How to Maximize the Cephalic Phase of Digestion to Lose Weight Transcript

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Cephalic Phase and Diet-Induced Thermogenesis

"How to Maximize the Cephalic Phase of Digestion to Lose Weight" In my last video, I talked about the "cephalic phase" of digestion before food even hits our stomach, thanks in part to nerves traveling back and forth between your brain and your mouth that help regulate the amount of food we eat, the energy in half of the energy balance equation, but it also plays a role in energy out.

The cephalic phase response plays a role in what's called diet-induced thermogenesis, the calories your body burns just to process the food you eat. As soon as food hits your mouth, your brain starts priming the pump.

It costs the body roughly 10% of the calories you eat to get at the other 90%. So, that could add up to hundreds of calories a day, and about half of those calories are all due to contact between food and the inside of your mouth.

We know this because if people are tube fed, diet-induced thermogenesis gets cut in half or even more.

Slowing Down to Increase Oral Exposure

Half of just 10% of your calories you eat may not sound like a lot, but it could add up to thousands of calories a month. What are the practical implications, though?

You can increase oral exposure time by slowing down at mealtime. If you have people eat especially fast (consuming in 5 minutes what would normally take them 15), diet-induced thermogenesis gets cut nearly a third within 15 minutes.

So, you don't get to take full advantage of the effect for weight loss. Whereas, having people slow down by chewing each bite "until no lumps remain" significantly boosted thermogenesis, compared to a rapid eating group.

But was it the act of chewing itself, or the just the extra time the food was present in the mouth? You don't know until you put it to the test. A research group in the Netherlands came up with an elegant solution.

They had people effectively take a teaspoon of tomato soup every five seconds, or a tablespoonful every 15 seconds, until they were full.

Testing Bite Size and Mouth Time

Because a tablespoon is three times bigger than a teaspoon, the eating rate was exactly the same– a quarter cup per minute. Note, though, the oral exposure time was completely different.

Even though the tablespoon of soup lasted slightly longer in the mouth, because the tablespoon group was getting about four spoonfuls a minute, the total oral exposure time every minute was only half that of the teaspoon group– 12 seconds versus 24 seconds.

So, same eating rate, but the soup was only in the mouths of the tablespoon group a fifth of the time and in the mouths of the teaspoon group nearly half the time.

So, who do you think ended up eating more soup? If chewing was the critical factor, then both groups would presumably eat the same amount of soup, creamy tomato in this case, since there was no chewing in either group.

Similarly, since their stomachs were all filling at the same rate, if it was just the length of the meal, then both groups would get full right around the same time.

Smaller Bites for Better Fullness Signals

But if instead it was all the amount of time food is physically in your mouth, then the teaspoon group would get full faster and end up eating significantly less, and that's exactly what happened.

The teaspoon group had enough after about four minutes, but the tablespoon group ate closer to six minutes, ending up consuming a third more soup. It makes sense that taking larger bites and sips would lead to greater consumption, because you're simply eating faster, but this line of research suggests it's more than that.

Eating and drinking larger mouthfuls is bad for fullness signals. Thanks to the cephalic phase response, your brain gets more food-in-residence signals from your mouth.

So, taking smaller bites and drinking thicker smoothies through a narrower straw may help you feel fuller faster.