

The Relationship Between Diabetes & Sleep

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I'm sure most of us over 30 feel we always need more sleep and cannot catch up on the missing zzz's. My friends with diabetes and I talk a lot about the "diabetes hangover" that can occur after a night of highs or lows due to missed sleep. The role that diabetes plays in sleep and sleep plays in diabetes is still being studied across the globe. Here's a rundown of what the recent research shows.

Diabetes causes missed sleep.

I know this is obvious, but there are a lot of reasons that studies have found diabetes causes missed sleep:

1. Needing to treat a high or low blood sugar.
 - a. Highs can cause an increase in thirst and urination overnight.
 - b. Lows can cause sweating and/or shaking.
 - c. Both cause alerts on diabetes technology if wearing devices.
2. The recent diagnosis of T1D in kids causes missed sleep by caregivers/parents. This likely also applies to significant others of adults with T1D.
3. Fear of hypoglycemia or worry about diabetes impacts the sleep of adults with T1D, caregivers of youth with T1D, and youth with T1D.
4. Alerts and alarms from diabetes technologies – which are important, but some are false alarms such as compression lows.

Poor sleep quality is associated with less TIR (Time in Range)

Sleep quality is related to amount, but only part of the picture. Interruptions in sleep, such as needing to treat an overnight low or high, decrease the amount of deep sleep a person experiences. The lack of sleep quality in people with type 1 diabetes is associated with reduced time in range, higher HbA1c, and more glycemic variability. The relationship between sleep and glycemic variability is interdependent, which means, if your blood sugars are more variable, you may lose sleep amount or quality, and vice versa. Lack of sufficient and quality sleep is also linked to increased insulin resistance.

Automated Insulin Delivery (AID) can improve sleep

With the development of widely available AID systems, many people with diabetes and their loved ones are enjoying much-needed sleep improvement. In addition to helping keep glucose levels in range, the systems can also reduce fear of hypoglycemia and increase peace of mind, allowing for more sleep. This is only true if the system is not alerting overnight and causing sleep disruption, which can happen for various reasons, including if the infusion set goes bad. Overall, using an AID has helped me sleep most nights.

This topic became of interest to me after I noticed an interesting pattern of lows after daytime naps. It got me thinking about why a nap would lower my glucose levels. It's not like I'm exercising; why would there be a significant drop almost every time I nap? My theory is that my body is sleep deprived, and when it obtains the rest it needs, my blood sugars may go down due to the body reaching a healthier state. The research shows that sufficient sleep can reduce insulin resistance, so perhaps that's what's happening.

After reading all the studies discussed here, I plan to work on improving my sleep hygiene.

References:

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2. [The Impact of Fear of Hypoglycaemia on Sleep in Adolescents with Type I Diabetes](#)
3. ['I don't sleep through the night': Qualitative study of sleep in type 1 diabetes](#)
4. [Sleep quality and glycaemic variability in a real-life setting in adults with type 1 diabetes](#)
5. [Variations in Sleep Characteristics and Glucose Regulation in Young Adults With Type 1 Diabetes](#)
6. [Sleep and glycemia in youth with Type 1 diabetes](#)
7. [Evaluating the influence of sleep quality and quantity on glycemic control in adults with type 1 diabetes](#)
8. [Prolonged Use of an Automated Insulin Delivery System Improves Sleep in Long-Standing Type 1 Diabetes Complicated by Impaired Awareness of Hypoglycemia](#)
9. [Lived Experience of Fully Closed-Loop Insulin Delivery in Adults with Type 1 Diabetes](#)