



# About Mannatech's EM•PACT® Sports Drink Mix



## Insights from Mannatech's R&D Department

### What is the EM•PACT Product?

Mannatech's EM•PACT citrus-flavored drink mix, when added to water, is a sports supplement intended to improve endurance and prevent dehydration when consumed 20 minutes prior to exercising or participating in other athletic activities.\* It contains a number of different sources of energy used by the body, including medium-chain triglycerides, fructose and L-carnitine, along with choline, a nutrient involved in neuromuscular control, and the electrolytes potassium, magnesium and calcium. The EM•PACT drink mix also contains a very small amount of Mannatech's unique blend of plant-sourced polysaccharides, Ambrotose® complex, although it is not intended to be used as a substitute for the Ambrotose and Advanced Ambrotose® products.

### How Does EM•PACT Drink Mix Help Benefit the Body During Exercise?

Consuming EM•PACT drink mix in water approximately 20 minutes before exercising can help prevent workout fatigue due to dehydration or carbohydrate depletion.\* The fructose present in this product is a simple carbohydrate, similar to glucose, which can be used as energy.\* It is important to note that glucose ingestion can cause a spike in plasma insulin levels that may result in hypoglycemia during exercise, while fructose ingestion is associated with only a modest rise in insulin levels and no exercise-associated hypoglycemia (1). EM•PACT drink mix also provides a form of energy called medium-chain triglycerides that can be readily broken down into short-chain, free fatty acids to be used as fuel for muscles.\* The presence of L-carnitine in the EM•PACT formula may also help enhance exercise performance by generating additional energy for the muscles.\* Furthermore, the electrolytes present in EM•PACT drink mix may help regulate cellular water levels to keep the body hydrated during intense exercise.\*

### What Studies Have Been Performed Using EM•PACT Drink Mix?

Three Mannatech-funded clinical studies have demonstrated EM•PACT drink mix's abilities to enhance cardiorespiratory fitness and aerobic performance.\* When consumed 20 minutes prior

to a treadmill test, the EM•PACT drink mix resulted in enhanced  $VO_2$ max, a measure of the body's ability to use oxygen, and a longer time to exhaustion when compared to water alone (2).\* Compared to the nation's leading sports drink, EM•PACT drink mix significantly enhanced  $VO_2$ max and maximal MET (metabolic equivalent) levels, a measure of energy expenditure, and improved the use of fat over carbohydrates as sources of energy utilized by the body during exercise (3).\* Furthermore, the current version of EM•PACT drink mix, from which creatine monohydrate was removed to allow the product to be acceptable by governing bodies of competitive athletics, has also been shown to enhance  $VO_2$ max and lengthen the time to exhaustion, as well as increase fat substrate utilization, compared to water alone (4).\*



### What Safety Information Is Available for the EM•PACT Product?

Over half a million units have been sold since the product's introduction in 1996. Mannatech has an established Safety Monitoring Program in place to continually oversee the safety of EM•PACT drink mix for consumers. This product does not contain typical energy drink stimulants, such as caffeine. Unlike many other commercial sports drinks, EM•PACT drink mix does not contain glucose or sucrose, sugars that can trigger higher insulin responses than fructose. EM•PACT drink mix is formulated without any substances banned by worldwide anti-doping agencies. The product is also gluten-free and suitable for consumption by vegetarians.

#### REFERENCES

- (1) Koivisto VA, Karonen SL, Nikkil EA. Carbohydrate ingestion before exercise: comparison of glucose, fructose, and sweet placebo. *J Appl Physiol* 1981; 51(4):783-787.
- (2) Byars A, Greenwood MGL. The effectiveness of a pre-exercise performance drink (PRX) on indices of maximal cardiorespiratory fitness. *J Int Soc Sports Nutr* 2006; 3(1):56-59.
- (3) Byars A, Schneider KD, Hesseltine MC, Simpson WK, Greenwood M. Sports nutrition: comparing two sports drinks on aerobic performance. *Appl Res Coach Athletics Ann* 2007; 22:226-240.
- (4) Byars A, Keith S, Simpson W, et al. The influence of a pre-exercise sports drink (PRX) on factors related to maximal aerobic performance. *J Int Soc Sports Nutr* 2010; 7:1-6.

**\* These statements have not been evaluated by the Food and Drug Administration. These products are not intended to diagnose, treat, cure or prevent any disease.**