

Q&A: Why do we love carbs so much? The food science behind our favorites

October 24 2023



Credit: CC0 Public Domain

October may be best known for seasonal treats such as pumpkin spice lattes and Halloween candy, but with national months celebrating pizza, pasta and pretzels laying claim to the season, the month can be a carb

lover's dream.

This love can send people on quests for where to grab the best slice of pizza around Cleveland and spark debates over which restaurant's appetizer menu serves up the best soft pretzel. Or, it can prompt people to question if a [gluten-free diet](#) would be more beneficial for their health—a question made murkier without a proper understanding of how foods are physiologically processed.

To gain a better idea of what carbs really are and how they function, The Daily sat down with Hope Barkoukis, chair of Case Western Reserve University's Department of Nutrition. Read on to learn Barkoukis' insights on why some people love carbs so much.

Answers have been lightly edited.

1. How do carbohydrates function?

Carbohydrates are found in a wide range of [food sources](#), from fruits and vegetables to grains, beans, candy, and the like. They all provide the same amount of [energy](#) per unit, regardless of their food sources.

Carbohydrates have many important functions, with providing energy being one of the most important. They also store energy for use at later times, act as building blocks for other important compounds, and serve a process of "sparing proteins." Sparing protein means that carbohydrates are used as an energy source so that proteins can be used to fulfill all of the roles of protein, such as building and repairing the body.

2. What is the difference between simple and complex carbs?

A source of carbohydrates that is called "complex" means that the actual source has longer chains of sugar molecules as contrasted to shorter chains of sugar molecules found in "simple" carbohydrates.

Longer sugar molecules take longer to digest than simple sugars. When a carbohydrate takes a longer time to digest, this means that a person's [blood](#) glucose stays more stable than what is observed after eating simple carbohydrates. Pastas, breads—especially whole grain ones—vegetables, and beans are all sources of complex carbohydrates. Simple carbohydrates will be very quickly absorbed, causing a rapid, higher source of energy than complex sources do.

3. How does consuming carbs impact our energy levels?

After consuming a source of carbohydrates, the body will have a source of energy available. It will depend on how active a person is as to whether the carbohydrate will be used immediately as an energy source, or stored as an energy source for later use.

As one consumes carbohydrates, they are digested and then increase our blood sugar levels. Being an energy source, carbohydrates increase energy levels. However, there are many ways that the body tries to keep a person's blood sugar in a controlled range, so, if you are eating a simple sugar, your blood sugar will quickly rise, then your body will produce insulin.

Insulin's job is to decrease your blood sugar—so simple sugar intake results in highs and lows of your blood sugar levels. Complex carbs take longer to digest, so usually you will not see such high levels of blood glucose as with simple sugars, nor will you see the peaks and the low blood sugar values—instead it's a slow blood sugar rise, and a more

lasting stability of blood sugar values.

4. People often say they're 'craving' carbs—is there a physiological basis for this? What makes carb-based foods so popular?

Carbs initiate production of a hormone called serotonin, which is associated with positive feelings. We don't fully know all of the science behind carbohydrate cravings, but some of the physiological basis for this is that carbohydrate intake will restore your blood sugar. It also could be that you are not eating enough total calories to meet your needs, so the body responds by craving a quick source of energy to decrease your feelings of 'no or low' energy, or feeling weak or tired.

There are also complex pathways, which are influenced with the consumption of carbohydrates. Carb-based foods are popular because of their taste; we have evidence to show that taste impacts which foods we prefer, and it modulates calorie intake and appetite. A "sweet" taste has been clearly established as a "driver of food intake."

5. How do different cooking and preparation methods impact the appeal of carbohydrate-rich foods? With regard to foods like pizza/pasta/pretzels, are there key components of their doughs that make them so popular?

Certain cooking techniques, such as high-heat roasting of carbohydrates, will break those long chains of sugar molecules and result in enhancing the sweetness of a carbohydrate such as with vegetables. Generally, the increased sweetness of a carb impacts our interest in consuming them, based on prior discussion above.

6. Socially speaking, it seems that carbs are more popular in certain cultures than others. Why might that be?

The role of culture in influencing food choices, food intake behavior and dietary patterns is really complex. It includes so many different factors—there are habits that are taught regarding all aspects of eating: what one eats, who cooks, how the foods are prepared, eaten, etc. The identity of any given culture generally has ['food'](#) as a main part of that culture's identity.

7. What advice would you give to individuals looking to maintain a balanced and healthy relationship with carbohydrates in their diet?

The proper amount of total carbohydrates a person should eat to maintain a healthy dietary pattern ranges from 45-60% of the diet of an adult's total daily calories. Athletes may even need a higher overall percentage of carbs than a healthy, yet non-athlete individual.

Carbs are not as simplistic as saying they are "bad" or "good," as the media would like us to believe. The choice of which carbs to eat should be based on your overall lifestyle—how physically active you are, your total energy needs, your health status (normal range blood glucose or having diabetes), etc.

Typically, some simple [sugar](#) carbs are labeled as "bad" because they contain very few if any vitamins, minerals, dietary fiber, or other macronutrients. These would include the candies, sodas, snack items such as popsicles, etc. But, there are situations where these [carbohydrate](#) sources are important energy sources, again such as with athletes. A

healthy relationship with all foods, not just carbohydrates, is to realize that the most important consideration is your overall dietary intake as a whole, not to overly focus on just one component of the diet such as carbs or protein or fats.

The total percentage of carbs consumed will depend on your lifestyle factors, as I said before, but a healthy relationship with carbs would be to enjoy a wide variety of complex carbohydrates, in their most unprocessed forms. Over restriction will not generally be sustainable for the long run and may lead to deficiencies in many vitamins and minerals and may not be sustainable over long periods of time.

Provided by Case Western Reserve University

Citation: Q&A: Why do we love carbs so much? The food science behind our favorites (2023, October 24) retrieved 29 April 2024 from <https://medicalxpress.com/news/2023-10-qa-carbs-food-science-favorites.html>

<p>This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.</p>
--