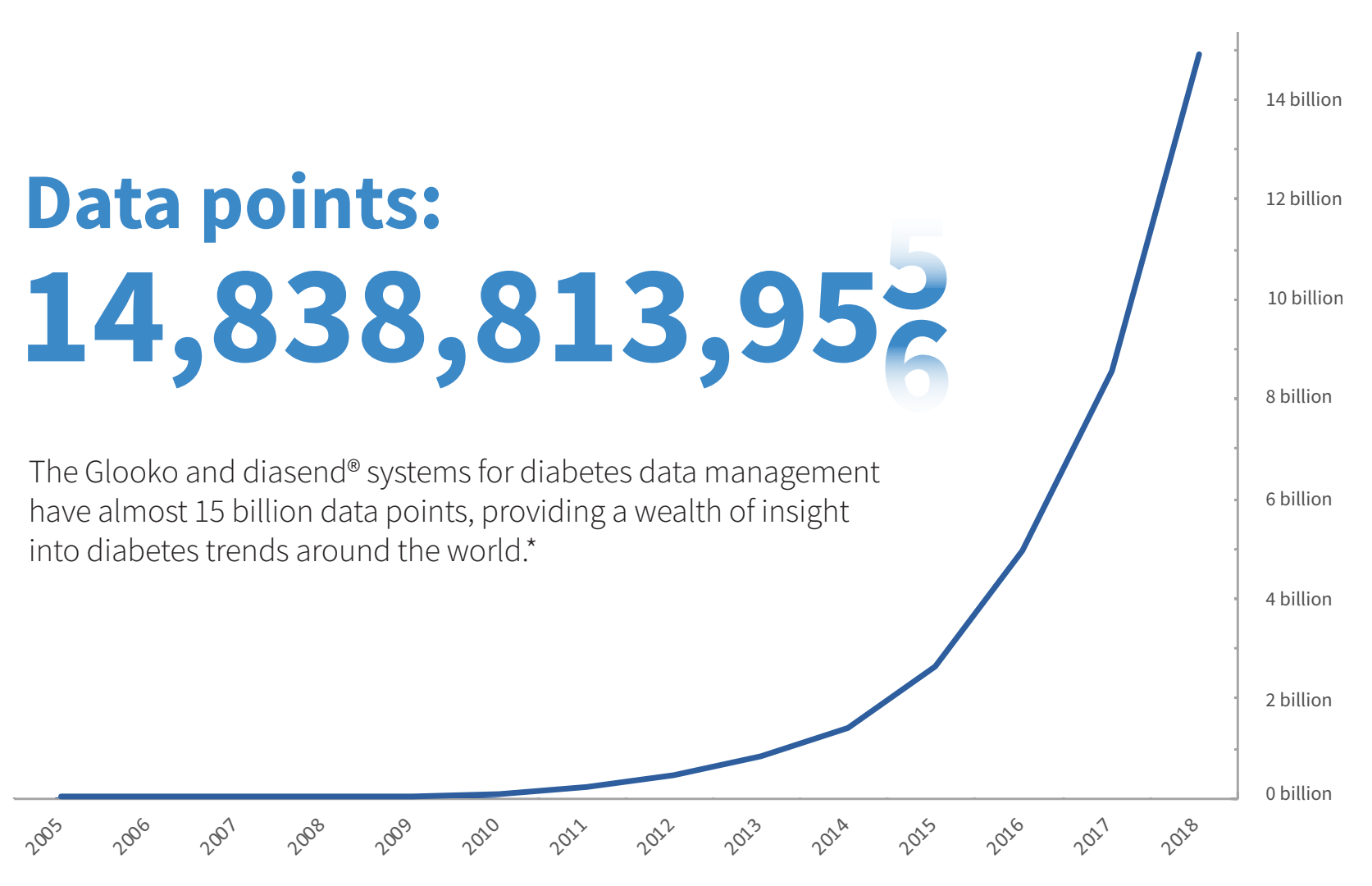
Glooko's
Annual Diabetes Report 2018

Data points: 14,838,813,956

The Glooko and diasend® systems for diabetes data management have almost 15 billion data points, providing a wealth of insight into diabetes trends around the world.*



* This report only contains information from countries with a statistically valid number of data points. Data from Norway is not included.

