



## Using remote monitoring and telemedicine to **access CGM data & work with Time in Range (TIR)**



## **CGM and TIR are shaping the future of diabetes care**

The COVID-19 pandemic triggered a dramatic advance in digital health, and remote consultations (telemedicine) are being established as a key feature of contemporary diabetes care.<sup>1-3</sup>

Using remotely accessed CGM data to improve diabetes management with TIR is an example of a new remote monitoring paradigm.<sup>4</sup> In a global survey of >1,700 HCPs, the overwhelming majority of participants agreed that TIR is changing the course of diabetes management. In fact, the vast majority agreed that TIR is likely to become the standard of diabetes management.<sup>5</sup>

## Patients responded positively to telemedicine during COVID-19<sup>2</sup>

30%

reported that their healthcare access suffered during COVID-19

86%

found remote consultations useful

75%

indicated that they would continue with remote appointments in the future

# CGM & digital health benefits for clinical practice:

Empowering you to optimise the effectiveness and cost of diabetes care<sup>2,5,6</sup>

## How can CGM data be used for remote monitoring?

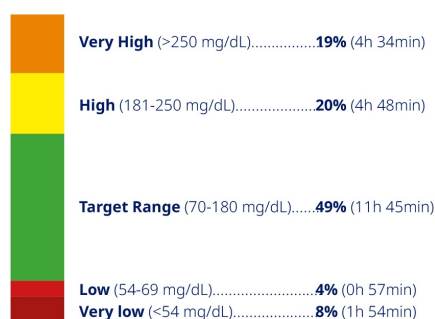
All CGM systems consolidate glucose data in a 14-day Ambulatory Glucose Report (AGP)<sup>7</sup>

1

### GLUCOSE STATISTICS AND TARGETS

| 11 Jul 2019 - 24 Jul 2019  | 14 days                       |
|--|-------------------------------|
| % Time CGM is Active   | 99,3%                         |
| Glucose Ranges   |                               |
| Target Range 70-180 mg/dL  | Greater than 70% (16h 48 min) |
| Below 70 mg/dL   | Less than 4% (58min)          |
| Below 54 mg/dL   | Less than 1% (14min)          |
| Below 180 mg/dL  | Less than 25% (6h)            |
| Below 250 mg/dL  | Less than 5% (1h12min)        |
| Each 5% increase in time in range (70-180mg/dL) is clinically beneficial |                               |
| Targets [% of Readings (Time/Day)]                                       |                               |
| Average Glucose  | 114 mg/dL                     |
| Glucose Management Indicator (GMI)                                       | 6.8%                          |
| Glucose Variability  | 33.8%                         |

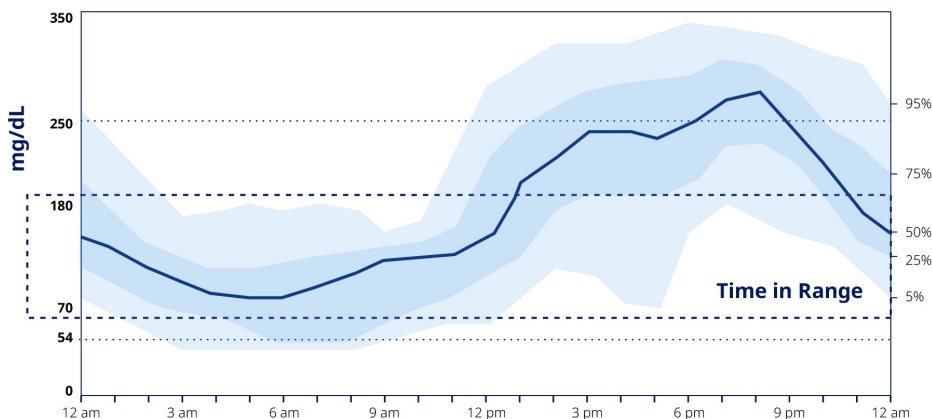
### TIME IN RANGES



Unit conversions: 250 mg/dL=13.9 mmol/L; 181-250 mg/dL =10.1-13.9mmol/L; 180 mg/dL=10.0 mmol/L; 70-180 mg/dL =3.9-10 mmol/L; 70 mg/dL=3.0 mmol/L; 54-69 mg/dL =3.0-3.8 mmol/L; 54 mg/dL=3.0 mmol/L.

