

Intra-Carb: A Convenient, Versatile, High Performance Carbohydrate Supplement

Intra-Carb as a tasty, convenient and versatile blend of three carbohydrate sources, designed to be easy on your gut, and produce a rapid, but sustained elevation of blood glucose. **Intra-Carb** is a great compliment to our **Recovery** (intra-workout) product when you want to up the ante on your peri-workout carbohydrate intake. On the other hand, if convenience or simply the ease of drinking your carbs (when really trying to pack in the calories) suits you, **Intra-Carb** can be used any time of the day to engineer both rapid and sustained entry of glucose into your blood.

The secret to **Intra-Carb's** powerful, but long-lasting, easy-on-the-gut punch comes from the synergy of the three carbohydrate sources we've combined:

- **Intra-Carb** contains **highly branched cyclic dextrin** (as 10 grams of [Cyclic Dextrin®](#)) to enhance gastric emptying¹ and minimize gastrointestinal discomfort during exercise [including burping and gas, which your training partner benefit will appreciate²]. By more rapidly ushering glucose from the stomach^{3,4} to the small intestine and blood stream⁵, [Cyclic Dextrin®](#) can improve performance⁶⁻⁸, and maintain higher glycogen levels during exercise⁹, giving you a head start on recovering for your next workout¹⁰.
- To ensure a sustained, crash-free elevation of blood glucose during your workout or whenever you've consumed **Intra-Carb**, we've also included 5 grams of **Isomaltulose** (as [Palatinose®](#)) in Intra-Carb. Palatinose is a disaccharide that produces a steady rise blood glucose, but at a baseline level much lower than even table sugar¹¹.
- Lastly, we've included a small amount of **Dextrose** (glucose), the carbohydrate source commonly used as the standard for determining glycemic index (GI)¹². [The GI of dextrose is higher than essentially all kinds of rice products, for instance¹³.] Dextrose's rapid entry into the blood stream will promote insulin release¹⁴, so including a small amount in **Intra-Carb** favors the **positive balance** of skeletal muscle protein synthesis and breakdown we all seek, as long as you've been diligent enough to consume protein with your carbs^{15,16}.

There you have it – a simple, but powerful formula! **Intra-Carb** combines the rapid actions of Dextrose with the smooth and sustained entry of glucose from of [Cyclic Dextrin®](#) and [Palatinose®](#), respectively, to give you the benefits and versatility of both slow and fast carbohydrates, all in one product.

Disclaimer: These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease.

REFERENCES

1. Takii H, Takii Nagao Y, Kometani T, et al. Fluids containing a highly branched cyclic dextrin influence the gastric emptying rate. *Int J Sports Med*. 2005;26(4):314-319.
2. Takii H, Kometani T, Nishimura T, Kuriki T, Fushiki T. A Sports Drink Based on Highly Branched Cyclic Dextrin Generates Few Gastrointestinal Disorders in Untrained Men during Bicycle Exercise. *Food Science and Technology Research*. 2004;10(4):428-431.
3. Kim C, Okabe T, Sakurai M, et al. Gastric emptying of a carbohydrate-electrolyte solution in healthy volunteers depends on osmotically active particles. *Journal of Nippon Medical School = Nippon Ika Daigaku zasshi*. 2013;80(5):342-349.
4. Nakamura M, Uchida K, Akahane M, Watanabe Y, Ohtomo K, Yamada Y. The effects on gastric emptying and carbohydrate loading of an oral nutritional supplement and an oral rehydration solution: a crossover study with magnetic resonance imaging. *Anesthesia and analgesia*. 2014;118(6):1268-1273.
5. Jeukendrup AE. Carbohydrate and exercise performance: the role of multiple transportable carbohydrates. *Curr Opin Clin Nutr Metab Care*. 2010;13(4):452-457.
6. Takii H, Ishihara K, Kometani T, Okada S, Fushiki T. Enhancement of swimming endurance in mice by highly branched cyclic dextrin. *Bioscience, biotechnology, and biochemistry*. 1999;63(12):2045-2052.
7. Haff GG, Lehmkuhl MJ, McCoy LB, Stone MH. Carbohydrate supplementation and resistance training. *Journal of strength and conditioning research / National Strength & Conditioning Association*. 2003;17(1):187-196.
8. Haff GG, Schroeder CA, Koch AJ, Kuphal KE, Comeau MJ, Potteiger JA. The effects of supplemental carbohydrate ingestion on intermittent isokinetic leg exercise. *The Journal of sports medicine and physical fitness*. 2001;41(2):216-222.
9. Haff GG, Koch AJ, Potteiger JA, et al. Carbohydrate supplementation attenuates muscle glycogen loss during acute bouts of resistance exercise. *Int J Sport Nutr Exerc Metab*. 2000;10.
10. Kerksick C, Harvey T, Stout J, et al. International Society of Sports Nutrition position stand: nutrient timing. *J Int Soc Sports Nutr*. 2008;5:17.
11. O'Donnell K, Kearsley M. *Sweeteners and sugar alternatives in food technology*. 2nd Ed. John Wiley & Sons; 2012.
12. Jenkins DJ, Wolever TM, Taylor RH, et al. Glycemic index of foods: a physiological basis for carbohydrate exchange. *Am J Clin Nutr*. 1981;34(3):362-366.

13. Miller JB, Pang E, Bramall L. Rice: a high or low glycemic index food? *Am J Clin Nutr.* 1992;56(6):1034-1036.
14. Holt SH, Miller JC, Petocz P. An insulin index of foods: the insulin demand generated by 1000-kJ portions of common foods. *The American journal of clinical nutrition.* 1997;66(5):1264-1276.
15. Deutz NE, Wolfe RR. Is there a maximal anabolic response to protein intake with a meal? *Clin Nutr.* 2013;32(2):309-313.
16. Fujita S, Rasmussen BB, Cadenas JG, Grady JJ, Volpi E. Effect of insulin on human skeletal muscle protein synthesis is modulated by insulin-induced changes in muscle blood flow and amino acid availability. *American journal of physiology. Endocrinology and metabolism.* 2006;291(4):E745-754.