Blood Glucose Averages Around the World

AVERAGE BG PER COUNTRY

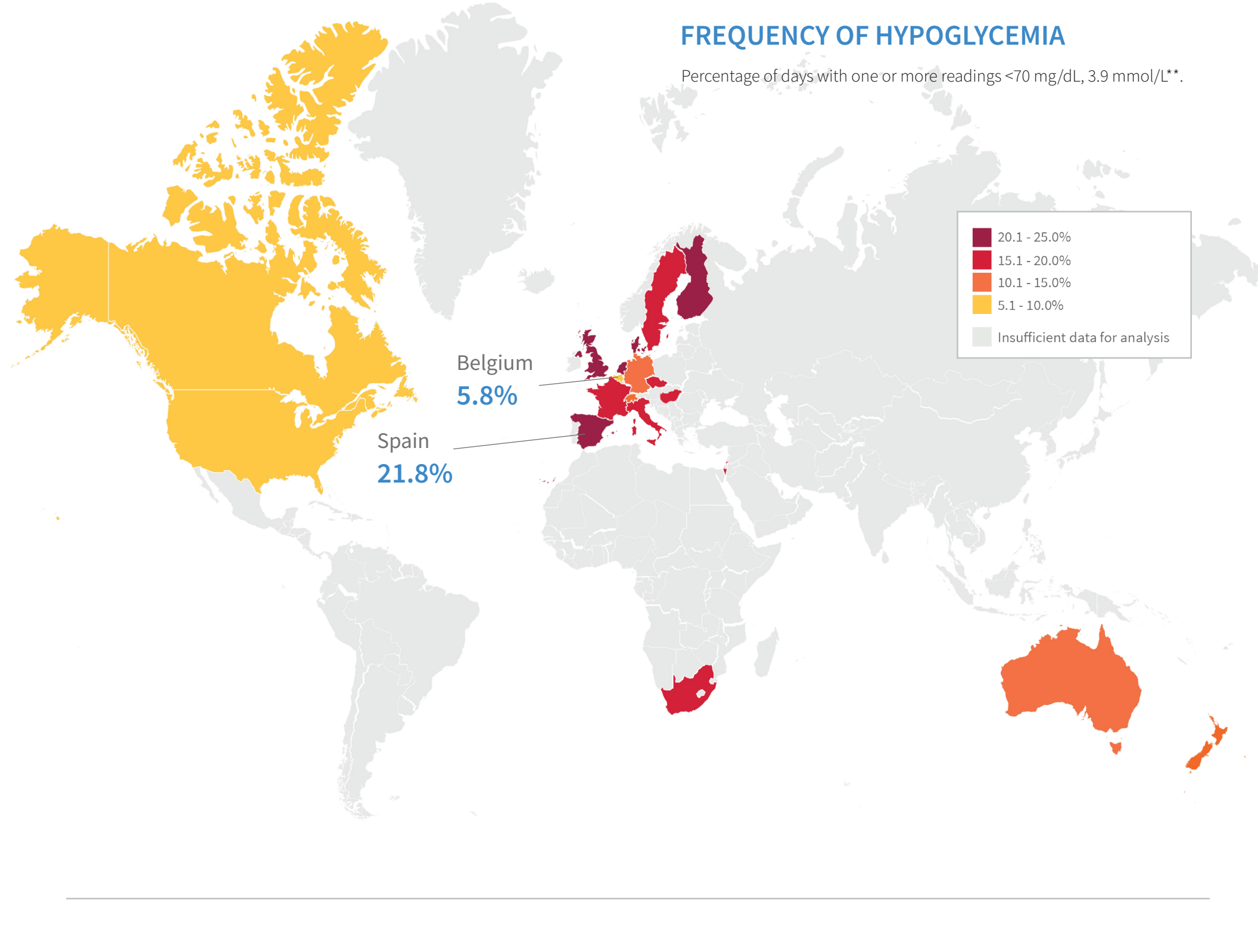
Country	Average BG		Standard Deviation	
	mg/dL	mmol/L	mg/dL	mmol/L
Belgium	156	8.6	48	2.7
France	161	8.9	64	3.6
Czech Republic	163	9.1	59	3.3
Germany	167	9.3	54	3.0
Canada	171	9.5	59	3.3
France	172	9.5	69	3.8
Italy	172	9.6	68	3.8
Sweden	173	9.6	80	3.6
South Africa	169	9.8	78	3.9
Israel	169	9.8	80	3.8
USA	169	10.2	78	3.6
Netherlands	169	10.3	80	4.4
Denmark	169	10.3	78	4.2
United Kingdom	169	10.3	80	4.4
Finland	169	10.4	78	4.2
Australia	169	11.0	78	4.4
New Zealand	198	11.0	81	4.5

