

Palatinose™ – The low glycemic carbohydrate

Carbohydrates play an important part in our diet and should provide more than half of our daily energy intake, according to the World Health Organization's (WHO) recommendations. But carbohydrates are not all the same. They differ considerably in their physiological properties, i.e. in their effect on blood glucose levels and insulin release, and thus in their way how they provide energy to the body. Long-term as well, the way of energy provision plays a role within a healthy diet.

The glycemic index allows a classification of different carbohydrates

The internationally acknowledged concept of the glycemic index (GI) developed by Jenkins et al describes how carbohydrates influence blood glucose levels and the body's insulin release. It thus allows a classification of carbohydrates and carbohydrate containing foods according to their effect on the blood glucose level in high (≥ 70), medium (56 – 69) and low glycemic (≤ 55).

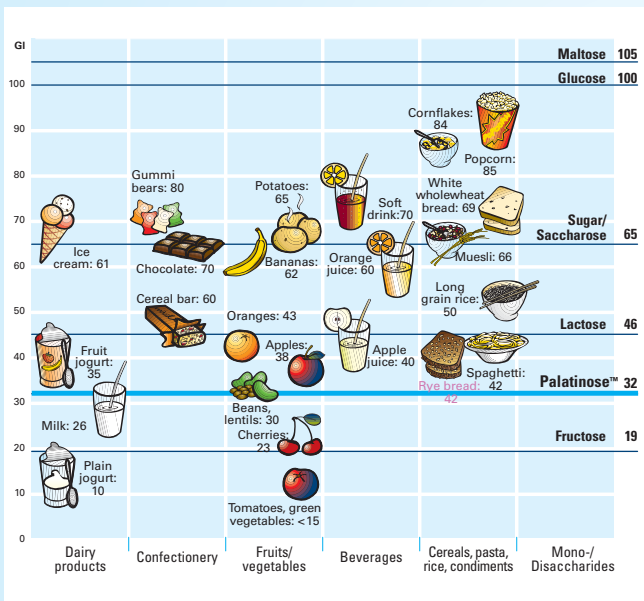


Figure 1: Glycemic index in food and beverages
(Conducted with data from the publication of Foster-Powell et al (2002) Am J Clin Nutr 76, 5-56 and Atkinson et al (2008) Diab Care 31, 2281-3)

Palatinose™ is low glycemic (GI = 32)

Palatinose™ is a fully available carbohydrate. This means that it supplies the body with the same amount of energy as other available carbohydrates (4 kcal/g). Due to the slower breakdown and absorption of Palatinose™ in the small intestine, this energy is provided with a markedly lower effect on blood glucose levels. In other words, Palatinose™ provides the energy in a more balanced way, i.e. through a slower, overall lower blood glucose response over a longer period of time compared to conventional sugars.

The glycemic index of Palatinose™ was ascertained at the Sydney University Glycemic Index Research Service (SUGiRS), one of the worldwide leading institutes in this field. It was shown, that Palatinose™ has a GI of 32 (reference: glucose with a GI of 100). Thus, Palatinose™ classifies as a low glycemic carbohydrate. The low glycemic properties of Palatinose™ were also confirmed in further studies on healthy people as well as diabetics.

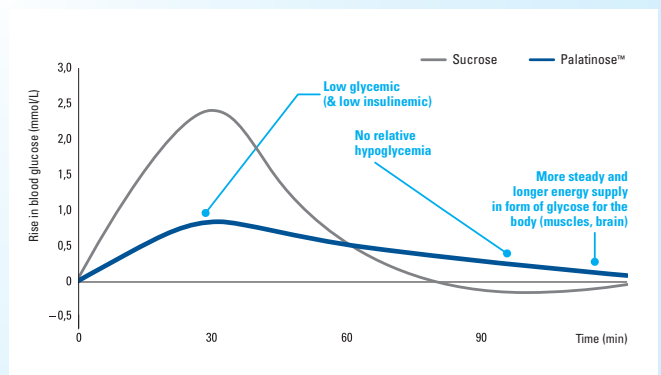


Figure 2: Palatinose® in comparison to sucrose

Benefits of a low glycemic response

With a fully available carbohydrate such as Palatinose™, a low glycemic response means a balanced supply of glucose, i.e. glucose is provided for physical and mental performance in the most gentle way. High glycemic carbohydrates, in contrast, cause the blood glucose level to increase very much in a short period of time and subsequently – due to the simultaneous high insulin release by the body – also let it drop just as steeply and quickly. Such large fluctuations in blood glucose levels can be prevented with the low glycemic carbohydrate Palatinose™. As a result, there are no major dynamics of dropping blood glucose levels to below the starting value which is said to be related to the triggering of hunger feeling. With Palatinose™, the body is more evenly provided with energy in the form of glucose and, most importantly, over a longer period of time. Moreover, the overall low effect on blood glucose and insulin release has a positive effect on the entire metabolism.

Over the past 20 years, numerous scientific publications have been dealing with the subject of a carbohydrate-based low glycemic diet and increasingly make reference to a protective effect regarding the development of diet-related health-issues. In summary, a low glycemic diet may offer the following benefits:

- **Helps people lose and control weight**
- **Reduces hunger and keep one feeling fuller for longer**
- **Increases the body's sensitivity to insulin**
- **Improves diabetes control**
- **Reduces the risk of heart disease**
- **Lowers blood cholesterol levels**

(Source: <http://www.glycemicindex.com/>)

Palatinose™ allows the manufacture of low glycemic products for all those consumers who are aware of the role of carbohydrates and who want to follow a balanced diet. It thus fits nicely into a daily diet which should obtain more than 50 percent of the energy from carbohydrates, according to WHO recommendations. The improved provision of energy is beneficial for all those interested in health and optimized mental and physical performance.

In which products can Palatinose™ be used?

Since 2005, BENE0-palatinit produces Palatinose™ for the food industry and meanwhile it is used as a functional carbohydrate in a steadily growing number of food and drinks. The taste profile of Palatinose™ is described as pure and mild, sugar-like, but less sweet and without any aftertaste. The combination of its physiological benefits with its sensory and technological properties makes Palatinose™ a unique carbohydrate with great market potential for products supporting active lifestyles that are based on healthy nutrition.

What is Palatinose™ and what makes it special?

Palatinose™ (generic name: iso-maltulose) is a carbohydrate that occurs naturally in, for example, honey. For use in larger quantities as a functional carbohydrate in food, Südzucker/BENE0-Palatinit developed a process to obtain



Palatinose™ from sugar (sucrose). The only difference between Palatinose™ and sugar lies in their bond between the glucose and the fructose units. The more stable bond of Palatinose™ is broken down more slowly by the enzymes of the gastrointestinal tract but nevertheless completely. Palatinose™, as a functional carbohydrate, combines various beneficial physiological properties that are usually attributed to carbohydrates that are less digestible (and often less well tolerated). Palatinose™ is kind to teeth. While cariogenic oral bacteria are not able to use it, however, Palatinose™ is fully available for the human organism. Its special characteristic is the slow digestion and absorption in the small intestine. As result of this, Palatinose™ has a low effect on blood sugar level and insulin. With its prolonged energy supply in the form of glucose it supports physical and mental performance and also promotes an improved fat oxidation during physical activity.

Palatinose™ is used as a functional carbohydrate, for instance, in sport and wellness drinks, sports nutrition, instant beverages, functional dairy and tea, cereal and energy bars, baked goods, beer and clinical nutrition.



Should you have any questions regarding Palatinose™, feel free to contact:

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