Guide to Blood Glucose Monitor (BGM) Visualizations

https://jcst2d.com
https://jcsanalytics.com

Visualizations

Profile

Glucose Profile is a standardized, single-page report that offers a comprehensive overview of glucose management, modeled after the proprietary Ambulatory Glucose Profile (AGP) report. The report has several key components, including:

- **Modal Day BGM Values**: Offers a 24-hour view of glucose patterns, which combines data from multiple days. It shows all values as if thay occured on a single day, which aids in determining daily patterns.
- **Glucose Metrics**: Displays average glucose, coefficient of variation, estimated A1c, BGM usage, and days with BGM data.
- **Daily Glucose Charts**: Presents single-day glucose charts for more detailed analysis.
- **Time in Range**: Visualizes the percentage of time spent in various glucose ranges using color-coded bars. Each 1% equates to approximately 15 minutes within a specific glucose range.

Daily View

Daily View offers an in-depth analysis of a patient's glucose data for individual days. It allows users to:

- **Assess** glucose fluctuations throughout the day.
- **Pinpoint** specific times or events that contribute to glucose fluctuations.
- **Understand** how daily activities, meals, or medications influence glucose levels.
- **Detect** recurring patterns on specific days of the week.
- **Investigate** anomalies or unusual glucose events on particular days.

Comparison

Comparison allows users to analyze glucose data across two time periods. This side-by-side comparison helps with:

- **Evaluating** overall progress in glucose management.
- **Visualizing** specific changes, such as the impact of medication adjustments.
- **Monitoring** improvements in both short-term and long-term diabetes management.

Note: The graphs aggregate glucose readings into 15-minute intervals.

Monthly Values

Monthly Values displays average glucose levels and estimated A1c (eA1c) by month for the most recent 12 months and the first 12 months of data.

This report provides a straightforward comparison of monthly glucose control over time.

Values by Treatment

Values by Treatment groups blood glucose readings by treatment dose and displays only the most recent 90 days of data for each treatment when more than 90 days are available. This approach keeps the analysis consistent with how estimated A1c (eA1c) is calculated and ensures that each comparison reflects current treatment response.

This report is useful for:

- **Comparing** average glucose values across treatment doses.
- **Assessing** glucose variability at each treatment level.
- **Visualizing** the impact of starting and maintaining treatment.
- Supporting retrospective analysis of short-term treatment response.

The visualizations show a clear relationship between treatment dose and glucose control within the most recent 90-day period.

Note

The visualizations now follow the same format as those for CGM data, enabling direct comparisons with CGM data. While BGM data is limited in capturing real-time trends, it remains essential for establishing baseline readings, monitoring trends, and providing a cost-effective alternative for individuals without CGM access.

https://public.tableau.com/views/BGMData/BloodGlucoseMonitorBGMData?:language=en-US&:sid=&:redirect=auth&:display_count=n&:origin=viz_share_link

! These visualizations are part of a data visualization exercise in Tableau. The data are observational and not intended to guide treatment decisions. Individual results may vary.

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Common Measures

Glucose Metrics

Displays key measurements for the selected date range, including the following:

Average Glucose

The mean of all glucose readings from the selected date range.

Coefficient of Variation (CV)

The glucose standard deviation divided by the mean glucose. CV is a standardized measure that assesses the magnitude of glucose variability.

Estimated A1c (eA1c)

An approximation of the A1c level expected, based on average glucose measured by a limited number of daily fingerstick readings per day.

Standard Deviation (SD)

Represents glycemic variability by showing how much BGM readings rise and fall from the average.

BGM Usage

The number of readings divided by the number of expected readings for the selected period, displayed as a percentage.

Days with BGM Data

The number of days for the selected time period with two or more fingerstick readings.

Note About CV and SD

Results may vary more significantly day-to-day compared to CGM data due to the limited number of fingerstick readings.

Time in Range

Displays the percentage of time that glucose levels fall within the specified ranges. Data is shown both as text and in a stacked bar graph.

Very High: Above 250 mg/dL
High: 181-250 mg/dL
In Range: 70-180 mg/dL
Low: 54-69 mg/dL
Very Low: Below 54 mg/dL

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