

Hunger – It’s a Human Experience!

A closer look at how diabetics and non-diabetics get hungry

By Eliot LeBow LCSW, CDE

Previously I’ve written about how the body tricks the mind, causing diabetics to binge eat. So, I posed the question most people get asked all the time by others to myself, “Are you hungry?” In this article we will explore whether diabetics get hungry like everyone else. Do high blood sugars impact one’s ability to get hungry? If your blood sugars stay consistent at a normal level, will you be able to get hungry?

“Are you hungry?” There are several things that trigger one’s hunger. Hunger is actually broken down into several areas of the human experience including biochemical, biological, emotional, and cognitive functioning. Our focus is on why diabetics partly lack the ability to feel hungry (to desire or crave food), like everyone else.

What is everyone else’s experiences with hunger like? For most people, one’s stomach empties out and blood glucose reduces. This starts the process of hunger. What’s interesting is that this is the same for the diabetic and non-diabetic person. This process falls under the biological, emotional and cognitive areas of being human.

So, let’s look at ways diabetes doesn’t impact the ways humans get hungry. Some of the biological causes of hunger are not impacted by diabetes. Multiple studies have pointed to how our senses and emotions can cause a biological response to various stimuli (like seeing a piece of Junior’s cheesecake in Brooklyn, NY, or a cupcake in the window of your favorite bakery where the delicious smells of fresh baked goods waft out the door) triggering hunger.

Seeing a piece of cake, tasting a spoonful of someone’s ice cream (Ben & Jerry’s Cherry Garcia for me, please), touching cookie dough while baking, smelling those same cookies baking in the oven, and last but not least, hearing the ice cream man’s truck come down the road – all of these common experiences have the potential to trigger hunger in us as humans, whether we are hungry or not and whether we are a diabetic or not.

For the health conscious: Seeing a big bowl of strawberries on the kitchen table, tasting a spoonful of really good homemade vegetable soup, smelling fresh bread baking, touching a warm piece of bread right out of the oven, hearing the table being set for dinner in the other room...these stimulate hunger in the healthiest of people too. Perhaps I’ve shown you one or two of the ways your own senses trigger hunger with these examples.

Seeing, tasting, touching, smelling, and even certain sounds can cause hunger which can be seen in Pavlov’s well-known dog experiment dating all the way back to 1927. In the end result of the experiment, a bell was sounded and the dog salivated when hearing it in the same way the dog

had salivated to an unconditional stimuli such as meat powder or a steak. When any animal sees a food they love, they tend to crave it. They salivate. They drool. Whether you notice or not, even you salivate when you see a food you like, which signifies a biological craving for food. Our senses play a substantial role in how we get hungry beyond low blood sugars.

Emotions like anxiety, sadness, depression, loneliness, and boredom have been shown to trigger hunger. For example, as you are studying for a test to get into college over the weekend, your stress levels rise from heightened anxiety. After you finish studying, you realize that you ate yourself out of house and home while studying. Eating has been shown to produce dopamine, the natural happy juice of the brain causing people to eat when they feel emotional.

When emotions run high, eating patterns can go awry to satisfy feelings of anxiety, sadness, depression, loneliness and others. We've all been there. We've all done it. Research has shown that one's emotions can trigger the production of ghrelin causing hunger. As a matter of fact, there appears to be a direct link to increased anxiety and the production of ghrelin in the body.

Here is a cognitive/emotional example: after a large meal, your boy/girlfriend breaks up with you. On your way home, you pick up a pint of ice cream to drown your sorrows. This last scenario exemplifies cognitive reasons for eating because one could point out that the person knew ahead of time that eating would make her or him feel better. However, the person in this example is also emotionally taxed, causing ghrelin to be produced. Remember: gherlin is the hormone that triggers the brain to produce neuropeptides that causes the sensation of hunger.

The regulation of hunger is dependent on which hormone is predominant in the body, leptin or ghrelin. The biological piece is the releasing and the balancing of these two hormones. After a few hours without eating, the levels of leptin drop enough causing blood sugars to drop. The stomach reacts by releasing the hormone ghrelin that once again tells the hypothalamus to release neuropeptides. How many neuropeptides get released dictates on how hungry you'll become.

