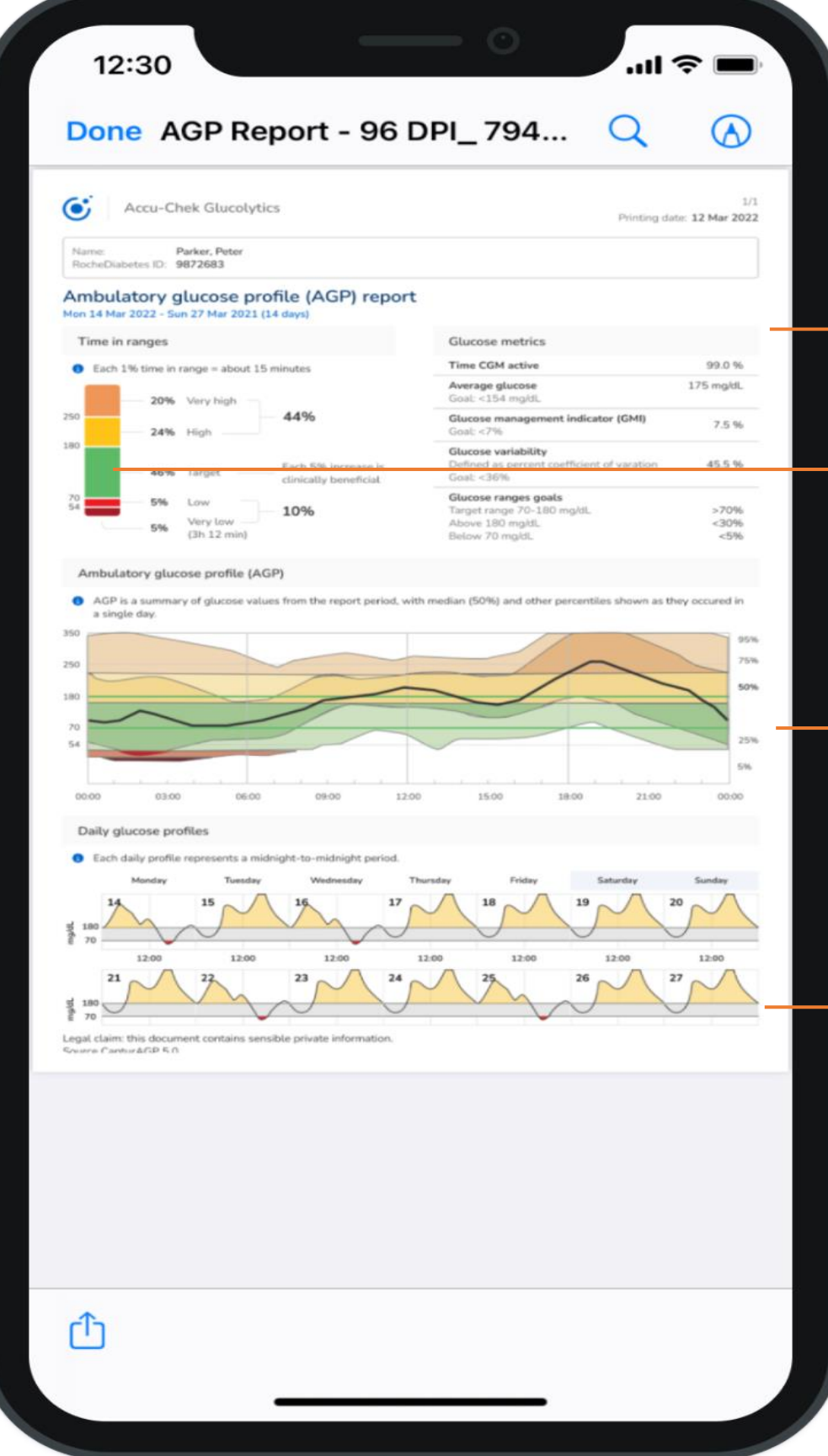
Export Reports



Create informed reports with the desirable data to share with your healthcare professional.



PwD can easily share CGM data and detected patterns with the HCPs, and have the flexibility to include either only the AGP, the detected patterns or a combination of both.



