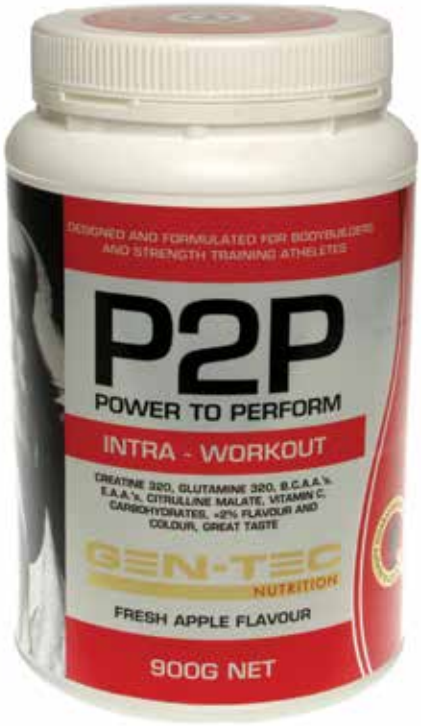
PRODUCT INFORMATION



100%

Dairy Food Safety Victoria

Certified System™
Food Safety
CODEX
HACCP
SAI GLOBAL

PURITY & QUALITY GUARANTEED BY NICK JONES

P2P (POWER TO PERFORM)

INTRA-WORKOUT

BASIC FUNCTIONS
Strength, Lean Muscle Gain, Endurance, Improved Recovery

Evidence based view on the intra-workout puzzle
By Dane Ivicevic: Dip, B.Sc, GCert, GDip
Nutritionist, Exercise Scientist and Clinical Biochemist

Resistance training (RT) is known to stimulate gains in strength and lean muscle, however to what extent can these gains be acquired is now known to be heavily dependent on nutrient intervention and the timing of these nutrients. By now everyone is quiet familiar that correct post workout nutrition is critical for muscle growth and recovery, but, many aren't aware of the importance that intra-workout nutrient delivery has on maximising lean muscle growth and development. The purpose of this article is to discuss the evidence and relevance behind various nutrients contained in one of the leading intra-workout products, P2P.

Gaining the maximal benefits from hard training requires optimal conditions for strength and muscle development to occur. The importance that various hormones play in the development of strength and muscle is well established in the literature, however achieving the best anabolic environment by dietary means has only become more clear in recent years. Evidence shows that intense exercise initiates the muscle remodelling process by activating hormone-mediated proteolysis, resulting in a drop of nitrogen balance and therefore an increase rate of muscle breakdown(1, 2). In order to regulate this inevitable process in favour of less myofibrillar breakdown and a higher nitrogen balance to support protein synthesis , the correct balance and timing of nutrients is crucial. However, to date there has been a clear misunderstanding in the required balance and timing of nutrients amongst athletes and supplement manufacturers.

To date the beneficial effects of CHO ingestion during exercise is well established, However, it is also well documented the beneficial effects that EAA has on protein synthesis and muscle repair(3-5). Unfortunately, even this knowledge alone doesn't cut it as the combination of the two must be correctly proportioned and the sources of CHO must also be well balanced in order to maximise absorption and nutrient delivery(4, 6, 7). Furthermore, the confusion surrounding the timing and combination of other nutrients has not helped people make an informed decision on what products or dietary methods they will adopt in order to prevent them being robbed of their hard training.

A study by Bird et al, 2006, addressed the issue between CHO and EAA for RT athletes and found that subjects who ingested a mix of CHO and EAA significantly increased strength, fat loss and lean muscle gains compared to the placebo or individual groups over a 12 week period(4).The loss of adipose

GEN-TEC NUTRITION

100% Australian Owned and Manufactured. Gen-Tec sources the world's finest quality raw materials and use internationally recognised bio chemists to produce leading products that live up to my expectations!

Nick Jones, Mr Australiasia, Mr Australia, Mr World
Enquiries +61 8 8186 4628 Visit gen-tec.com.au

fat was theorized to be due to the heightened calorie expenditure at rest due to increases in lean muscle and strength which wasn't observed in groups without CHO. In addition, the study took into account, which many don't, that it is the neural adaptations that occur in untrained individuals who gain strength after commencing a RT program. What they reported was gains in strength in the PLA groups for only the first 8 weeks and not from weeks 8-12(4). However the test groups continued to gain strength up until week 12, indicating that the gains in strength were not attributed to neural adaptations and were indeed the tested subjects. In addition, the combined CHO and EAA groups acquired more gains in myofibrillar cross sectional area (CSA) compared to groups ingesting CHO or EAA alone(4). This too is quiet significant as it clearly indicates the importance both CHO and EAA have on regulating catabolic hormones and increasing protein synthesis for achieving higher lean muscle growth and strength. The gains in strength and muscle for the combined group was attributed to the synergistic effect that CHO and EAA had on suppressing Cortisol and hormone-mediated catabolism which was due to the rise in insulin and the affects of EAA on protein synthesis(4). The reduction in muscle breakdown was measured by the excretion of 3-methel-Histadine (3MH), which is a marker of muscle breakdown and was suppressed significantly more in the combined test group(4).

