Understanding the Effects of Sleep on Blood Glucose Levels

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Type 1 Diabetes and Sleep

When it comes to managing type 1 diabetes, we are often told to focus on two areas of our lifestyle — nutrition and exercise. While those are undoubtedly extremely important when it comes to taking control of type 1 diabetes, they rely on proper rest to fully be effective. When a person living with type 1 diabetes doesn't get enough sleep, the next day will present many unexpected blood glucose issues. The body is not able to use insulin as efficiently or metabolize food as quickly when it hasn't had enough rest. Among those issues, there are many other physical repercussions the body of a T1D has to deal with in regards to sleep. Read on to learn more about how to tackle the effects of lack of sleep, the dawn phenomenon as well as the feet to floor phenomenon!

Lack of Sleep

As mentioned above, when someone living with type 1 diabetes doesn't get enough sleep, the next day, their blood glucose levels will be affected. Overall, their levels will be higher than normal because the body is not able to use insulin as efficiently as when the body has had a proper rest; therefore, lack of sleep equals insulin resistance.

This means that one will have to approach the day after a bad sleep with the same approach as when they are insulin resistant for another reason; for example, consumption of lots of fatty foods or traveling. One method may be to increase the basal rate (the low rate of continuous insulin being delivered throughout the day regardless of food intake) during the day by 5 to 30%. However, always check with your healthcare provider before making any adjustments to your dosages. I suggest always starting at the lowest increase to avoid low glucose levels. As well as overall insulin being affected, when it comes to meals, there is a much greater chance they will cause bigger, more prolonged elevated blood glucose levels. It's important to take notes and recognize the patterns occurring when this happens. It's possible one may need to take more insulin for meals or pre-bolus earlier on the days following fewer sleep hours.

Dawn Phenomenon

Dawn phenomenon is the effect that happens in the first one to two hours upon waking up. It causes elevated blood sugars during those times; because the rest of our organs and hormones are getting ready for the day, the body is allocating less energy to properly use insulin. It has nothing to do with food and will start to take effect regardless of whether anything has been eaten.

For me personally, I've noticed my blood sugar will start to rise 10 to 20 minutes after waking up and be elevated for two hours if I don't do something about it! Again, it's a good idea to track patterns and take the appropriate measures for your body. I personally increase my basal rate in the morning and stick to a breakfast that is lower in carbohydrates. If a low carb breakfast isn't appealing to you, I suggest keeping your breakfasts consistent in their carb count. This will eliminate any extra variations to blood glucose levels. When it comes to managing the dawn phenomenon, tracking patterns and consistent breakfasts are key!

Feet to Floor

Feet to floor phenomenon is something that happens immediately upon waking up. It is a sudden spike in blood glucose level that doesn't last very long. The thing about feet to floor phenomenon is that it isn't consistent and can be hard to plan for. By the time you've noticed it happening, there isn't any point in increasing basal rate (since that will affect levels 20 minutes later). Therefore, it is good to administer a tiny bit of insulin and move on. I personally only experience feet to floor when I wake up abruptly and earlier than normal. It's good to note that the feet to floor phenomenon is something that will only be noticed if one is wearing a continuous glucose monitor (this will allow you to follow your glucose graph). If not, most of the time feet to floor will occur without you knowing.

Naps

Both the dawn phenomenon as well as feet to floor can happen when waking up from a nap. It is definitely less predictable, but something to be aware of if you are someone who naps consistently. Naps can be extremely helpful in increasing insulin sensitivity if your lifestyle doesn't allow for regular full nights of sleep.

Unquestionably, sleep effects how someone living with type 1 diabetes manages their blood glucose levels. It is very important to get consistent, deep and long enough sleeps. The implications of good sleep hygiene are so valuable and make managing T1D much easier.

Whether it is lack of sleep, naps, the dawn phenomenon or the feet to floor phenomenon, it's always a great idea to keep track of patterns, talk to your healthcare professionals and adjust doses of insulin accordingly. Waking up is meant to be a rejuvenating, blissful experience; even though T1D can rid us of this sometimes, we owe it to ourselves to try and maintain the beauty of peaceful mornings. Sleep well!