

This is my time in range chart for the past month. What recommendations would you make?

Thanks for sharing your 31-day glucose distribution chart (May 13, 2025 - June 12, 2025). This data, likely from a CGM, provides valuable insights into your type 1 diabetes management, especially with your background retinopathy and hypo struggles in mind. Here's an analysis and tailored recommendations based on the metrics:

Key Observations A1C Estimate: 6.0% (DCCT) / 42 mmol/mol (IFCC) – This is excellent and within the target range (10 mmol/L or >180 mg/dL): 11.0% (946 readings) – A notable portion of time in hyperglycemia, with an average of 11.5 mmol/L (207 mg/dL), which could stress retinal blood vessels over time. Glucose Variability (GV): 1.55 – Within a reasonable range (0.27 mmol/L/5m) and 11% in rapid fluctuation (>0.55 mmol/L/5m) suggest some instability. Mean Glucose: 7.0 mmol/L (126 mg/dL) – Solid overall average, supporting your A1C. Mean Hourly Change: 3.37 mmol/L – Indicates frequent shifts, contributing to variability. Out of Range RMS: 6.81 mmol/L – Reflects the magnitude of deviations from target, suggesting room to smooth out highs and lows. **Recommendations** Given your T1D, background retinopathy, and hypo challenges, the goal is to maintain your strong TIR and A1C while reducing hypos and highs to protect your eyes and ease daily management.

1. Address Hypoglycemia (5.6%) Refine Insulin Dosing: Work with your endocrinologist to adjust basal insulin (e.g., lower overnight rates if lows occur at night) or bolus ratios, especially if hypos follow meals or exercise. Your average low (3.0 mmol/L) suggests timely correction, but frequency needs reduction. **Enhance Hypo Preparedness:** Continue using the 15-15 rule (15g fast-acting carbs, e.g., glucose tabs, wait 15 minutes, recheck) to treat lows. Carry extras due to your hypo struggles, and consider a glucagon emergency kit if not already in place. **Leverage CGM Alerts:** Set custom low alerts (e.g., 4.0 mmol/L or 72 mg/dL) to catch drops early, especially during sleep or activity. This can reduce severe hypos. **Exercise Adjustments:** Since you've noted hypo difficulties, test glucose before and after exercise. Reduce bolus insulin or add 10-15g carbs for workouts to prevent drops.

2. Reduce Hyperglycemia (11.0%) Optimize Meal Boluses: The 11.0% high time suggests overestimating carbs or delayed insulin. Use your CGM to time boluses 10-15 minutes before meals (if safe) or adjust ratios with your doctor. Log meals via an app (e.g., mySugr) to refine carb counts. **Address Post-Meal Spikes:** Your mean high (11.5 mmol/L) and rapid fluctuation (11%) indicate postprandial highs. Consider splitting boluses (50% upfront, 50% over 1-2 hours) for high-carb meals or adding a small correction dose if approved by your doctor. **Review Insulin Absorption:** Check injection sites for lipohypertrophy (lumpy areas from repeated injections), which can delay insulin action. Rotate sites and ensure proper technique.

3. Minimize Glucose Variability Stabilize Patterns: The 30% time in fluctuation and 3.37 mmol/L hourly change suggest inconsistent insulin delivery or meal timing. Aim for regular meal schedules and consistent carb intake (e.g., 30-45g per meal) to reduce swings. **Consider Advanced Tech:** If not using a pump, a hybrid closed-loop system (e.g., Control-IQ) could auto-adjust insulin to smooth out fluctuations, protecting your retinopathy. Discuss with your endocrinologist. **Stress Management:** Stress or illness can spike glucose. Incorporate brief relaxation (e.g., 5-minute breathing exercises) to stabilize levels, especially given your retinopathy.

4. Protect Eye Health (Given Background Retinopathy) Maintain A1C and TIR: Your 6.0% A1C and 83.4% TIR are excellent for slowing retinopathy progression. Aim to keep TIR above 70% and reduce highs (

Would you like me to search X for community tips on managing hypos or highs with similar CGM data, or focus on a specific aspect (e.g., insulin adjustments, diet)?

Thanks. This is my AGP graph. Can you enhance you recommendations using it please?

Thank you for sharing your Ambulatory Glucose Profile (AGP) graph for the past 31 days (May 13, 2025 - June 12, 2025). This complements your earlier glucose distribution chart and provides a detailed view of your daily glucose patterns, which is especially useful given your type 1 diabetes, background retinopathy, and struggles with hypoglycemia. The AGP shows percentiles (10th, 25th, 75th, 90th) and median glucose levels across a 24-hour cycle, with thresholds for low (10 mmol/L or 180 mg/dL, yellow line). Here's an enhanced analysis and refined recommendations based on both datasets.

