

The Future of Personalized Pre-Workout Supplements:  
The Science Behind the P.P.K.™ Series  
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Pre-workout supplements are abundant throughout the sports nutrition industry. Many of which seem to be quite similar with a familiar recipe: lots of caffeine combined with several other ingredients that lack scientific support. The market is flooded with products containing ingredients that are either ineffective, or in miniscule quantities, hidden under proprietary labels. As someone who wants to get the best outcome from your workout, you not only deserve a research proven formula that provides real functional benefits, but something that is tailored to your specific desires.

What's missing in the pre-workout market is a preworkout supplement that is tailored to your specific training goals. P.P.K.™ for years has already been more than your typical mega dose of caffeine plus random, useless, do-nothing ingredients. Now, P.P.K.™ has evolved again in three distinct functional varieties to reach the goals of more athletes and their specific goals. As the name implies, each P.P.K.™ still promotes the three main objectives of the ultimate pre-workout supplement: Power-Pump-Kick! However, we know that a “one size fits all” supplement is not what is best for you! That's why the new P.P.K.™ Series is now focused on enhancing the three major benefits of exercise training with top-in-class, research proven ingredients dedicated to those functions.

### **“PUMP SERIES”**

Weight lifters love it, critiques dismiss it completely as an ergonomic benefit, but one of the most sought-after feelings from a great workout is a great muscle pump. In the simplest sense, the muscle pump is evidence of enhanced muscle perfusion (blood flow to the muscles) during intense physical activity, localized to a particular muscle group. As the increased blood volume travels to the muscle, some fluid crosses into individual muscle cells causing them to swell (“the pump”). The superficial benefit of the pump is the positive biofeedback of a hard workout. This association with the feeling of large swollen muscles serves as reinforcement to keep working harder. However, that is not all “the pump” is good for. Evidence suggests that the cell swelling that occurs with a muscle pump is a positive stimulus that drives muscle protein synthesis and leads to muscle hypertrophy over time.

More importantly, muscle perfusion is required for the delivery of oxygen and other nutrients to the working muscle, and also for the removal of metabolic waste products. Intense resistance exercise produces metabolites such as lactate that

accumulates in the muscle and contributes to the muscle fatigue while exercising. During rest intervals, the enhanced muscle perfusion functions to remove metabolites, such as lactate, and allow for faster recovery between sets. The expedited removal of lactate results in less fatigue and thus greater muscle performance during subsequent sets.

Pump Series P.P.K.™ is designed specifically to enhance the muscle pump to the maximum effect and is suitable for long duration, muscular-endurance style workouts where you push for higher repetitions, sets, or otherwise overall higher volume. Many preworkout supplements may claim to improve the “muscle pump”, but fail to show any evidence of it. The “Pump Series” provides a unique pump that will push you longer into your workout with three specialized pump ingredients in the “Maximum Pump Complex”.