2

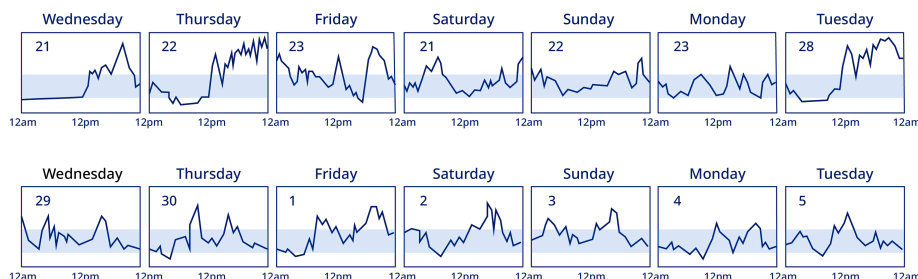
### AMBULATORY GLUCOSE PROFILE (AGP)



Uploadable  
Via cloud  
access or  
CGM device  
software<sup>7,8</sup>

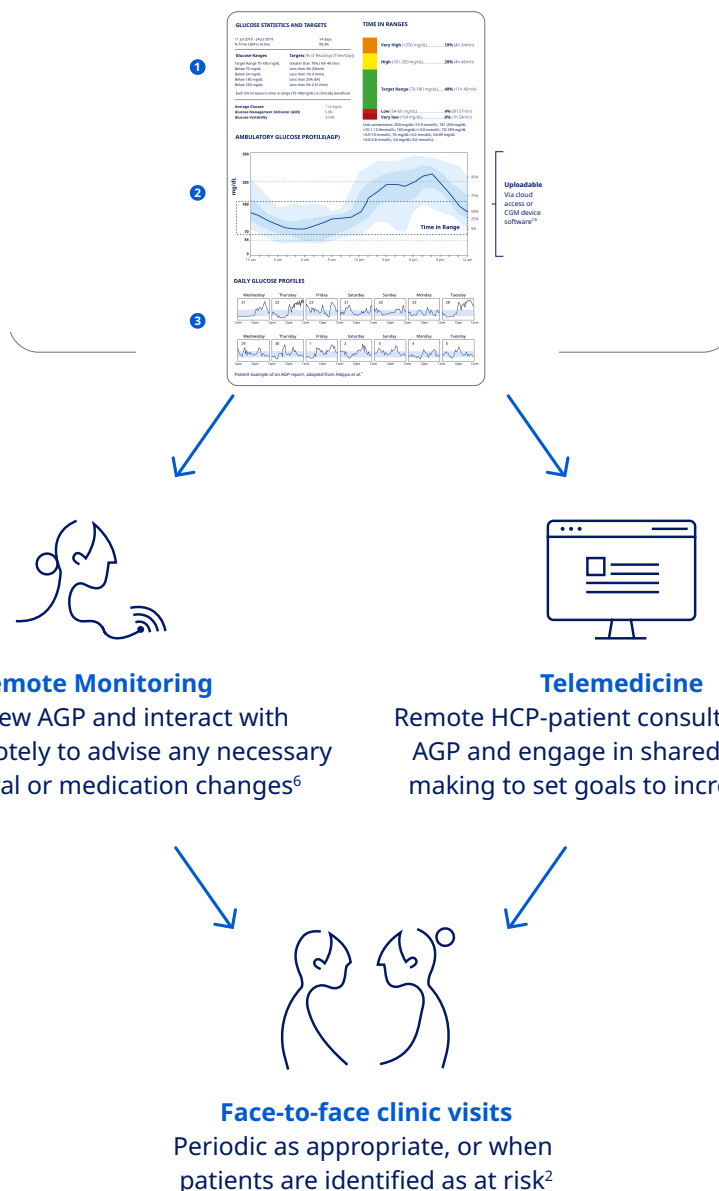
3

### DAILY GLUCOSE PROFILES



Patient example of an AGP report, adapted from Aleppo et al.<sup>7</sup>

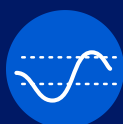
All CGM systems consolidate glucose data in a 14-day Ambulatory Glucose Report (AGP)<sup>7</sup>



