

Carbohydrates Part 1: Introduction



As part of Ricebowl Asia’s initiative as the food experts of Asia to familiarize Food Sciences and Food Regulations to the common ‘eaters’, this week (and for the following weeks in August), we will be **breaking down the science of carbohydrates** or more commonly known as ‘carbs’. **Are they evil or are they good for the body?**

There have been many if not tons of discussions and arguments regarding the most lovable, but often times hated macronutrient, the good ol’ Carbohydrates. Statements like **“Carbohydrates make you fat”** or **“Carbs are just sugar”** are giving Carbohydrates a bad rep, but do we really know what are carbohydrates and the **vital role it plays in our bodies?**

We believe that the readers and followers of Ricebowl Asia has already ‘un-friended’ carbohydrates because of its negative popularity that it contributes to obesity. Are carbs as bad as some make them out to be?

What are Carbohydrates?

There are **three main types of carbohydrate in food which are starches (also known as complex carbohydrates), sugars and fiber**. Plants are the primary source of carbohydrates, with sugar and fiber being in almost all fruits. The muscles from animals also contain some carbohydrate in the form of glycogen (Brown, 2007).

You can opt to loathe Carbohydrates but you can never outrun it. **Carbohydrates are found in pretty much everything** – fruits and vegetables, grains, nuts and seeds, dairy, sweets, soda and the list goes on. It’s a good thing too because **carbohydrates provide around half of the energy in a well-balanced diet**.

All the food we eat is made up of three major nutrients: carbohydrates, protein and fat. Carbohydrates, on a molecular level, are made up of short or long chains of carbons. **The basic building block of a carbohydrate is a simple union of carbon, hydrogen, and oxygen**. The length and shape of the carbon chain determines the type of carbohydrate.

Despite protein and fat, **carbohydrates are macronutrients that provide energy to fuel the human body** in relatively large amounts for optimum health. Carbohydrates contain 4 calories per gram (Asif et al., 2011). It contains the most glucose and gives the **quickest form of energy**. They can be broken down into glucose, a form of sugar that provide major energy source for the body. **Our nervous system needs a constant supply of carbohydrates in the form of glucose in**

order to properly function. They also play an important role in the structure and function of organs and nerve cells.

Carbohydrates are principally substrates for energy metabolism. They can **affect satiety, blood glucose & insulin levels and lipid metabolism** through fermentation (Englyst et al., 2007). The USDA recommends that **45 to 65 percent of our total daily calories come from carbohydrates** so we shouldn't be afraid of carbs as it is what fuels us.

You may also be interested in [Types of Carbohydrates](#), [Why we need Carbohydrates](#) and [Carbohydrates: How should we make quality choices of carbohydrates?](#)

References

Asif, H. M., Akram, M., Saeed, T., Khan, M. I., Akhtar, N., Rehman, R. U., Shah, S. M. A., Ahmed, K. & Shaheen, G. (2011). Carbohydrates. International Research Journal of Biochemistry and Bioinformatics, 1(1), 001-5.

Brown, A. (2007). Understanding Food: Principles and Preparation. Cengage Learning, 31-5.

Englyst, K. N., Liu, S. & Englyst, H. N. (2007). Nutritional characterization and measurement of dietary carbohydrates. European Journal of Clinical Nutrition, 61(1), S19-39.
<https://doi.org/10.1038/sj.ejcn.1602937>