### **L-Citrulline DL-Malate**

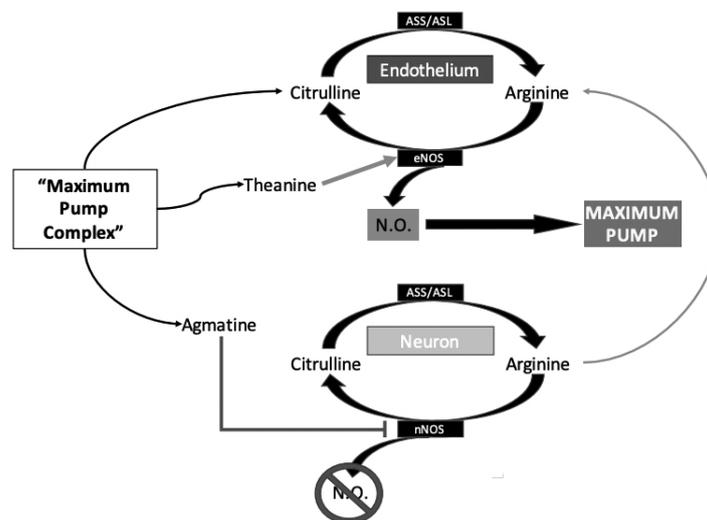
All muscle pumps start with a molecule called nitric oxide (NO). Making more of it during exercise simply means greater muscle pumps. Arginine is the precursor for NO, but oral arginine ingestion has a very limited bioavailability and hardly makes its way to the bloodstream. The most effective way to increase plasma arginine levels is to ingest the arginine precursor, citrulline. In the body, citrulline is efficiently recycled into arginine which can then produce NO. Unlike arginine, citrulline catabolism is minimal in the intestines as well as with its extraction from the liver. This results in the majority of citrulline passing into the systemic circulation before its conversion to arginine. Due to this and its noncompetitive uptake for cell transport, oral citrulline supplementation has been shown to be highly effective in increasing plasma arginine levels, and consequently, biomarkers of increased NO. Studies indicate that 6 grams of citrulline malate for 7 days significantly increases plasma arginine and nitrite levels and furthermore, improves oxygen handling at the muscle cell and enhances exercise performance. Multiple studies have shown improvements during upper- and lower-body multiple bout resistance exercise performance.

### **Agmatine Sulfate**

Agmatine is a great companion to citrulline with its ability to amplify a muscle pump by working synergistically with citrulline. Agmatine is the decarboxylation

product of arginine that has been shown to many biological models to produce benefits in an athletic population. To understand how these can work together, you first need to understand how NO is produced.

NO is produced from arginine with the help of an enzyme called NOS, but NOS exists in different forms to produce NO in different tissues. Endothelial-NOS (eNOS) is the isozyme that produces increased blood flow and enhanced muscle pumps, whereas the neuronal-NOS (nNOS) consumes arginine and produces NO in the nervous rather than the peripheral vascular system. While producing NO is what you want during exercise, you also want it to occur where your muscles can benefit from it. Agmatine functions to reduce the activity of the nNOS thus indirectly focusing the NO production at the eNOS, potentiating the role of citrulline, and producing more powerful muscle pumps.



**Figure 1.** The combination of citrulline, agmatine and theanine synergize together to produce the "Maximum Pump Complex". Citrulline is a precursor to Nitric oxide (N.O.), via arginine, that is responsible for the muscle pump during exercise. Theanine increases activation of the enzyme (eNOS) that produces N.O. in the endothelium. Agmatine inhibits the enzyme (nNOS) that produces N.O. in the nervous system. The excess arginine not being converted to N.O. in the nervous system can be used in the vascular system instead and contribute to more endothelium derived N.O.

## L-Theanine

The final component to the "Maximum Pump Complex" is L-Theanine. This is a multifunctional ingredient that completes the full story of NO production via NOS

activity. While agmatine is known to inhibit nNOS activity, theanine appears to play a role with enhancing eNOS activity. The evidence shows this function occurring at relatively low cellular concentration making it to be a practical tool to further increase NO production and consequently maximum muscle pumps.

Altogether, the combination of citrulline, agmatine and theanine, work synergistically with one another to collectively increase the potential of NO production focused in the vasculature of your working muscles. When present in conjunction with heavy resistance training, the low oxygen environment of the working muscle will kick start all the pathways utilized in the “Maximum Pump Complex” (Figure 1).

### **“POWER SERIES”**

The “Power Series” P.P.K.™ is purely designed to achieve maximum power with every workout. With the combination of the most powerful ingredients dedicated to improve power output, “Power Series” will ensure that no rep is left in the tank and you tap into your full power potential. This series is specifically designed for powerlifters, Olympic-lifters, or the athlete who simply wants to push their physical strength and power for personal achievement or power-sports. High-intensity exercise is a unique form of exercise that doesn't depend on total amount of fuel in your muscles, or the delivery of oxygen to burn them. High-intensity exercise quickly depletes sparse energetic molecules in your muscles and leaves behind a toxic environment that only allows the exercise to occur for a very brief moment. Fatigue begins to set-in during your very first repetition. The five ingredients of the “Maximum Power Complex” in “P.P.K.™ Power Series” will push your anabolic threshold to higher levels and unleash your maximum power potential.

