



BOA Aerosol Blast

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BOA Aerosol Blast is a unique product that promises to change the game in how athletes fuel their bodies before, during, and after competition. This product takes advantage of an innovative aerosol delivery method to replenish the electrolytes lost during athletic competition. By using an aerosol device to bypass the need for gastrointestinal absorption, BOA Aerosol Blast efficiently and effectively delivers the necessary electrolytes to optimize athletic performance.

Electrolyte loss starts as soon as an athlete begins to sweat and lose fluids. Keeping up with these electrolyte losses is essential to maintaining performance. However, during exercise, athletes can lose up to 3 liters of fluid per hour. (Davis et al) Commercial sport drinks often fall short of replacing the electrolytes necessary for sustaining performance level (Ayotte and Corcoran 2018). Attempted repletion of electrolytes through gastrointestinal absorption during performance is both slower and fraught with side effects such as bloating and gastrointestinal upset. (Parmar) Blood flow to the kidney decreases during exercise and urine output drops, limiting the body's ability to compensate for over-hydration as well. (Zambreski) Post-exercise, large boluses of fluid can alternatively lead to increased urine production, in turn requiring large volumes of fluid to restore electrolyte balance. (Kovacs)

The BOA Aerosol Blast product suspends necessary electrolytes with oxygen molecules to facilitate delivery of electrolytes through transmucosal absorption, thereby avoiding the side effects that can be common with alternative means of electrolyte delivery. Transmucosal absorption takes advantage of the highly vascularized and permeable buccal and sublingual mucosa to bypass gastrointestinal absorption and hepatic metabolism. (Narang) Medications delivered via transmucosal absorption have significantly higher bioavailability and shorter time to maximum plasma concentration. Medications are absorbed 3-10 times faster compared to oral ingestion and reach maximum levels in minutes compared to hours – a vital difference for an athlete actively exerting him/herself. This delivery method already has evidence to support increased absorption of important vitamins such as Vitamin D, (Sarati) and now this same technology can be used as part of an electrolyte replacement plan.

The concentration of sodium and chloride in sweat increases as the rate of sweating increases, emphasizing the need for efficient repletion of these electrolytes particularly during intense bouts of exercise. (ACSM). However, simply replacing sweat losses with water or sodium alone is not enough. Sweat is composed of both sodium as well as potassium, calcium, magnesium, and chloride. (ACSM) The BOA Aerosol Blast product has a unique blend of electrolytes and minerals designed to replete not just the sodium lost during exercise but these other important factors as well. For example, magnesium plays an important role in skeletal muscle contraction, and turnover of magnesium increases with physical activity. Acute repletion of magnesium has been associated with improved strength performance, and the Aerosol Blast products (PERFORM and ENDURE) provide magnesium repletion with each spray. (Kass) In an athlete population seeking every





BOA Aerosol Blast, continued...

possible edge for performance optimization, replacement of all electrolytes lost during exercise – not just sodium - is key.

Personalized hydration plans have been shown to improve power, awareness, and post-exercise heart rate recovery in athletes (Ayotte and Corcoran 2018), and the BOA products can play a critical role in the hydration plan for athletes of all levels. Not only does the Aerosol Blast avoid the pairing of these electrolytes with sugar-laden beverages requiring gastrointestinal absorption, but the use of oxygen as a vector for delivery of these electrolytes carries its own benefit as well. Inhalation of hyperoxic air has been shown to enhance reaction time and cognitive processing. (Chung et al) This can help to counteract the performance decrement that has been shown to occur with even mild dehydration.

In summary, these BOA Aerosol Blast products are designed to help an athlete achieve and maintain optimal performance, and their unique configurations are designed to give the athlete an extra edge where other sports beverages and electrolyte replacement products fall short. Rapid transmucosal absorption, oxygen molecules as both a method of delivery and performance booster, and a unique formulation of multiple, necessary electrolytes all ensure that the Aerosol Blast products have the potential to revolutionize the way athletes hydrate, perform, and recover.

References

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