

Tips to help you increase your Time in Range

Did you know, if you're living with diabetes, increasing the time you spend in your target blood sugar (glucose) range may help to reduce your risk of diabetes-related health complications?¹⁻⁶ What's more, it could also improve your mood and energy levels.⁷ So, the more time each day your blood sugar is in target range, the better.

If you're aiming to spend more Time in Range you can try the following helpful tips.



1. Get to know your Time in Range

Your Ambulatory Glucose Profile (AGP) report shows the data measured by your continuous glucose monitoring (CGM) device. To determine your Time in Range, you'll need at least 14 days of this blood glucose data. When you have enough data to get a good picture of your Time in Range, it is recommended that most people with type 1 or type 2 diabetes should aim for:^{8,9}

- At least 70% of the day (around 17 hours) with their sugar levels between 70 to 180 mg/dL (3.9 to 10 mmol/L)
- Less than 4% of the day (around 1 hour) with their sugar levels below 70 mg/dL (3.9 mmol/L)
- Less than 25% of the day (around 6 hours) with their sugar levels above 180 mg/dL (10 mmol/L)



2. Reduce post-meal spikes

To increase your Time in Range, it's best to keep an eye on your CGM glucose data after meals. If you're taking insulin a pre-meal dose can be important, and taking this 15-20 minutes before eating is one of the most effective ways to stay in range.¹⁰ To reduce post-meal spikes, try to replace foods that are high in processed starch and sugar, such as white bread, pasta and rice, with foods that are loaded with fibre and complex sugars, such as wholemeal bread, wholegrain rice and wholegrain pasta.¹¹



3. And if that spike isn't coming back down...

If your blood sugar is stubbornly staying above your target range, aerobic exercise such as jogging, cycling or swimming could help. A brisk 20-minute walk half an hour after a meal has been shown to be effective for lowering post-meal spikes.¹²



4. Take action when you go too low

It's just as important to act when your blood sugar drops below 70 mg/dL (3.9 mmol/L).¹³ If this happens, try the '15-15 rule' and consume 15 grams of simple or fast carbs in a snack, or a glucose tablet, wait 15 minutes then check your CGM.¹⁴ The 15/15 rule is a quick and balanced way to increase your blood sugar levels.¹⁴



5. Think before you reach for the carbs

When your blood sugar dips, it's tempting to grab whatever food is at hand to avoid going into hypoglycaemia (below 70 mg/dL [3.9 mmol/L]), but the type of carb you eat is important.^{11,13} Fruit, vegetables and wholegrain snacks will help get your glucose levels gently back in range.¹¹ Fast-acting carbs are needed, however, if your blood sugar goes very low.¹³



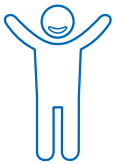
6. Learn from your good days...

On the days you succeed in spending lots of time in your target range, ask yourself: 'What physical activity did I do and what did I eat on that day that caused me to spend more time in range?' 'How much exercise did I get?' Remember to record this information and try to repeat the same routine in the following days, to see if you enjoy similar success!



7. ...and learn from the bad days too

When you see less Time in Range on your AGP, ask yourself: 'What physical activity did I do and what did I eat on that day that caused me to spend more time out of range? Was I feeling stressed, or unwell?' Make a note and consider what you could do differently next time... it's good to learn to manage stress by building rest and relaxation into your routine, and techniques like breathing exercises can help.^{15,16} And take care of yourself when you're ill.¹⁵ Always be patient with yourself. You are trying your best.



8. Celebrate your successes!

Alongside diet, exercise and medication, your emotions and mood can affect your blood sugar levels.^{15, 16} While you'll have good and bad days, try to keep motivated and stay positive by celebrating your successes.

You can also reach out to your doctor or other health care professional if unsure or need further advice.

References

1. Lu J, Ma X, Zhou J, *et al.* Association of Time in Range, as Assessed by Continuous Glucose Monitoring, With Diabetic Retinopathy in Type 2 Diabetes. *Diabetes Care.* 2018;41(11):2370–2376.
2. Mayeda L, Katz R, Ahmad I, *et al.* Glucose Time in Range and Peripheral Neuropathy in Type 2 Diabetes Mellitus and Chronic Kidney Disease. *BMJ Open Diabetes Research and Care.* 2020;8(1):e000991.
3. Lu J, Ma X, Shen Y, *et al.* Time in Range Is Associated with Carotid Intima-Media Thickness in Type 2 Diabetes. *Diabetes Technol Ther.* 2020; 22(2):72–78.
4. Lu J, Wang C, Shen Y, *et al.* Time in Range in Relation to All-Cause and Cardiovascular Mortality in Patients With Type 2 Diabetes: A Prospective Cohort Study. *Diabetes Care.* 2021; 44(2):549–555.
5. Beck RW, Bergenstal RM, Riddlesworth TD, *et al.* Validation of Time in Range as an Outcome Measure for Diabetes Clinical Trials. *Diabetes Care.* 2019; 42(3): 400–405.
6. El Malahi A, Van Elsen M, Charlee S, *et al.* Relationship Between Time in Range, Glycemic Variability, HbA1c, and Complications in Adults with Type 1 Diabetes Mellitus. *JCEM* 2022; (2): e570–e581.
7. Polonsky WH, Fortmann AL. The Influence of Time in Range on Daily Mood in Adults with Type 1 Diabetes. *J Diabetes Complications.* 2020;34(12):107746
8. Battelino T, Danne T, Bergenstal RM, *et al.* Clinical Targets for Continuous Glucose Monitoring Data Interpretation: Recommendations from the International Consensus on Time in Range. *Diabetes Care.* 2019;42(8):1593–1603.
9. Danne T, Nimri R, Battelino T, *et al.* International Consensus on Use of Continuous Glucose Monitoring. *Diabetes Care.* 2017;40:1631–1640.
10. Slattery D, Amiel SA, Choudhary P. Optimal prandial timing of bolus insulin in diabetes management: a review. *Diabetic Med.* 2018; 35(3): 306–316.
11. Harvard T. H. Chan School of Public Health. Carbohydrates and Blood Sugar. Available from: <https://www.hsph.harvard.edu/nutritionsource/carbohydrates/carbohydrates-and-blood-sugar/> [Accessed January 2023].
12. Chacko E. Exercising Tactically for Taming Postmeal Glucose Surges. *Scientifica (Cairo).* Volume 2016: 4045717.
13. NHS. Low Blood Sugar (Hypoglycaemia). 2020. Available from: <https://www.nhs.uk/conditions/low-blood-sugar-hypoglycaemia/> [Accessed January 2023].
14. Healthline.com. What is the Rule of 15 and How Does it Work? Available at: <https://www.healthline.com/health/diabetes/rule-of-15-diabetes>. [Accessed January 2023].
15. WebMd.com. 20 Reasons for Blood Sugar Swings. Available from: <https://www.webmd.com/diabetes/ss/slideshow-blood-sugar-swings>. [Accessed January 2023].
16. Adam Brown. My morning routine for less diabetes stress and more joy. 2021. Available at: <https://diatribe.org/my-morning-routine-less-diabetesstress-and-more-joy>. [Accessed January 2023].