

What fuels olympic dreams? smart sports nutrition with functional carbohydrates for sustained performance and hydration

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The Paris Olympics may be over, but the race to push their performance for the next big challenge in Los Angeles has just begun for athletes worldwide.

As viewers, we often overlook one of the most pressing concerns for organisers of summer sports events – the prevention of heat-related illnesses.

The Tokyo 2020 Olympics/Paralympics organising team, for example, [prepared educational materials](#) to help athletes manage their recoveries. Topics circled dehydration – a known heavy hitter on performance, since running low on water and electrolytes can affect flexibility, speed, endurance and even mood. Another important tracker: is blood glucose, since low levels could result in bouts of extreme exhaustion, dizziness, and affected endurance.

Bringing Your A-Game to Sports Begins with Smart Nutrition

The Olympics not only showcases peak athletic performance among sports elites but also inspires consumers to elevate their fitness routines. This surge in interest and awareness presents a significant opportunity for sports nutrition producers.

When athletes and active individuals exercise intensively for an hour or longer, managing carbohydrate fuel resources is key to keeping going and preventing glycogen depletion – the primary cause of exhaustion.

Traditional sports nutrition products are the answer to this, providing a quick energy boost via fast carbohydrates such as maltodextrin, sucrose, or glucose syrup in combination with caffeine or taurine. However, while this is fine for those in need of

a short burst of energy, such as in sprinting, endurance sports require carbohydrates that deliver a more sustained energy release. This not only minimises body strain but also supports hydration during exercise in hot conditions.

Food manufacturers can look towards alternative carbohydrates like BENEO's Palatinose® (isomaltulose): a slow-release sugar that is ideal for use in sports nutrition drinks, gels and snacks. Naturally found in honey, it is made from sucrose which is sourced from sugar beet. Palatinose® is unique in its ability to deliver a lower rise in blood glucose while delivering full carbohydrate energy (4 kcal/g). Its slow uptake results in a low and balanced blood glucose response, making it an ideal ingredient to help support blood sugar management.

Additionally, consumers will be glad to know that sports drinks produced with Palatinose® maintain a constant osmolality even in acidic and pasteurised beverages – no matter if they are isotonic, hypotonic or hypertonic. This means that the amount of solute particles of salt, minerals or protein remains stable during the complete shelf life.

Racing with The Right Hydration

Proper hydration is essential for maintaining performance during exercise and rehydration for recovery afterwards, particularly in endurance sports and hot climates.

For example, a study by a Japanese research group that focused on cycling in hot environments, such as those seen at the Japanese Olympics in 2020, has shown some interesting results. The study examined the effect of carbohydrate-electrolyte drinks containing the carbohydrates isomaltulose or sucrose and their impact on both hydration and thermoregulation. Isomaltulose was shown to maintain thermoregulation during exercise, reduce cardiovascular strain and offer a superior beverage hydration index than sugar.

Other studies also showed that sports drinks containing 6.5 per cent isomaltulose may even improve rehydration after exercise, outperforming water and high glycaemic index carbohydrates. These findings highlight the potential of isomaltulose for thermoregulation and that it has benefits for hydration during exercise and rehydration after exercise.

Catering to Everyday Athletes

The sports nutrition market isn't reserved just for professional athletes anymore. In fact, 42 per cent of consumers indicated an increased consumption of sports nutrition products compared to a year ago^[1], driven by a greater focus on health, fitness and nutrition.

However, for casual fitness users looking to tone their bodies and reduce fat, fast carb products that quickly boost energy levels can ultimately undermine their goals. By triggering sharp fluctuations in both blood glucose and insulin levels during physical activity, these carbs hinder fat-burning potential.

Whether the user is an endurance professional or hobby athlete, Palatinose® can provide relevant benefits. Providing the needed hydration while delivering sustained energy and promoting fat oxidation, sports drinks containing Palatinose® can meet the specific needs of casual fitness enthusiasts.

Additionally, Palatinose® can be a smart alternative to fitness users who prefer energy drinks. Various studies^[2] have proven the sustained energy and fat oxidation benefits of Palatinose®. US consumers who have cut back on energy drinks report that they are drinking less caffeine in general^[3]. This points to a trend in naturally functional beverages that can help them feel energised and healthy in a gentle way.

In addition to its health benefits, Palatinose® also demonstrates various technical benefits and is ideal for use in various applications such as beverages, baked goods, and snacks. It comes with a mild sweetening profile, is soluble, and has very low hygroscopicity – which allows it to absorb virtually no moisture and remain stable under harsh processing conditions, giving it the advantage over other carbohydrates for use in sports applications. Additionally, this unique sugar carries EU health claims for being tooth-friendly and providing a lower blood glucose response.

As the global focus on sports and fitness intensifies, sports nutrition producers can leverage functional ingredients to deliver products that support both elite athletes and casual sports enthusiasts in new and innovative formats. For example, BENEO's energy gummies and energy jelly contain slow-release carbohydrate Palatinose®, to provide sustained energy release. Even as the games have ended, the –Olympic factor– of Paris 2024 cannot be underestimated, shaping the future of sports nutrition for years to come.

[1] FMCG Gurus Sports Nutrition Global Q3- 2023 Base: Total Sample (n=31000)

[2] <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5409720>

[3] Mintel Insights "Energy boosts are needed in an unprecedented world," 2021