

Does Eating Turkey Make You Sleepy?

Tryptophan & Carbohydrate Chemistry

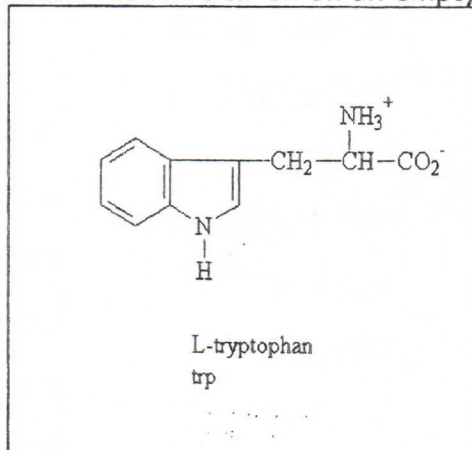
<http://chemistry.about.com/library/weekly/aa110402a.htm>

Unless a microwave dinner is your idea of a Thanksgiving feast, you probably have had firsthand experience with the after-dinner fatigue that sets in after the meal. Why do you want a nap? To escape the dishes? Perhaps, but the meal itself plays a big part in the way you feel.

- **L-Tryptophan and the Turkey**

The turkey is often cited as the culprit in afterdinner lethargy, but the truth is that you could omit the bird altogether and still feel the effects of the feast. Turkey does contain L-tryptophan, an essential amino acid with a documented sleep inducing effect. L-tryptophan is used in the body to produce the B-vitamin, niacin. Niacin, in turn, is used to produce serotonin, a neurotransmitter that exerts a calming effect and regulates sleep. However, L-tryptophan needs to be taken on an empty stomach and without any other amino acids or protein in order to make you drowsy. There's lots of protein in a serving of turkey and it's probably not the only food on the table.

It's worth noting that other foods contain as much or more tryptophan than turkey (0.333 g of tryptophan per 100 gram edible portion), including chicken (0.292 g of tryptophan per 100 gram edible portion), pork, and cheese. As with turkey, other amino acids are present in these foods besides tryptophan, so they don't make you sleepy.



- **L-Tryptophan and Carbohydrates**

L-tryptophan may be found in turkey and other dietary proteins, but it's actually a carbohydrate-rich (as opposed to protein-rich) meal that increases the level of this amino acid in the brain and leads to serotonin synthesis. Carbohydrates stimulate the pancreas to secrete insulin. When this occurs, some amino acids that compete with tryptophan leave the bloodstream and enter muscle cells. This causes an increase in the relative concentration of tryptophan in the bloodstream. Serotonin is synthesized and you feel that familiar sleepy feeling.

- **Fats**

Fats slow down the digestive system, giving Thanksgiving dinner plenty of time to take effect. Fats also take a lot of energy to digest, so the body will redirect blood to your digestive system to tackle the job. Since you have less bloodflow elsewhere, you will feel less energetic after eating a meal rich in fats.

- **Alcohol**

Alcohol is a central nervous system depressant. If alcoholic beverages are part of the holiday celebration, then they will add to the nap-factor.

- **Overeating**

It takes a great deal of energy to digest a large meal. When your stomach is full, blood is directed away from other organ systems, including your nervous system. The result? You will feel the need to snooze after any big meal, particularly if it is high in fats and carbohydrates.

- **Relaxation**

Although many people find the holidays stressful, the most relaxing part of the festivities is likely to be the meal. No matter what you may have been doing throughout the day, Thanksgiving dinner provides an opportunity to sit back and relax - a feeling that can carry over after the meal.

So, why are you sleepy after a big turkey dinner? It's a combination of the type of food, amount of food, and celebratory atmosphere. Happy Thanksgiving!

Thanksgiving

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Unscramble each of the clue words.

Take the letters that appear in boxes and unscramble them for the final message.