Understanding CGM Data (1)

1: **Glucose statistics and targets**: dashboard for a range of metrics

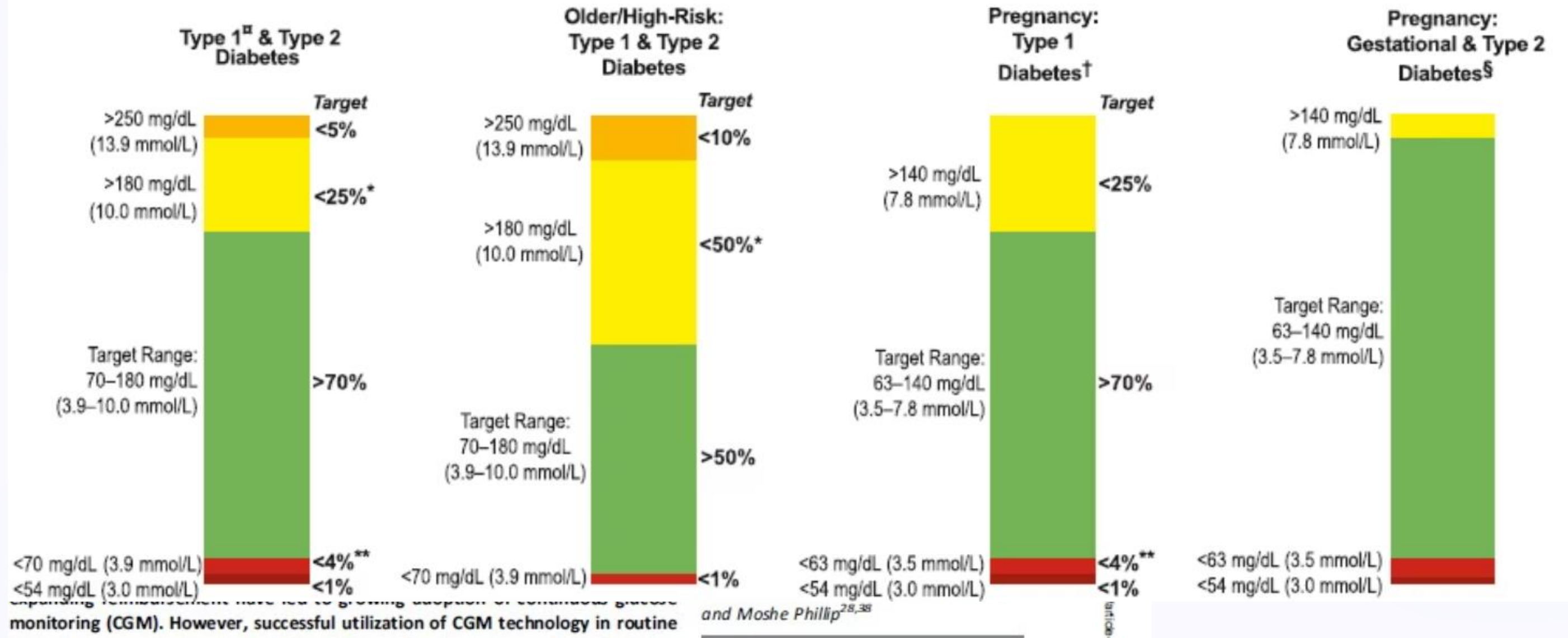
2: **Time in Range (TiR)***: powerful bar graph, common goal is >70% TiR (3.9-10mmol/L)

3: **Ambulatory Glucose Profile (AGP)**: all the daily views and trends across a 24-hr period. The dark line is the median (50th percentile)

Daily glucose profile

AGP shows daily patterns and TiR. Every **10%** increase in **TiR** improves **HbA1c** by **~0.5%** and reduces risk of retinopathy and kidney complications.”

CGM Metrics



5-Minute AGP: 6 Steps

01

Check data ($\geq 70\%$ wear)
Check the date of sensor wear

03

Pick one pattern

05

Add context (meals, activity)

02

Review metrics (TiR, TBR, TAR)

04

Address hypos first

06

Plan one safe small change

“I have learnt that people will forget what you said, people will forget what you did, but people will **never forget** how you made them **feel**.”
- Maya Angelou

Communication matters:

- keep explanations simple
- avoid overloading patients with data

5-Minute AGP Read (Step 1-3)

1

Check data sufficiency
≥70% wear time
If not enough, don't act yet

 *Script (GP):* "Looks like we only have 5 days of data. Let's wait another week so we can make a confident decision."

→ great way to manage patient expectations and practice safely

2

Review headline metrics

TIR, TBR, TAR, mean glucose, GMI

 *Script:* "You're in target about 60% of the time — that's 14 hours per day, a good base to build on."

3

Pick **ONE** clear pattern

e.g. Repeated overnight lows

 *Script:* "I notice your glucose often dips below 4 overnight — does that match how you feel in the mornings?"

5-Minute AGP Read (Step 4-6)

4

Safety first

Address **hypos before**
highs

 *Script:* "Before we work on highs, let's make sure these lows are less frequent, so you're safe while sleeping."

5

Add context

Meals, insulin timing,
activity, stress

 *Script:* "Do you notice if these lows happen more after big days on Country, or after certain evening meals?"