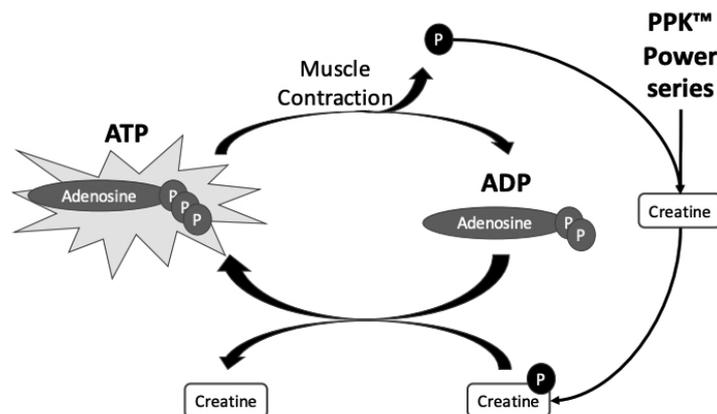
### **Beta-Alanine**

High-intensity exercise comes with a lot of metabolic buildup in the muscle and very little time for it to be released. Eventually the accumulation metabolites produced in the muscle shut the muscle down completely and you reach fatigue. You may think you can overcome fatigue with pure determination, but even the strongest mind cannot override the chemically-induced muscle fatigue that comes with high-intensity exercise. Carnosine is one of the primary muscle-buffering substances available in skeletal muscle. The issue is that your body only makes a limited supply of carnosine

and if you want to be able to push your intensity beyond the limits of what you have performed before, you need to increase your muscles buffering capacity. Carnosine is not something you can consume directly, but the limiting factor in its production is beta-alanine. Beta-alanine is the precursor to carnosine and studies show that supplementing with beta-alanine can drastically increase your muscle-carnosine levels. Consequently, beta-alanine supplementation has been associated with the delay of fatigue during high-intensity exercise that results in increased work capacity, training volume, time to fatigue, and improvements of body mass and strength. Moreover, studies have shown that adding beta-alanine to creatine improves performance over creatine alone.

### Creatine Monohydrate

Creatine is undoubtedly the most widely accepted strength and power aid in the entire sport supplement industry. With a product focused on obtaining maximum levels of power, creatine is not something to be overlooked. Since the first studies in the early 90s, many hundreds of research publication have emerged studying the effects on improving power.



**Figure 2.** Ultra-fast, but limited, energy resource, ATP, breaks down to ADP and Phosphate (P) during muscle contraction. Dietary creatine can enter the muscle cell and scavenge the free phosphate to create phosphocreatine (Creatine-P). Phosphocreatine can bond with ADP and donate the phosphate group back to the ADP and recreate ATP stores for additional energy for anaerobic high-intensity exercise.

The initial couple of seconds of exercise, muscle utilizes the limited supply of an ultra-fast energy molecule called adenosine triphosphate (ATP). It is so fast, that you will exhaust the entire supply after two seconds of high-intensity exercise. Creatine is a

molecule naturally occurring in skeletal muscle for the purposes to recharge the supply of ATP to extend its function. However, charged creatine levels are not unlimited and they can run out nearly as quickly. Just like carnosine, the basal levels of creatine that naturally occur in your muscles can be improved and increasing those levels will lead to improved performance. Unlike carnosine though, direct ingestion of creatine will in fact rapidly increase muscle-creatine levels very easily. Once in the muscle creatine charges itself with the ability to replenish ATP levels during extremely high-intensity bouts of exercise and extend the duration in which you have the fuel to perform at high-intensities (Figure 2). Creatine is additionally beneficial because it delays the accumulation of the fatiguing metabolites that will eventually terminate the exercise bout.