LOWEST AVERAGE BG: BELGIUM
156 mg/dL
8.6 mmol/L

HIGHEST AVERAGE BG: NEW ZEALAND
198 mg/dL
11.0 mmol/L

FREQUENCY OF HYPOGLYCEMIA

Percentage of days with one or more readings <70 mg/dL, 3.9 mmol/L**.



BEST DAY AND WORST DAY

September 20
January 1

Days with the highest and lowest percentage of readings in range (70-144 mg/dL or 3.9-8.0 mmol/L***).

MOST COMMON TIME FOR HYPOGLYCEMIA

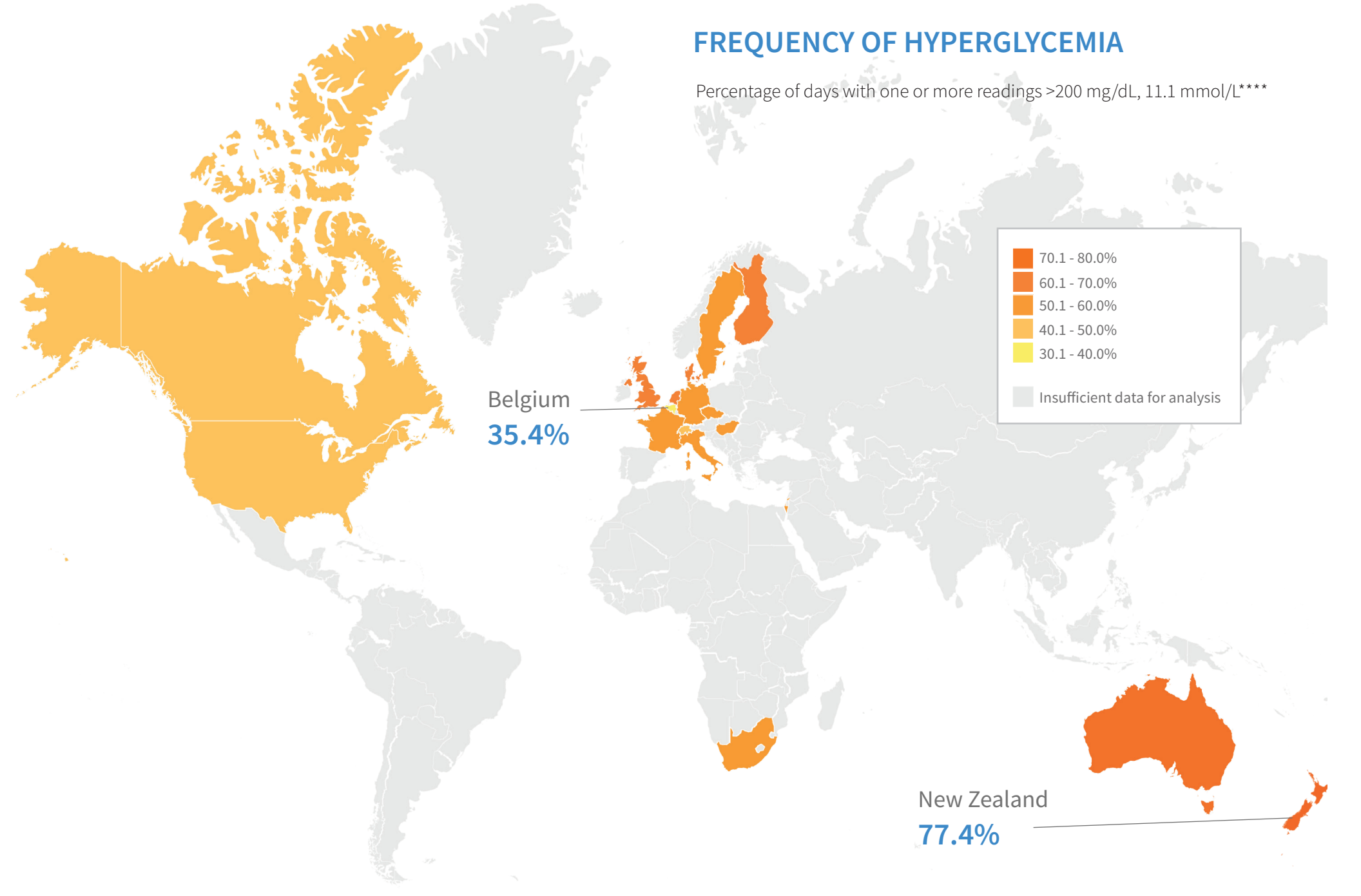
Thursday, 2am (02:00)
8%
of all BG readings are <70mg/dL or <3.9 mmol/L***.

