

The Glycaemic Properties of Polyols

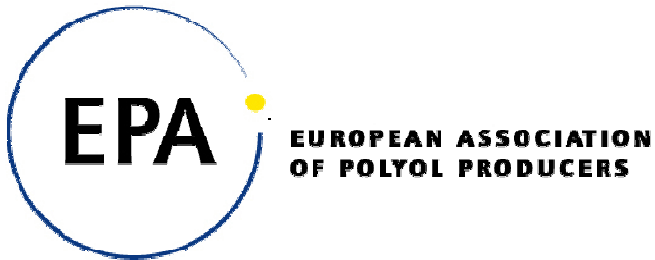
Polyols are sugar-free sweeteners that are widely used in the food industry to produce healthy alternatives to many traditional foods, usually known as 'sugar-free', 'no added sugar' or 'reduced sugar' products.

Polyols have several health advantages for consumers, including their lower calorific value when compared with sugar and the fact that they do not promote tooth decay. This fact sheet looks at an additional health benefit – the ability of polyols to help people regulate and control their blood-glucose and insulin levels, which is beneficial for everyday health and wellbeing.

Normally, when a person's blood-glucose level rises – after a meal, for example – their body produces insulin. This insulin then helps to transport the glucose into the cells of the body where it can be converted into energy. However, people with diabetes are either unable to produce enough insulin (known as type 1 diabetes) or their tissues have become resistant to insulin, making it harder for glucose to enter the body's cells for further metabolism (known as type 2 – or adult onset – diabetes, which is common in overweight people). As such, people with diabetes will have an excess of glucose in their bloodstream (known as hyperglycaemia) unless their blood sugar levels are controlled.

Other diseases, such as hyperinsulinism and pancreatic tumours, can affect blood glucose levels in a contrary way, thereby potentially causing hypoglycaemia.

Polyols are a useful tool in enabling people to control their blood-glucose and insulin levels. Research has shown that all polyols have lower glycaemic and insulinaemic values than both glucose and sucrose. This means that they can be used to help people achieve lower blood glucose and insulin levels – important for everyone, but especially for those with diabetes or hyperinsulinism.



The glycaemic index (GI) is a measure that classifies carbohydrates and foods according to their ability to raise the concentration of glucose in the blood after eating. The fact that the physical properties of polyols are so similar to sugar means it is easy for manufacturers to substitute sugar with a polyol without compromising on taste or quality, thereby producing foods with a lower glycaemic response (GR). If complete sugar replacement is not feasible, partial replacement can still have an advantage and help to lower the GR value, with even small quantities of polyols being shown to have an important impact. Similarly, polyols have a lower insulinaemic index value than either sucrose or glucose. The low glycaemic and insulinaemic values of polyols mean manufacturers can produce food products that are much healthier for consumers who would like to maintain a steady blood-sugar level.

Foods inducing a low GR generally delay the feeling of hunger. This is a useful benefit for people who are watching their weight or for people dealing with the weight management issues associated with diabetes. They are also much less likely to cause a 'sugar rush' effect than foods manufactured with glucose or sucrose.

More and more people are recognising the health benefits of a low-GR diet, which means demand for low-GR foods is growing. By replacing high-GR sugars and carbohydrates with polyols, manufacturers are able to produce food products with glycaemic values that are at least 30 per cent lower than the traditional versions, and thereby meet this growing demand.

For more information on polyols visit www.polyols-eu.com