### **Caffeine Anhydrous**

The world's most well-known natural performance enhancer is caffeine. Caffeine works on multiple organ systems including muscle, brain, and the rest of the central nervous system. Since this is not a secret, it is what a lot of pre-workout supplements focus heavily on. Acting as a stimulant to the central nervous system, caffeine has proven effects on potentiating the mind muscle connection for enhanced muscle activation. At the level of the muscle cells, caffeine is an activator of the ryanodine receptors and consequently enhances intramuscular calcium release and increases the intensity of muscle contraction. A moderate dose of caffeine has been shown to significantly enhance strength, as well as the time to fatigue. Probably the most well-known property of caffeine is to antagonize adenosine receptors in the brain, which promotes alertness and the mental ability to push through physical discomfort. Caffeine also acts as a mild cognitive enhancer, improving concentration and mood through enhanced dopamine signaling. Another mechanism through which caffeine improves performance is by increasing the secretion of  $\beta$ -endorphins. It has been established that plasma endorphin concentrations are enhanced during exercise and their analgesic properties may lead to a decrease in pain perception and allow you to push through each set harder.

The effects of caffeine are dose dependent, but a moderate dose does a lot, and more than that is associated with increased risk of caffeine tolerance, dependency and a few other negative effects, some of which can in fact interfere with its benefits. For

this reason, P.P.K.™ uses a responsible dose of caffeine of 250 mg in order to achieve its maximum benefits while also minimizing the negative effects with chronic use.

### **Betaine Anhydrous**

Betaine is also known as trimethylglycine (TMG), an active metabolite of choline. Its primary function is to serve a vital role in the methylation of cellular molecules. One of the major targets of TMG is SAdenosyl methionine (SAdMe), which is involved in maintaining metabolic reactions. Of importance to muscle power, SAdMe is used in the biosynthesis of creatine. Meaning, supplementing with betaine is yet another mechanism to maximize muscle creatine levels. Research indicates that 2.5g of betaine can increase total work conducted over the course of a bench press workout by 6.5%.

Betaine also acts as an osmoregulator. Similar to other osmolytes, intracellular betaine can influence cell size by affecting cellular tonicity. Similar with creatine supplementation, betaine causes an influx of fluid into the muscle cells to add additional fullness in muscle size. Muscle cell swelling is known to be associated with improved muscle development.

### **Peak ATP®**

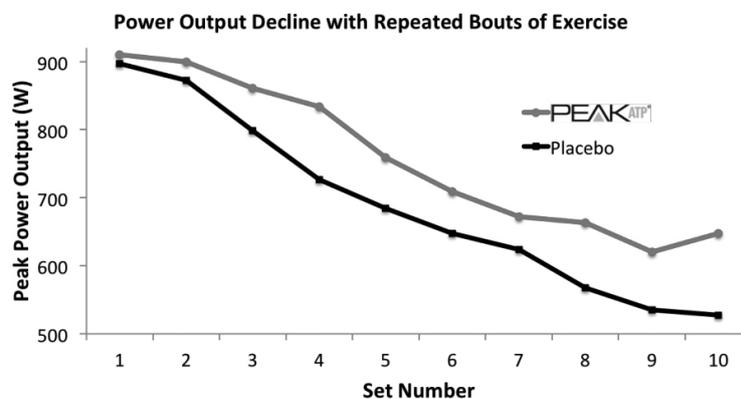
Peak ATP® is the newest cutting-edge wonderingredient that constantly over-delivers. Research is clear for the first time that oral ingestion of Peak ATP® increases blood levels of ATP and that those levels remain elevated even following repeated bouts of exercise. This breakthrough has led to many other discoveries about what enhanced levels of ATP in the blood stream can offer.

The most impressive aspect of Peak ATP® is its ability to increase muscle excitability. In other words Peak ATP® increases the sensitivity for muscles to contract relative to the level of muscle activation from the nervous system. In essence, improved muscle excitability is the ability to improve the strength of a muscle contraction without increasing the amount of effort put-forth. By exploiting this effect, maximal effort can be more impactful without any change in the level of effort. With this ingredient, you will be able to push through set after set with improved power output.