Normally, when the stomach runs out of food for a person without diabetes, blood sugar levels drop which triggers the hormone called ghrelin to be produced. The stomach releases ghrelin to communicate the message to the brain that it is time to eat. At that point the hypothalamus section of the brain releases these neuropeptides. They are a group of compounds that work as neurotransmitters, which are short-chain polypeptides, which trigger hunger. This part of the hunger experience is a type of biochemical reaction that allows a person to desire or crave for food.

When we have eaten enough, our fat tissues release a hormone called leptin (a protein hormone) that plays a substantial role in informing the hypothalamus that it is time to stop eating. This causes the hypothalamus to release proopiomelanocortin, another hormone which suppresses appetite.

When the stomach runs out of food in a diabetic, the diabetic's blood sugar levels won't drop which stops the stomach from triggering of the hormone called ghrelin. This halts the message to the brain that it is time to eat. The hypothalamus section of the brain never releases the neuropeptides needed to trigger hunger.

When normal to high blood glucose levels occur, the biochemical process for hunger gets interrupted. Normal, shifting and high blood sugars can hinder the release of ghrelin causing problems with getting hungry when one's stomach is empty. However, the biological, emotional and cognitive functioning parts of hunger offset this problem.

So far we've discussed the biological, emotional and biochemical causes of hunger. The last piece of how we get hungry is the cognitive aspect or how our mind thinks and structures eating.

Our minds like structure. This causes some people to get up at the same time each day, eat at the same times of the day, and other acts or events that form a routine they perform daily. Cognitively over time, our mind forms what is called a script that informs our body of what to do and at what time to do it.

Scripts are part of our memory system that create a sequenced set of behaviors. It tells us to look for a sign that says, "Wait and you will be seated shortly," or something like that when entering a restaurant. We don't actually say to ourselves, "Look for a sign." We just do it.

For example: It's time to go to work. Here is the script: you make sure your keys are in your pocket and that the house door is locked. You close the door behind you then walk to your car. When you arrive at your car door, you use the key to enter the car. Then you buckle up your seat belt, stick the key in the ignition, turn the key, and listen for the car to start. You then put the car into reverse with your foot on the brake while looking through the rear view mirror. Slowly, you release the brake, turning the wheel to the right as the car backs out the driveway. Once in the street, you put the car into drive or first gear and press on the gas. Then off to work you go. This is less detailed than what your brain really thinks about while running that script every morning when you leave. I could write even more details into the script but I am giving you, my readers, a break.

We do the same thing throughout the day. Your body may actually get hungry at 6 PM, if you tend to eat at that time every day regardless if you just ate a foot-long hero at 4 PM. Your stomach may not be empty, but your body may be thinking, "It's 6 PM. It's time to eat."

Think about this and try it: just think about eating a food you love. Even the thought of it can make you feel hungry. The human mind is that powerful!

Conclusion

Hunger can come from many sources. It is not always brought about by low blood sugars that trigger the biochemical reactions that cause hunger. In diabetics and others, high blood sugars can hinder the release of ghrelin causing problems with getting hungry when one's stomach is empty. However, the biological, emotional and cognitive functioning parts of hunger offset the problems caused by reduced biochemical reaction caused by blood sugar issues.

Biologically, if a diabetic senses a food they like, they will get hungry even if their blood sugar is high. Cognitively, a diabetic can get hungry just by thinking about their favorite ice cream that is sitting in the freezer—even when blood sugars are high.

Emotions like anxiety, sadness, depression, loneliness, and boredom have been shown to trigger hunger. A diabetic with a strict schedule during the day will get hungry at the same times each day, thanks to the scripts offered forth by the brain. These hunger triggers may not be as intense as when blood sugars drop below normal but it is hunger nevertheless that makes a person want to eat.

Overall it's not the end of the world if our blood sugars as diabetics impact one part of the many systems that can cause hunger. We may not get hungry like an average human but we do get hungry. After all, we won't starve. And who wants to be average anyway? So boring and blasé....

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For More Info: www.diabetictalks.com

Medical Disclaimer:

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