AGP Analysis Overall Pattern: The median glucose (thick black line) stays mostly between 5-10 mmol/L (90-180 mg/dL), aligning with your 83.4% TIR and 6.0% A1C from the distribution chart. This reflects good overall control. **Morning Stability (02:00-06:00):** The 10th percentile dips below 3.9 mmol/L, indicating occasional lows, consistent with your 5.6% low time. The spread narrows overnight, suggesting stable basal insulin but with hypo risk. **Morning Rise (06:00-10:00):** A noticeable upward shift in the 75th and 90th percentiles, with the 90th exceeding 10 mmol/L by 08:00-10:00. This matches your 11.0% high time and may reflect dawn phenomenon or breakfast-related spikes. **Midday Peak (12:00-14:00):** The 90th percentile peaks above 10 mmol/L, suggesting post-lunch highs, possibly due to carb intake or delayed insulin action. **Afternoon/Evening (14:00-22:00):** The glucose range widens, with the 10th percentile dipping near 3.9 mmol/L and the 90th staying above 10 mmol/L at times. This indicates variability, aligning with your 30% time in fluctuation and 11% rapid fluctuation. **Nighttime (22:00-02:00):** The profile dips again, with the 10th percentile below 3.9 mmol/L, reinforcing nighttime hypo risk. **Enhanced Recommendations** Building on the previous advice and integrating the AGP, here's a tailored plan to reduce hypos and highs, stabilize variability, and protect your retinopathy.

1. **Address Hypoglycemia (5.6%, AGP Dips at 02:00-06:00 and 14:00-22:00)** **Adjust Basal Insulin:** The nighttime dip (02:00-06:00) and afternoon/evening lows (14:00-22:00) suggest overactive basal insulin. Work with your endocrinologist to reduce basal rates during these periods (e.g., lower by 10-20% overnight or late afternoon) and monitor with your CGM. **Nighttime Strategy:** Set a CGM low alert at 4.0 mmol/L (72 mg/dL) for sleep. If lows persist, add a small bedtime snack (e.g., 15g carbs + protein like cheese) to prevent drops. **Activity Timing:** The afternoon dip may link to exercise. Test glucose before and after activity (e.g., 14:00-16:00). Reduce bolus insulin by 20-50% or add 10-15g carbs for workouts to avoid hypos. **Hypo Treatment:** Stick to the 15-15 rule (15g fast-acting carbs, e.g., glucose tabs, wait 15 minutes, recheck). Carry extras during active hours (14:00-22:00) and keep glucagon accessible. 2. **Reduce Hyperglycemia (11.0%, AGP Peaks at 08:00-10:00 and 12:00-14:00)** **Tackle Dawn Phenomenon (06:00-10:00):** The morning rise (90th percentile >10 mmol/L) may be dawn phenomenon (early insulin resistance). Increase basal insulin slightly before 04:00-06:00 or take a small pre-breakfast correction bolus (e.g., 0.5-1 unit) if approved by your doctor. Monitor with CGM to confirm timing. **Optimize Lunch Bolus (12:00-14:00):** The midday peak suggests delayed insulin or high-carb meals. Bolus 10-15 minutes before eating (if safe) or use a dual-wave bolus (50% upfront, 50% over 1-2 hours) for complex meals. Log carbs via an app (e.g., mySugr) to adjust doses. **Check Injection Sites:** Ensure no lipohypertrophy (lumpy areas) at injection sites, as this can delay insulin action, contributing to post-meal highs. Rotate sites regularly. 3. **Minimize Glucose Variability (30% Fluctuation, 11% Rapid)** **Stabilize Meal Timing:** The widening range (14:00-22:00) suggests inconsistent carb intake or timing. Eat meals at regular intervals (e.g., 07:00, 12:00, 18:00) with 30-45g carbs each to reduce swings. Pair carbs with protein/fat (e.g., turkey with veggies) to slow digestion. **Consider a Pump:** The variability and peak/trough patterns (e.g., 08:00-10:00 highs, 02:00-06:00 lows) could benefit from a hybrid closed-loop system (e.g., Control-IQ), which adjusts insulin dynamically. Discuss with your endocrinologist. **Stress Management:** Afternoon/evening fluctuations may reflect stress. Try a 5-minute breathing exercise around 16:00 to stabilize glucose, especially

with retinopathy in mind. 4. Protect Eye Health (Background Retinopathy) Maintain TIR and A1C: Your 83.4% TIR and 6.0% A1C are ideal for slowing retinopathy. Focus on keeping the 90th percentile below 10 mmol/L (

Would you like me to search X for T1D community tips on managing AGP patterns (e.g., dawn phenomenon, hypos), or focus on a specific time (e.g., mornings, nights)? If you share meal/exercise details, I can refine further.