Moreover, another nutrient which plays a critical role is creatine. Creatine is an amino acid derived nutrient that has been unequivocally shown to increase fat free mass, increase strength and enhance repeated anaerobic performance(8). This has been suggested to result as an increase in protein synthesis and muscle water that ultimately leads to enhanced quality of training gains. Too often people underestimate the importance of combining creatine with a CHO and EAA supplement, merely resulting in partly delivered creatine to the muscle cells and more creatine excreted in the urine.
The combination of creatine with CHO that utilise both glucose and fructose transporters, results in significantly higher absorption rates and nutrient delivery to the working muscles(3, 9). The best way to describe this complex process is that CHO and EAA together provide more cars so more nutrients make it to the party (muscle cells) and the use of multiple routes to avoid traffic congestion. As simplistic as this may seem the importance of maximizing this system is critical for fast muscle repair and growth. Furthermore, the use of nitric oxide precursors such as arginine are the finial icing on the cake when it comes to perfecting the intra-workout puzzle. Arginine stimulates vasodilatation which allows improved blood flow to the working muscles, which is felt by an increase in muscle pump or venous pooling as its correctly called(10). This process complements our previous analogy about the cars taking nutrients to the cells as blood vessel dilation essentially adds more lanes to every route that the cars take to get there, ultimately leading to even further enhancement of nutrient delivery and therefore a more optimal environment for greater muscle repair and growth to take place.

PRODUCT INFORMATION

In summary a combination of the correct CHO mix, the right EAA, creatine monohydrate and arginine precoursors results in a synergistic enahncment of the muscle remodelling process, resulting in significantly greater gains in strength, muscle, performance and fat loss. P2P is one of the most balanced intra-workout products on the market today with its combination of carbohydrate (CHO), essential amino acids (EAA), creatine and nitric oxide precursors makes this a crucial addition in order to maximize anabolic hormones, strength and acquire maximal lean muscle mass.

1. Bolster DR, Jefferson LS, Kimball SR. Regulation of protein synthesis associated with skeletal muscle hypertrophy by insulin-, amino acid- and exercise-induced signalling. Proceedings of the Nutrition Society. 2004;63(02):351-6.
2. Hawley JA, Tipton KD, Millard-Stafford ML. Promoting training adaptations through nutritional interventions. Journal of Sports Sciences. 2006;24(7):709-21.
3. Wallis GA, Hulston CJ, Mann CH, Roper HP, Tipton KD, Jeukendrup AE. Postexercise muscle glycogen synthesis with combined glucose and fructose ingestion. Medicine & Science in Sports & Exercise. [Research Support, Non-U.S. Gov't]. 2008;40(10):1789-94.
4. Bird SP, Tarpenning KM, Marino FE. Independent and combined effects of liquid carbohydrate/essential amino acid ingestion on hormonal and muscular adaptations following resistance training in untrained men.[Erratum appears in Eur J Appl Physiol. 2006 May;97(2):239]. European Journal of Applied Physiology. [Randomized Controlled Trial Research Support, Non-U.S. Gov't]. 2006;97(2):225-38.
5. Thyfault JP, Carper MJ, Richmond SR, Hulver MW, Potteiger JA. Effects of liquid carbohydrate ingestion on markers of anabolism following high-intensity resistance exercise. Journal of Strength & Conditioning Research. [Clinical Trial Controlled Clinical Trial Research Support, Non-U.S. Gov't]. 2004;18(1):174-9.
6. Skillen RA, Testa M, Applegate EA, Heiden EA, Fascetti AJ, Casazza GA. Effects of an Amino Acid--Carbohydrate Drink on Exercise Performance After Consecutive-Day Exercise Bouts. International Journal of Sport Nutrition & Exercise Metabolism. 2008;18(5):47392.
7. Bird SP, Tarpenning KM, Marino FE. Effects of liquid carbohydrate/essential amino acid ingestion on acute hormonal response during a single bout of resistance exercise in untrained men. Nutrition. [Randomized Controlled Trial Research Support, Non-U.S. Gov't]. 2006;22(4):367-75.
8. Rosene J, Matthews T, Ryan C, Belmore K, Bergsten A, Blaisdell J, et al. Short and longer-term effects of creatine supplementation on exercise induced muscle damage. Journal of Sports Science & Medicine. 2009;8(1):89-96.
9. Ormsbee MJ, Mandler WK, Thomas DD, Ward EG, Kinsey AW, Simonavice E, et al. The effects of six weeks of supplementation with multi-ingredient performance supplements and resistance training on anabolic hormones, body composition, strength, and power in resistance-trained men. Journal of the International Society of Sports Nutrition. 2012;9(1):49-60.
10. Little JP, Forbes SC, Candow DG, Cornish SM, Chilibeck PD. Creatine, Arginine αKetoglutarate, Amino Acids, and Medium-Chain Triglycerides and Endurance and Performance. International Journal of Sport Nutrition & Exercise Metabolism. 2008;18(5):493-508.

SIZES
Available in 900g

FLAVOURS
Apple, Blueberry, Lemonade, Orange

GEN-TEC NUTRITION

100% Australian Owned and Manufactured. Gen-Tec sources the world's finest quality raw materials and use internationally recognised bio chemists to produce leading products that live up to my expectations!

Nick Jones, Mr Australiasia, Mr Australia, Mr World
Enquiries +61 8 8186 4628 Visit gen-tec.com.au