MOST COMMON TIME FOR HYPERGLYCEMIA

Saturday, 11pm (23:00)
48.3%
of all BG readings are >200 mg/dL or >11.1 mmol/L***.

FREQUENCY OF HYPERGLYCEMIA

Percentage of days with one or more readings >200 mg/dL, 11.1 mmol/L****



AVERAGE BG ON HOLIDAYS

Compare with your country's general blood glucose average at the top!

VALENTINE'S DAY
188 mg/dL
10.4 mmol/L

HALLOWEEN
186 mg/dL
10.3 mmol/L

CHRISTMAS DAY
198 mg/dL
11.0 mmol/L

NEW YEAR'S EVE
187 mg/dL
10.4 mmol/L

Diabetes Management

LEAST INTERRUPTED SLEEP

Nights with the least number of sleep interruptions (measured by having at least one glucose measurement - not including CGM - between midnight and 6am).

1. AUSTRALIA
   1.5 %
2. NEW ZEALAND
   2.1 %
3. FRANCE
   2.7 %

AVERAGE BOLUS DOSE/MEAL

BREAKFAST 3.8 U

LUNCH 4.2 U

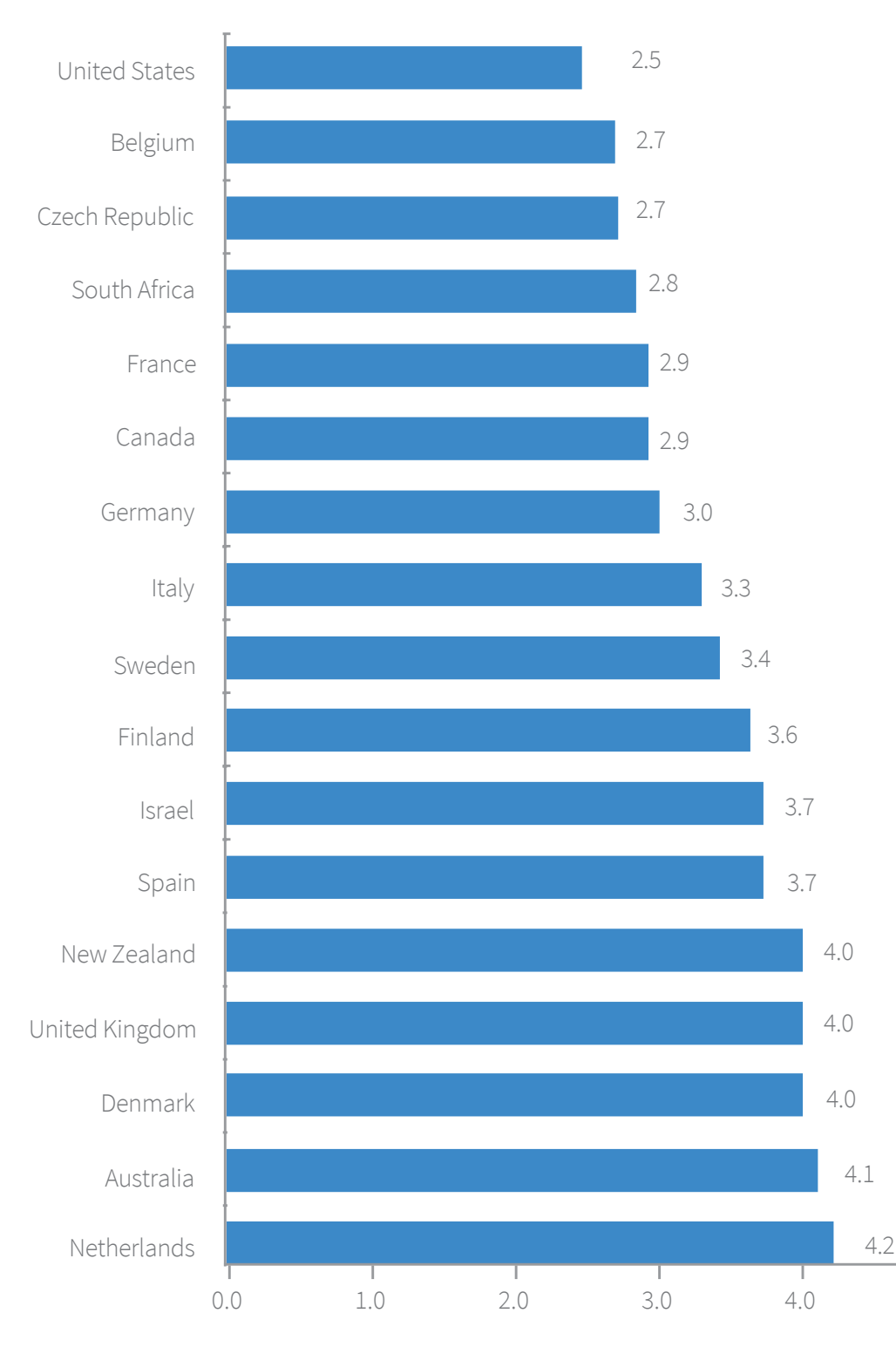
DINNER 4.8 U

RECORDED INSULIN VOLUME

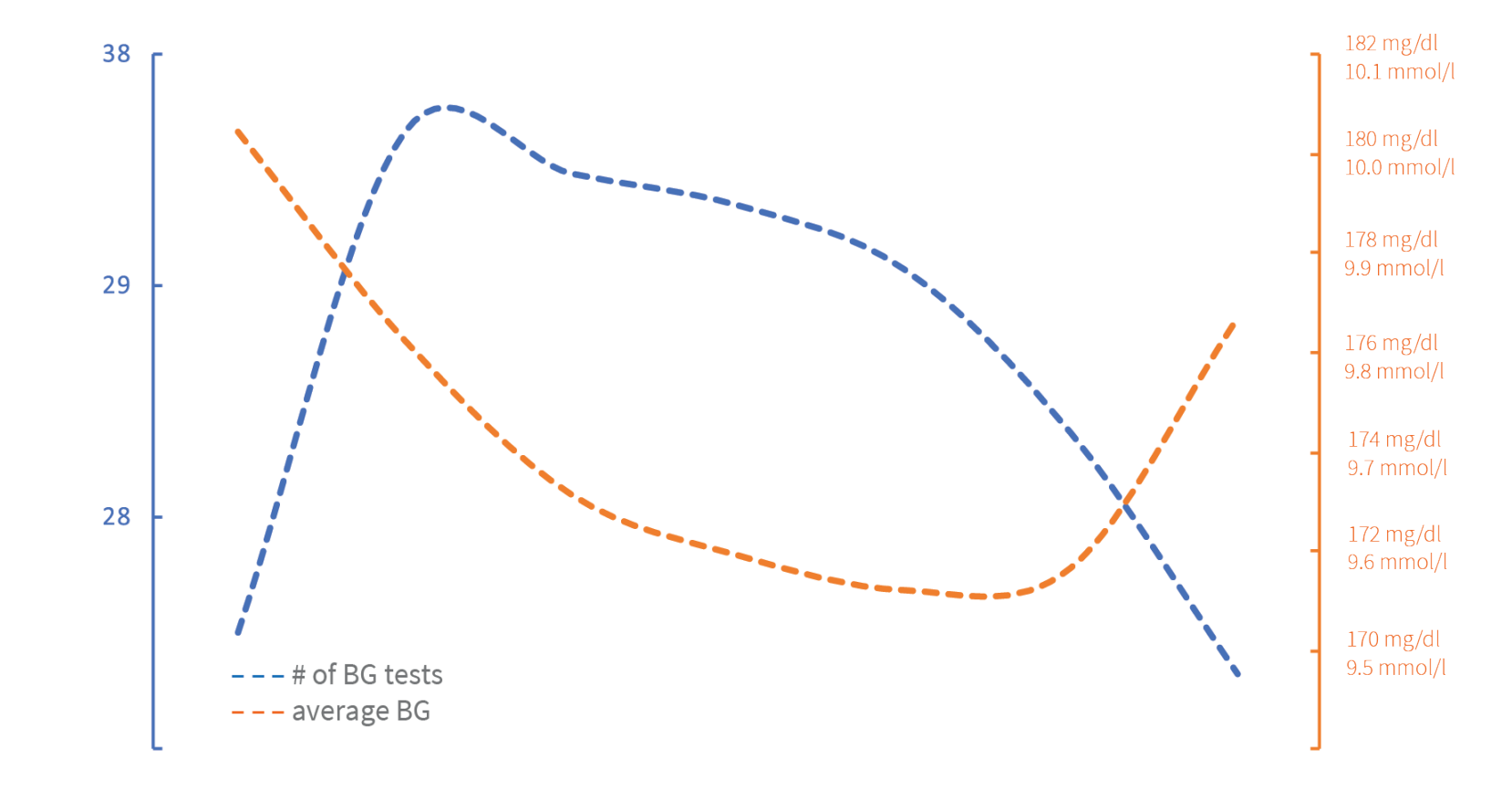
Glooko and diasend® users delivered 12,556 liters of insulin in 2018. That's enough to fill 84 bathtubs!

