mystery science

Grades K-5
Mini-Lesson: “Why do you feel sleepy after a big meal?”

VIDEO TRANSCRIPT

VIDEO 1

Hey, it's Jay. When I was a kid, my family got a lot of people together on Thanksgiving. My family, our cousins, aunts, uncles, and our close family friends would fill up the kitchen with so many different foods. My dad would fry a turkey, my aunt sometimes made her famous pumpkin bread, other people brought rice and beans, corn dishes, lots of sweet potatoes, mashed potatoes, pumpkin pie, pecan pie, lots of different bread rolls, and more and more. I'd fill up my plate with a little of everything to find out what I like the most. Then I think, well, I gotta finish this plate so I can get more of my favorites. By the end of the meal, I ate a lot of food. I was full and really, really sleepy.

Someone named Lucy has a question about this feeling. Let's call Lucy now.

[Video Call]

- Hi, Jay!
- Hi, Lucy!
- I have a question for you. Why do I always feel sleepy after a big meal?
- That's a great question.

Maybe you've felt this yourself. This happens to lots of people. Doctors call it postprandial somnolence. I call it a food coma. So what do you think it is? What about eating a big meal might make you sleepy?

VIDEO 2

There might not be one clear reason why a big meal might make you want to take a nap. Bodies are complicated. But scientists think there are three big factors. How much you eat, what you eat, and when you eat.

Let's take a closer look. How about we start with how much we eat. When you feast, your body has a big job to do. It has to process or digest all the food you've put in it. Many different parts of your body are involved in that. From your stomach, to your intestines, to other organs you might not think or even know about… like your pancreas, your gallbladder, or your liver. The more food you eat at once, the more all those body parts have to do to break down that food. That could be why you feel sleepy.

When it comes to what you eat, the science here is more complicated, but a few different things may have an impact. One idea is fairly straightforward. Some types of food are just harder for your body to digest than others. When your body is working harder to break food down, you may get sleepier. Sugar may be another factor. This includes obviously sweet stuff like pecan pie, but also less obvious stuff like bread rolls and mashed potatoes.

You might have heard someone say that having a bunch of sugar can make you hyper, meaning zany energetic. But that's not actually how it works. When the amount of sugar in your body

dramatically changes, you can actually feel sleepy. So eating a lot of sugar might contribute to that food coma feeling.

Now you may have heard about a chemical in turkey that's supposed to make you sleepy called tryptophan. But there's more to the story here too. It is true that when your body absorbs large amounts of pure tryptophan, that can make you sleepy. And turkey does naturally contain tryptophan. But turkey contains lots of other chemicals naturally too. And because your body digests all those chemicals together, the tryptophan in turkey is not likely to make you sleepy. And get this, chicken and cheddar cheese both have more tryptophan per slice than turkey. But we don't think of those foods as magically sleep inducing.

Lastly, let's think about when you eat. Your body has natural cycles of being awake and being sleepy. This is what makes you feel tired at night and wake up in the morning.Now this is lesser known but you also have a dip in energy after midday. When you were little, this might be around when you took a nap. Some cultures have rest times in midday even for adults.

So if you feel tired after lunch or dinner, it could just be that in the afternoon and late evening, the timing is right for your body to rest. So in summary, you might feel sleepy after a big meal because of how much you eat, what you eat, and when you eat. If you eat a lot of food at once, your body has to work hard to digest it. That can make you sleepy. Eating certain kinds of food may also make you sleepier. But that mostly applies to foods that are hard to digest or super sugary, not tryptophan in turkey.

Afternoon is also a time when our bodies naturally feel a dip in energy. So after lunch might be just the right time for our bodies to want to nap. So if you feel sleepy after a big meal, there's lots of reasons that could be. And most of them are really normal and common.

So enjoy your food and let your body do its work. That's all for this week's question. Thanks for asking, Lucy.

We put together some amazing visuals that we'd love to show you. Take a look inside. Or if you don't have time, you can skip straight to voting.