Increased plasma-ATP levels lead to an increase in ATP being stored in nerve terminals. Upon muscle activation, ATP is released together with acetylcholine in a

ratio of 1:5 onto the motor endplate of skeletal muscle. Extracellular ATP interacting with the P2Y receptors lead to the formation of inositol triphosphate and ultimately the mobilization of intracellular calcium thereby enhancing the muscle contraction. Preliminary research analyzing the ratio between muscle power-output and muscle-activation revealed that oral ATP increased muscle excitability during early bouts and prevented the decrease in muscle excitability observed during later bouts of repeated sprint bouts. This means that significant performance enhancements can be observed in an acute time frame.

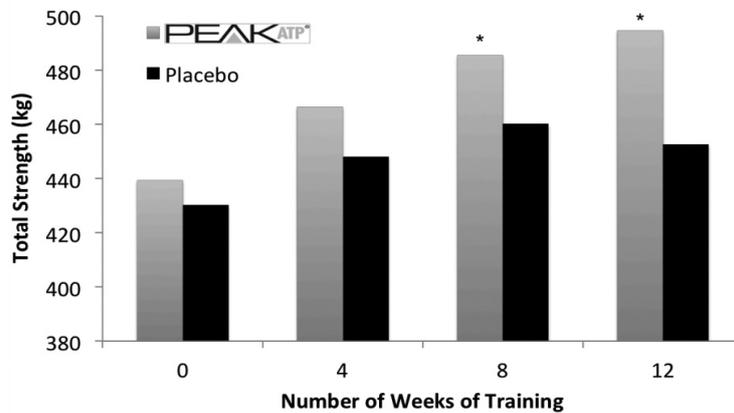
As illustrated figure 3, muscle power output follows a steep decline from one set to the next such that by the end of full workout of a specific muscle group, those muscles can feel quite sluggish. The effects of Peak ATP® results in a less dramatic decline in power output. For example, this clinical study shows that after a grueling workout that lasts up to 8 or 10 sets on a single muscle group, supplementation with Peak ATP® significantly amplifies muscle power, specifically at those later sets. The mechanism behind this phenomenon is quite interesting because these data indicate that this occurs without affecting muscle activation at all.



**Figure 3.** Improved muscle excitability generated by Peak ATP® allows for a prolonged maintenance of power output during repeated bouts of fatiguing exercise.

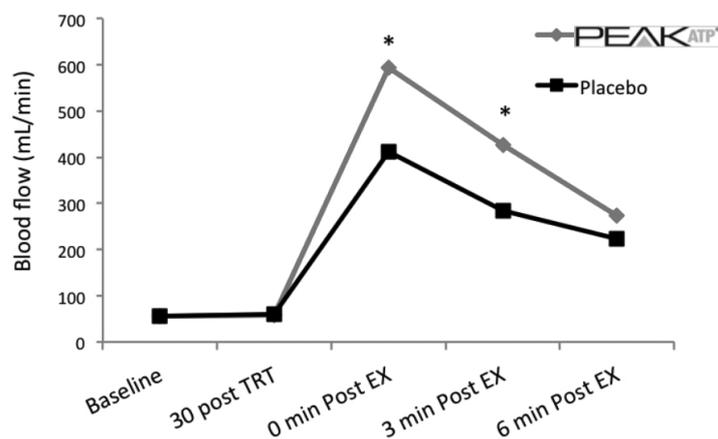
With chronic supplementation of Peak ATP® before every workout, the individual improved workouts translate to better gains in the long run. A couple of studies focused on the long-term benefits of Peak ATP® supplementation with resistance training over 12 weeks showed significant improvements in muscle strength, lean body mass and muscle size. In fact, when compared to a placebo group, squat strength increased

215% higher, bench press 71% higher and deadlift 138% higher. When combined for total strength, Peak ATP® supplementation was associated for 147% greater increase in strength than a placebo group with the exact same training protocol (Figure 4).



**Figure 4.** Chronic supplementation of Peak ATP® resulted in noticeable and significant improvements in total muscle strength, detectable as early as 8 weeks.