AVERAGE NUMBER OF BLOOD GLUCOSE READINGS/DAY

Data shown is per active day (days with at least one BG reading).

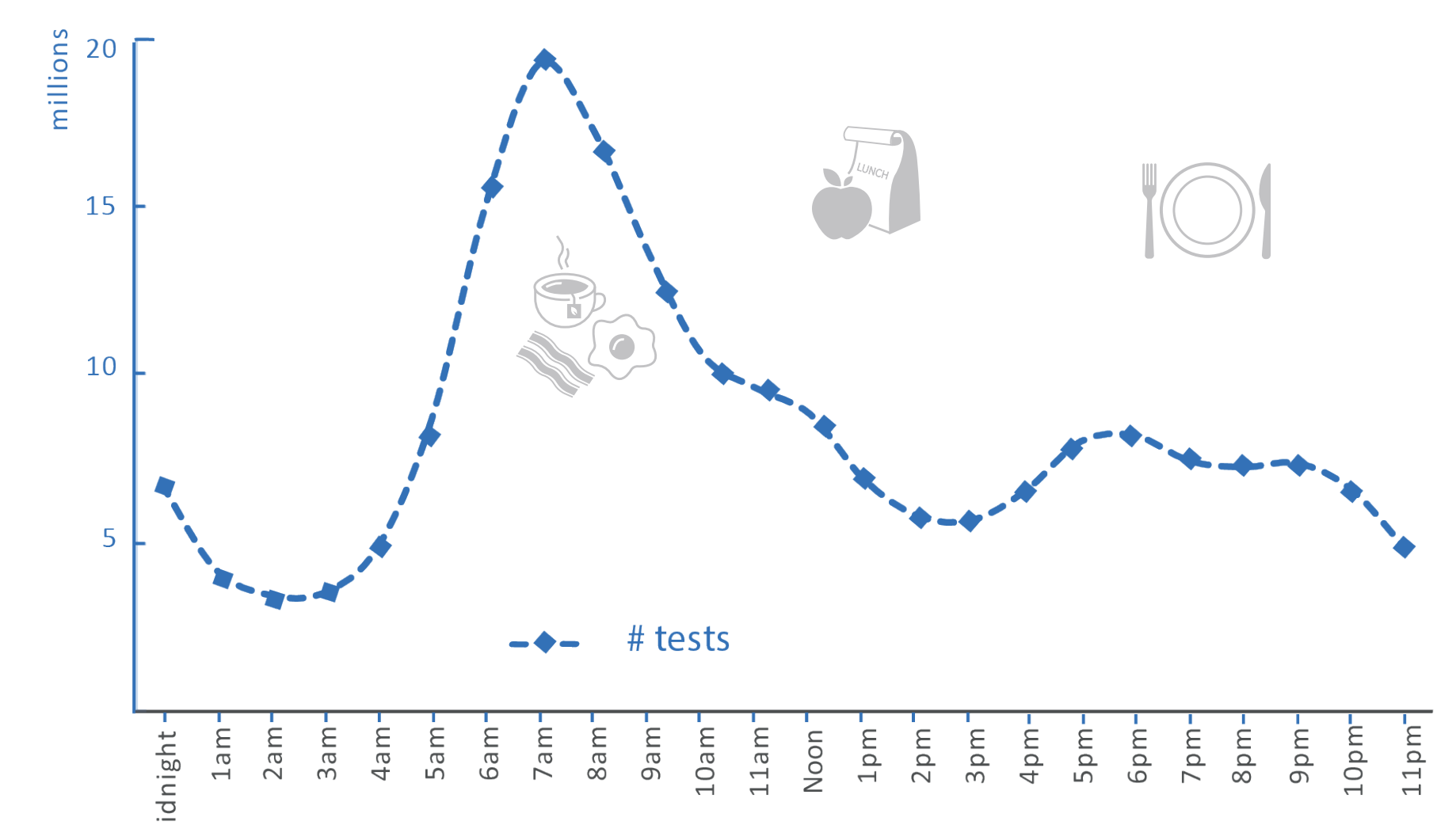


NUMBER OF BG TESTS AND AVERAGE BG DURING THE WEEK



FREQUENCY OF BG TESTS BY TIME OF DAY

Number of BG tests increase around meal times.



GLOOKO: GENERATING INSIGHTS AIMED AT IMPROVING OUTCOMES

Introduction

Diabetes is a very prevalent condition, with over 400 million people diagnosed globally driving $825B in healthcare costs*. Managing diabetes is a complicated and data-intensive effort: blood glucose levels are affected by a myriad of factors, including food, medication, activity, stress, hormones, illness, and many others. People with diabetes (PWDs) often use multiple devices, such as blood glucose monitors, insulin pumps, and continuous glucose monitors (CGMs) to help manage the condition. These devices generate a plethora of data, but analyzing the data can be complicated and time consuming. Solutions that offload some portion of that burden from PWDs and providers and generate insights to inform treatment decisions can help make diabetes management more effective and efficient.

Glooko offers a universal diabetes management solution that provides insights that improve diabetes. Compatible with over 190 diabetes devices, as well as popular activity and biometric trackers, Glooko syncs data from these disparate sources to create one of the world's largest diabetes databases, containing over 14B datapoints. With 9,000 clinic locations and over 2.2M PWDs on its solution, Glooko helps users understand glucose patterns and trends with interactive data visualizations and data analytics, machine learning, and AI.

Individual and population level insights

Glooko provides individual and population level insights that can inform care, such as the most common time for hypoglycemia and the "Best Day" and "Worst Day" for glycemic control. With this information, PWDs and providers can assess what factors may contribute to these patterns and take any corrective action that may be needed.

Glooko uses algorithms and advanced data analytics to process large volumes of data into insights that can be used by providers and PWDs to make treatment decisions. Accuracy of these insights is key: Glooko follows a rigorous process when developing, testing, and validating analytics capabilities. In 2018, Glooko published a poster** demonstrating the efficacy of its "Best Day" algorithm, which analyzes CGM data to assess glycemic control. Compared with the assessment of 57 clinicians familiar with CGM interpretation (29 endocrinologists and 28 diabetes educators), the algorithm correctly identified the "Best Day" selected by clinicians 9 out of 10 times. For the instance when the algorithm and clinicians did not agree, the algorithm and clinicians agreed on the two top ranked days.

Glooko's robust database of over 14 billion datapoints reveals global trends, such as the correlation between the frequency of blood glucose testing with glucose values and average blood glucose values by country, that can help providers, researchers, and the diabetes community identify opportunity areas for more detailed care, clinical research, or new product development.