## How can remote use of CGM data support self-management and glycaemic management?



Interaction with HCPs via connected devices can increase access to clinical care, online coaching and support programs<sup>6</sup>



Personal target glucose ranges are input into CGMs, so remote monitoring enables individualised care optimal glycaemic control<sup>3</sup>



Global patient qualitative research suggests that learning to read the AGP supports positive lifestyle and management choices in between telemedicine consults<sup>9</sup>



Global research suggests that TIR could help promote self management and improve patient adherence to medication<sup>5,9</sup>

## What information can CGM data show me about my patients?

The 3 AGP sections show:<sup>10</sup>

- 1
  - Glucose variability (%CV)
  - Average glucose
  - Glucose management indicator (GMI)
  - % time spent within target glycaemic range (TIR) and above or below range (TAR and TBR)


- 2 Ambulatory glucose profile (AGP): Glucose fluctuations over a typical 24 hour period

- 3 Individual daily glucose profiles

## Is there evidence that using telemedicine to work with TIR can improve glycaemic control?

In **27 international cohorts** of patients monitored during COVID-19:<sup>2</sup>

Majority had a significant increase in TIR\*

There was a median increase of **3.3%<sup>†</sup>** in **18 out of 27** cohorts 

**30%** of cohorts with TIR data reported improvements of **>5%<sup>‡2</sup>**

\*19 out of 27 cohorts demonstrated significant increases in TIR.  
†Range: -6.0 to 11.2%. ‡Improvements were clinically significant.<sup>2</sup>

Telemedicine and remote monitoring have been proven to **improve glycaemic control, reduce** diabetes-related **distress** and **enhance adherence** to medication, with improved time and cost-efficiency vs. in-clinic care<sup>8</sup>

### References

1. Peek N, Sujan M, Scott P, *et al.* Digital health and care in pandemic times: impact of COVID-19. *BMJ Health Care Inform* 2020;27(1):e100166.
2. Danne T, Limbert C, Puig Domingo M, *et al.* Telemonitoring, Telemedicine and Time in Range During the Pandemic: Paradigm Change for Diabetes Risk Management in the Post-COVID Future. *Diabetes Ther.* 2021; 12(9): 2289–2310.
3. Wilmot EG, Lumb A, Hammond P, *et al.* Time in range: A best practice guide for UK diabetes healthcare professionals in the context of the COVID-19 global pandemic. *Diabet Med.* 2021; 38(1): e14433.
4. American Diabetes Association (ADA) Standards of Medical Care in Diabetes 2023. *Diabetes Care.* 2023; 46(Supplement 1): S1–S292.
5. Cheng A, Ginovker A, Christensen T. B, *et al.* Healthcare professionals' knowledge, usage and attitudes towards the use of time in range in diabetes management: an online survey across seven countries. [oral presentation #657] EASD 2022 September 19–23. Available from: <https://sciencehub.novonordisk.com/congresses/easd2022/Cheng.html> [Accessed February 2023]
6. Carlson AL, Martens TW, Johnson L *et al.* Continuous Glucose Monitoring Integration for Remote Diabetes Management: Virtual Diabetes Care with Case Studies. *Diabetes Technol Ther.* 2021; 23(S3): S56–S65.
7. Aleppo G. Clinical Application of Time in Range and Other Metrics. *Diabetes Spectr.* 2021; 34(2): 109–118.
8. Martens TW, Parkin CG. How use of continuous glucose monitoring can address therapeutic inertia in primary care. *Postgrad Med.* 2022; 134(6): 576–588.
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