In addition to strength, Peak ATP® was associated with doubling the increase in lean body mass and quadriceps circumference. In short, Peak ATP® is the key element to get the most out of the effort put towards training.



**Figure 5.** Peak ATP® acutely increases bloodflow and drives an enhanced muscle pump immediately during the onset of exercise.

A secondary benefit to Peak ATP® comes from its ability to increase blood flow during exercise. Although not primarily a pump product, “Power Series” still delivers a premium pump with Peak ATP®. The data shows that during exercise, 400

mg of Peak ATP® can increase the rate of blood flow 54% higher than exercise with a placebo (Figure 5).

The ATP molecules in the bloodstream bind to receptors in the endothelium that trigger the release of several factors to relax the surrounding smooth muscle to widen of the blood vessels in a process called vasodilation. By augmenting the amount of blood-ATP, through the ingestion of Peak ATP®, vasodilation will occur to a greater extent leading to greater “muscle pumps”.

This combination of Beta-alanine, creatine, betaine, ATP along with caffeine creates the premium “Maximum Power Complex” that delivers the ultimate performance benefits.

### **“SHRED SERIES”**

The final series of P.P.K.™ is something unique in the pre-workout space. Pre-workout supplements are not typically designed to facilitate fat burning goals, but fat burning is one of the most popular reasons that people engage in physical activity. The missing element in all other pre-workout supplements are ingredients dedicated to enhancing the processes of burning fat while you exercise.

Burning fat during exercise is not as simplistic as it sounds. It’s like telling your body to tap into all of its emergency energy reserves despite not being in desperate environment to do so. As your muscles prefer the use of carbohydrates for most highintensity exercise, P.P.K.™ Shred Series can help shift your metabolic focus and help burn more fat. The “Shred Series” is formulated with the “Shred Complex” of six ingredients to maximize your fat burning capabilities.

### **Caffeine Anhydrous**

As common an ingredient caffeine is in preworkout products, and as much as it has already been discussed it does also have some validity for fat burning with a modest thermogenic effect on its own. However, one of the main mechanisms caffeine can contribute to burning fat is by sparing glycogen during exercise and favoring the oxidation of fat in the process. But the effects of caffeine does not end there. The proceeding ingredients in the “Shred Complex” work together with caffeine to enhance your total fat burning capacity.

### **N-Acetyl L-Carnitine**

The actual process of fat-burning is called betaoxidation, and as a consequence of exercise, it occurs in the mitochondria of the active muscles. Maximal rates of fat burning during exercise naturally occurs during moderate-intensity exercise, while increased intensity tends to decrease the rate of fat burning. One of the limiting factors of beta-oxidation during exercise is the transport of fatty acids into the mitochondria. The shuttling process requires intramuscular carnitine for this to happen. Research indicates that muscle-carnitine availability is a limiting factor to the rate of fat oxidation and that increasing the intramuscular carnitine pool can have a significant impact upon fat metabolism during higher intensity exercise. The rate of fat oxidation is thus dependent on the rate of fatty acid shuttling into the mitochondria. Supplementing with carnitine has been shown to increase fatty acid oxidation even at higher relative exercise intensities while reducing glycogen utilization.

### **Green Tea Leaf Extract**

Green tea extract has been shown to stimulate thermogenesis and can also amplify the thermogenic effect of caffeine as well. Studies show that the increase in thermogenesis in combination with caffeine occurs to a degree higher than caffeine or green tea alone. Studies show that green tea extract can increase energy expenditure by up to 4.5% alone.

It is proposed that the polyphenols of the green tea are responsible for this energy boosting effect. A subclass of green tea polyphenols called catechins have been shown to have long lasting stimulating thermogenesis by increasing the catecholamine hormones. One particular catechin name epigallocatechin gallate (EGCG) can effectively modulate an enzyme that degrades norepinephrine and causes norepinephrine levels to remain high. Research data has demonstrated that EGCG can increase norepinephrine levels by 37% and remain elevated for up to 24 hours. The green tea extract in the “Shred Complex” is not only 98% polyphenols, but 45% is specifically EGCG. This ingredient has the highest possible extraction of EGCG from green tea.