This data also sheds light on the sheer effort it takes to manage diabetes on a daily basis. Glooko users test, on average, between 2.5 - 4.2 times per day and use the results to make decisions including what and how much they should eat, how much insulin to take, whether to exercise. Glooko has over 30M datapoints on blood glucose tests conducted on Mondays alone – imagine the amount of data PWDs generate every single day, over the course of their lives in managing the condition, and with that, the energy and effort needed to understand and take action on that data.

Real world applications

Glooko currently offers two similar solutions for diabetes data management. In EMEA/APAC, the diasend® solution, and in North America/Canada – the Glooko product. As an example, looking at the latter, it has been demonstated that population level data drives improvement in outcomes when used to provide patients with support in-between appointments. By using Glooko, populations experience a 12% improvement in average blood glucose, a 34% increase in blood glucose testing frequency, and a 15% reduction in the risk of hyperglycemia within three months***.

Health systems in the United States have used Glooko remote monitoring to help their diabetes populations achieve better outcomes. Sharp Rees-Stealy, a leading healthcare provider in San Diego, CA, implemented Glooko to remotely monitor a population of patients with Type 2 diabetes. These patients used Glooko to sync their glucose meters, insulin pumps, and continuous glucose monitors. Case managers followed up with patients monthly, and used the data synced by the patients to discuss blood glucose trends and medication and lifestyle adjustments. Patients in the program doubled their testing frequency and improved their average blood glucose by 10%.

Outside the US, Glooko's diasend® solution is used in 23 countries for diabetes data management and has achieved near 100% specialty clinic penetration in Sweden and England.

Looking forward

Glooko continues to invest in developing products and solutions that enhance decision support and improve outcomes for people with diabetes. Digital therapeutic modules that aim to get patients to their optimal insulin and medication doses faster are one priority area, adding to the existing Glooko portfolio which includes the FDA-cleared Mobile Insulin Dosing System that titrates long-acting insulin. Advanced data analytics and population insights is another focus area: Helping health systems, providers, and other stakeholders better understand how their diabetes populations are doing, the utilization and efficacy of therapies, among other key insights.

Glooko's aim to improve outcomes for people with diabetes is dependent upon the ability to easily sync data from the multitude of diabetes devices on the market, the ability to generate informative, actionable insights for users, and the ability to create a positive, valuable user experience. As the Glooko solution evolve, it will remain the guiding principles to ensure we deliver against our goals.

Footnotes:
* *International Diabetes Federation Diabetes Atlas 7th Edition 2015; https://www.hsph.harvard.edu/news/press-releases/diabetes-cost-825-billion-a-year/*
** *Validation of a Novel Algorithm for Interpreting Glycemic Control from CGM Data, 2018*
*** *Improvement after 3 months for users in Glooko remote monitoring programs with coaching; Diabetes Management Application Improves Self Care Behavior and Glycemic Control, 2016*

COMPATIBLE WITH MORE THAN 190 DIABETES DEVICES. A FEW OF OUR PARTNERS:

Abbott · arkray · ASCENSIA Diabetes Care · CareSens® · dexcom · Insulet · Medtronic · MENARINI · novo nordisk · ONETOUCH® Every Touch is a Step Forward™ · ReliOn® Live Your Best For Less. · TANDEM® DIABETES CARE · Roche · TRIVIDIA HEALTH

** *ADA guidelines, click here for more information.*
*** *Diabetes UK Guidelines, click here for more information.*
**** *World Health Organization guidelines, click here for more information.*

ABOUT GLOOKO

Glooko's universal diabetes software products provide insights to improve outcomes for people with diabetes (PWDs) and their care teams. The Glooko product suite contains the diasend® and Glooko diabetes management solutions, which integrate with many of the leading EHR systems used today. Both systems sync data from 190+ of the world's most popular diabetes devices, major fitness and activity trackers and supplies personalized, timely patient data such as glucose level, food, insulin, medications, blood pressure and weight data. Trusted by the world's leaders in diabetes care, our solutions cover more than 2.2 million PWDs and are used in 9,000 clinic locations in 23 countries across 15 languages. Learn more by visiting www.glooko.com.

For more information visit: glooko.com, Facebook, Twitter, LinkedIn, YouTube.

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