

Maltodextrin

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Key Points:

- Maltodextrin is classified as a complex carbohydrate, but acts like a simple carbohydrate in the body
- Maltodextrin will not supply the long-lasting energy provided by most complex carbohydrates because of this

Maltodextrin is a synthetically manufactured long-chain carbohydrate. Also known as a polysaccharide (“many sugars”), maltodextrin is artificially created when acids or other enzymes are applied to cornstarch, which breaks the starch into medium-length chains of dextrose (also known as glucose) molecules.¹

Maltodextrin may be disguised on labels with different name; sometimes it is referred to as “glucose polymers” or “complex carbohydrate.” Simply put, maltodextrin is a very long chain of repeating glucose molecules connected together. Because of this particular structure, maltodextrin can be labeled as a complex carbohydrate, as opposed to a simple carbohydrate like glucose.²

Simple carbohydrates are typically singular or up to three sugar molecules in length. Maltodextrin can be hundreds of sugar molecules in length, much larger than the simple carbohydrate arrangement of glucose. Because of this, many beverages include maltodextrin in their formulas in order to display a lower amount of sugar on their nutrition facts label. Maltodextrin, classified as a complex carbohydrate, will be included under the “Total Carbohydrate” heading on the nutrition label, rather than under “sugars.”

This amounts to nothing more than a nutritional label trick – manufacturers that add maltodextrin to their products will claim that it contains complex carbohydrates, yet this ingredient acts like a simple carbohydrate in the body.

While complex carbohydrates such as maltodextrin can be beneficial prior to and following exercise, due to their large size, they must be altered by the body prior to direct usage in energy processes. Maltodextrin is very different from a typical complex carbohydrate because of its simplified structure of repeating dextrose units. It does not provide the long-term energy that a true complex carbohydrate does. Maltodextrin must first be enzymatically altered by the body before its benefits are realized in the form of energy.³

Naturally occurring complex carbohydrates often contain some vitamins and minerals required to assist assimilation of the carbohydrate into the body's energy processes. In one sense, nature packages them this way so the complex carbohydrates bring their own digestive and energy cofactors with them into the body.

Conversely, maltodextrin typically contains very little, if any, vitamins and minerals to assist with its own digestion and assimilation. Because of this, consuming maltodextrin may actually reduce the amount of vitamins and minerals in the body. Due to the large size of maltodextrin, it uses more vitamins and minerals than simple carbohydrates will, which can lead to a net decrease in an athlete's vitamin and mineral status over time.

Unlike other sports and energy drinks, Glukos provides the body with a simple, natural form of energy that the body recognizes inherently. The carbohydrate glucose is nothing more and nothing less than the most simplified form of energy for humans.

¹ Guzman-Maldonado, H. Paredes-Lopez, O. (1995). Amylolytic enzymes and products derived from starch: a review. *Critical Reviews in Food Science Nutrition*, 35(5), 373-403.

² Tharanathan, R. (2002). Food-derived carbohydrates--structural complexity and functional diversity. *Critical Reviews in Biotechnology*, 22(1):65-84.

³ Chronakis, I. (1998). On the molecular characteristics, compositional properties, and structural-functional mechanisms of maltodextrins: a review. *Critical Reviews in Biotechnology*, 38(7), 599-637.