Great. Thanks for that. Here are the daily traces. Can you enhance any further with this information?

Thank you for sharing your week-to-week daily glucose traces (May 13, 2025 - June 12, 2025), which complement your earlier glucose distribution chart and AGP. These traces show daily glucose patterns for each day of the week across five weeks, with percentiles and thresholds (low 10 mmol/L). Given your type 1 diabetes, background retinopathy, and hypo struggles, I'll refine the recommendations further by analyzing trends across these traces and integrating them with your previous data (A1C 6.0%, TIR 83.4%, 5.6% low, 11.0% high, and AGP patterns).

Daily Traces Analysis Overall Stability: The median glucose (thick black line) generally stays between 5-10 mmol/L across all days, supporting your 83.4% TIR and 6.0% A1C. The light green shaded area (interquartile range) rarely exceeds 10 mmol/L or drops below 3.9 mmol/L, indicating good central tendency. **Recurrent Patterns:** Nighttime Lows (02:00-06:00): Visible dips below 3.9 mmol/L on multiple days (e.g., Thursday 29/05, Tuesday 13/05), consistent with your 5.6% low time and AGP nighttime dip. This suggests a consistent basal insulin issue overnight. Morning Rise (06:00-10:00): A frequent upward trend, with the 75th/90th percentiles often exceeding 10 mmol/L (e.g., Friday 30/05, Thursday 12/06), aligning with your 11.0% high time and AGP dawn phenomenon. Midday Peaks (12:00-14:00): Post-lunch spikes above 10 mmol/L are common (e.g., Friday 23/05, Thursday 22/05), reinforcing AGP midday highs. Afternoon/Evening Variability (14:00-22:00): Wider spreads with occasional lows (e.g., Tuesday 13/05) and highs (e.g., Thursday 12/06), matching your 30% fluctuation time and AGP variability. **Day-Specific Trends:** Thursdays (e.g., 29/05, 12/06): Notable highs in the morning and evening, possibly linked to routine changes (e.g., work, meals). Tuesdays (e.g., 13/05): More pronounced lows, potentially tied to activity or missed snacks. Fridays (e.g., 30/05, 23/05): Consistent midday peaks, suggesting lunch-related issues. **Enhanced Recommendations** Building on previous advice, here's a refined plan using the daily traces to address hypos, highs, variability, and retinopathy protection.

1. Address Hypoglycemia (5.6%, Nighttime 02:00-06:00, Afternoon 14:00-22:00) Adjust Basal Insulin: Nighttime (02:00-06:00): The recurring dips (e.g., Thursday 29/05, Tuesday 13/05) indicate excessive basal insulin overnight. Reduce basal rates by 10-20% between 01:00-05:00, then monitor with CGM. If lows persist, add a 15g carb snack (e.g., crackers) at bedtime. Afternoon (14:00-18:00): The Tuesday 13/05 low suggests activity or missed carbs. Lower basal by 10-15% during 14:00-18:00 on active days or add 10g carbs pre-exercise. **CGM Alerts:** Set a 4.0 mmol/L (72 mg/dL) low alert, especially for 02:00-06:00 and 14:00-18:00, to catch drops early. Review nightly data weekly. **Hypo Management:** Use the 15-15 rule (15g fast-acting carbs, e.g., glucose tabs, wait 15 minutes, recheck). Carry extras during afternoons (14:00-22:00) and keep glucagon handy, given your hypo struggles. **Activity Log:** Note exercise times (e.g., Tuesday afternoons) and adjust insulin/carbs (reduce bolus by 20-50% or add 10-15g carbs) to prevent lows. **2. Reduce Hyperglycemia (11.0%, Morning 06:00-10:00, Midday 12:00-14:00) Tackle Dawn Phenomenon (06:00-10:00):** The morning rise (e.g., Friday 30/05, Thursday 12/06) suggests dawn phenomenon. Increase basal insulin by 5-10% between 04:00-07:00 or take a 0.5-1 unit correction bolus before breakfast if approved. Test with CGM to confirm. **Optimize Lunch Bolus (12:00-14:00):** Midday peaks (e.g., Friday 23/05, Thursday 22/05)