6

Plan one small change

Trial for 1–2 weeks

 *Script:* "Let's test adding a small supper snack, or adjusting your evening insulin timing. We'll check again in 2 weeks."

When Not to Act

Too little data or first 24 hrs

Wear time too low (<70%) or sensor is still settling

Implausible readings

2.5 mmol/L but patient looks fine

Patient overloaded

priorities support and focus on wellbeing, NOT numbers

Summary: Golden Rules for GPs

1. If story $\neq$ number
→ finger-prick ☐

2. One safe, small
change per visit ✓

3. Strengths-based
scripts ☑

THU 12 Oct

Glucose mmol/L

Max

Min

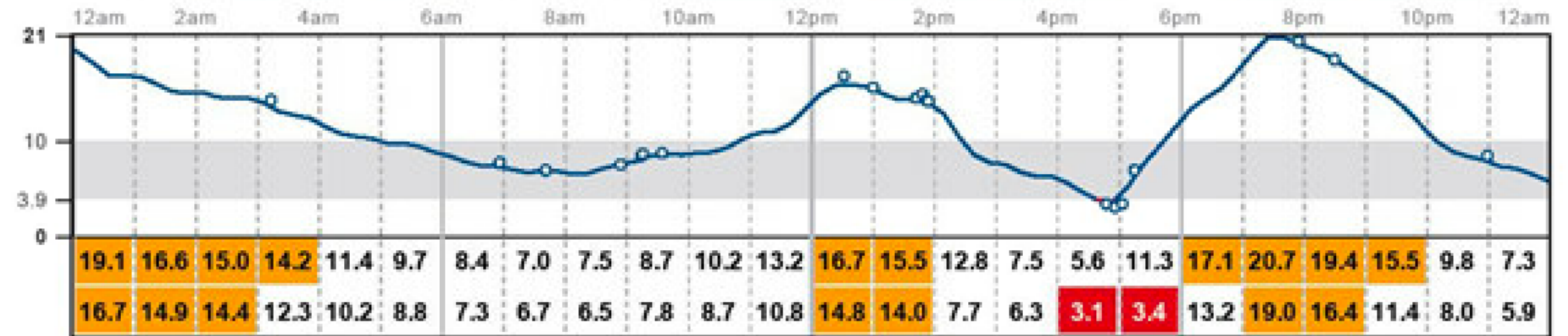


FRI 13 Oct

Glucose mmol/L

Max

Min

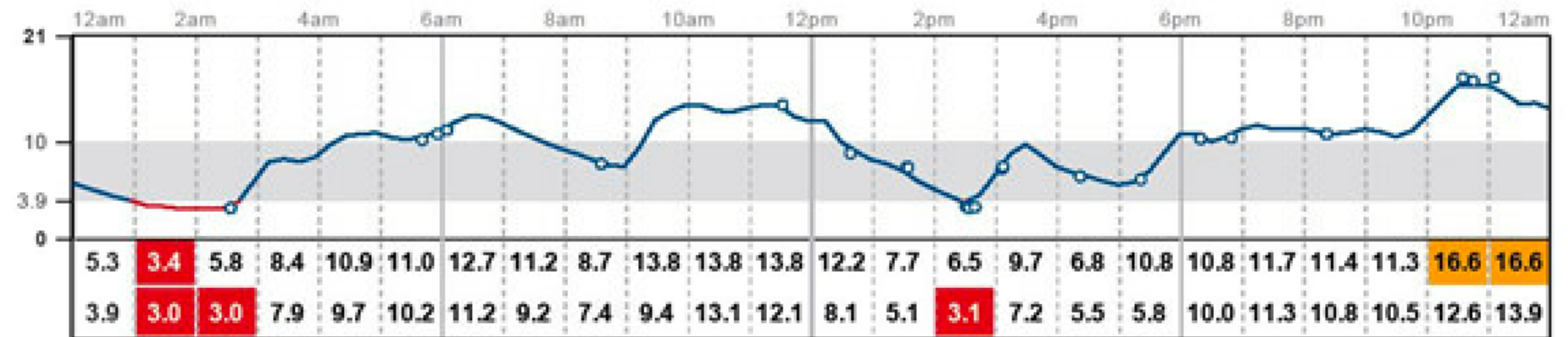


SAT 14 Oct

Glucose mmol/L

Max

Min



Step1-3 AGP (overnight lows) – NEED daily log view

Case Example

Step 4: AGP (overnight lows) – NEED daily log view

Step 5: Ask "What could be happening here?"

- Patient revealed correcting highs after dinner

Step 6: Plan change "What's one safe change you'd suggest?" or "What you think might work for you there?" → Then reveal the recommended action

- E.g. "reduce evening basal, or add snack"
- Book review in 1–2 weeks
- AHP/AHW, CDEs, dietitians key roles