indicate delayed insulin or high carbs. Bolus 10-15 minutes before lunch (if safe) or use a dual-wave bolus (50% upfront, 50% over 1-2 hours) for complex meals. Log carbs (e.g., via mySugr) to adjust doses. Injection Site Check: Ensure no lipohypertrophy, as delayed absorption (e.g., Thursday 12/06 highs) could explain peaks. Rotate sites and use proper technique. 3. Minimize Glucose Variability (30% Fluctuation, 11% Rapid) Stabilize Meal Timing: The wider spreads (14:00-22:00, e.g., Thursday 12/06) suggest inconsistent meals. Eat at fixed times (e.g., 07:00, 12:00, 18:00) with 30-45g carbs, pairing with protein/fat (e.g., chicken with veggies) to reduce swings. Pump Consideration: The daily variability (e.g., Tuesday 13/05 lows, Thursday 12/06 highs) supports a hybrid closed-loop system (e.g., Control-IQ) to auto-adjust insulin. Discuss with your endocrinologist. Stress Management: Afternoon/evening fluctuations (e.g., Thursday 12/06) may reflect stress. Try a 5-minute breathing exercise at 16:00 to stabilize glucose, aiding retinopathy. 4. Protect Eye Health (Background Retinopathy) Maintain TIR and A1C: Your 83.4% TIR and 6.0% A1C are excellent. Target keeping the 90th percentile

Would you like me to search X for T1D tips on managing these specific patterns (e.g., dawn phenomenon, nighttime lows), or focus on a day (e.g., Thursday highs)? Share meal/exercise details for further refinement.

I've attached my pump profile. Would you be able to recommend any changes given the data I've provided to you?

Thank you for sharing your insulin pump profile, which provides detailed settings including insulin-to-carb ratios (I:C), insulin sensitivity factors (ISF), basal rates, carb absorption rate, and target blood glucose (BG) ranges. Combined with your glucose distribution chart (A1C 6.0%, TIR 83.4%, 5.6% low, 11.0% high), AGP, daily traces, and context (type 1 diabetes, background retinopathy, hypo struggles), I can offer tailored recommendations. These suggestions are based on identifying patterns (e.g., nighttime lows, morning/midday highs) and should be reviewed with your endocrinologist or healthcare team before implementation, as pump adjustments require professional oversight.

Analysis of Pump Profile and Data Insulin-to-Carb Ratio (I:C): Fixed at 22.5:1 across all times, which seems high given your 11.0% high time. This may underdose insulin for meals, contributing to midday (12:00-14:00) and morning (06:00-10:00) peaks seen in your AGP and traces. Insulin Sensitivity Factor (ISF): Varies from 6.8 to 17.5 mmol/L (122-315 mg/dL) per unit, with higher sensitivity (lower ISF) overnight (00:00-04:00) and lower sensitivity (higher ISF) later. This aligns with your 5.6% low time but may not fully address morning rises or afternoon variability. Basal Rates: Range from 0.25 to 0.38 U/h, with a dip at 05:00-07:00 (0.525 U/h) and a peak at 21:00-23:00 (0.35 U/h). The nighttime dip (02:00-06:00) correlates with lows in your AGP/traces, while the morning increase may not fully counter dawn phenomenon. Carb Absorption Rate: Set at 20 g/hour, which is reasonable but may need adjustment for high-fat meals contributing to midday highs. Target BG Range: 4.5-6 mmol/L (81-108 mg/dL) for most times, tightening to 5-5.5 mmol/L (90-99 mg/dL) at 07:00-21:00. This is aggressive and may contribute to hypos, especially given your 5.6% low time. Timezone: Europe/London (BST, 09:33 AM today, June 13, 2025), aligning with your data period (May 13 - June 12, 2025). Recommendations 1. Adjust Insulin-to-Carb Ratio (I:C) Current: 22.5:1 all day. Issue: The consistent 11.0% high time (AGP peaks at 08:00-10:00, 12:00-14:00) suggests underdosing for meals. A lower I:C ratio (more insulin per carb) may help. Recommendation: 06:00-10:00: Reduce to 20:1 to address morning rise (e.g., dawn phenomenon). 12:00-14:00: Reduce to 18:1 to manage midday peaks (e.g., lunch spikes on Fridays). Other Times: Keep 22.5:1 but monitor. Test with CGM and adjust based on post-meal trends (target

Would you like me to search X for T1D pump adjustment tips, or focus on a specific time (e.g., nighttime lows)? Share meal/exercise details for further refinement.