### **Raspberry Ketones**

Raspberry ketones are a natural phenolic compound of the red raspberry. The structure of this compound is similar to that of capsaicin and synephrine with established anti-obesity actions. Mechanistic studies of raspberry ketones have been shown to

increase norepinephrine levels and induce lipolysis by facilitating the translocation of a fat burning enzyme, called ‘hormone sensitive lipase’, into fat cells. In addition, raspberry ketones have been shown to increase fatty acid oxidation and suppress lipid accumulation.

### **Kinetiq®**

In terms of fat burning, Kinetiq® is a must. Kinetiq® is a branded extract of *Citrus aurantium* that has been standardized to 25% p-synephrine. P-synephrine, is a unique fat burning compound that stimulates an increase in metabolic rate, an increase in energy expenditure, and an increase in lipolysis. Collectively this attributes to greater overall weight loss.

The effects of Kinetiq® are supported by over a dozen safety and efficacy human clinical trials, which demonstrate help increase thermogenesis and promote weight loss with exercise. Kinetiq® exerts its beneficial effects through p-synephrine targeting and activating beta-3-adrenergic ( $\beta_3$ ) receptors. These receptors are specifically responsible for breaking down fat for energy. As opposed to other betaagonists, p-synephrine exerts its effects without any further cardiovascular interference. When combined with caffeine, the fat-burning effects of Kinetiq® becomes enhanced. Recent research has further demonstrated that Kinetiq® enhances sports and resistance training performance by helping to increase mean power, velocity, number of repetitions and total exercise volume.

In a recent 2018 double-blind randomized exercise trial of healthy exercise participants, ingestion of psynephrine elicited a 43% increase in the rate of fat oxidation compared to placebo during submaximal exercise. Interestingly, the absolute energy expenditure remained the same, meaning that less energy was consumed by lean muscle or glycogen stores. This evidence suggests that p-synephrine is an invaluable component for those interested in specifically in fat loss.

### **Vanadyl Sulfate**

Vanadyl sulfate is a compound containing the mineral vanadium. Vanadium can influence glucose metabolism and enhance insulin sensitivity through inhibiting the degradation of IRS-1. This allows for less insulin to be produced, a strong correlation with weight loss. The improved insulin sensitivity is a great match for carnitine since

insulin directly improves the bioavailability of carnitine into the muscle.

Collectively, these six “Shred Complex” ingredients will produce the optimum cellular environment to help burn the stubborn hard to target fat deposits. Common to each P.P.K.™ Series is a collection of indispensable ingredients that makes the whole P.P.K.™ lineup world-class. From the top-of-the-line nootropics providing the premium “Kick” of P.P.K.™, to the hydration complex, the following components are contained in all of the P.P.K.™ products, and making the P.P.K.™ Series the elite pre-workout collection.

### **WORLD CLASS KICK**

The kick is the most important part of P.P.K.™. Muscle adaptation occurs only after the muscles encounter a stimulus greater beyond its normal capabilities. This means exercises that are not pushed to the limits are not as beneficial as they could be. A lot of effort conducted in the gym will go to waste if the muscles are not exposed to this level of stimulation. That’s where the kick comes in. The P.P.K.™ nootropic blend of Caffeine, Huperzine A, Hordenine and BetaPEA is designed to provide the “kick” needed to keep motivation level high in order to keep training hard all the way through each set.

### **Huperzine A**

As a naturally occurring compound found in *Huperzia serrata*, Huperzine A penetrates the bloodbrain barrier that inhibits an enzyme that degrades the CNS neurotransmitter, acetylcholine. The inhibition of this enzyme increases the life of acetylcholine, which improves nerve transmission, mental function and coordination. Pharmacokinetic studies in several species including healthy human volunteers indicated that Huperzine A is safe, absorbed rapidly, distributed widely in the body and eliminated at a moderate rate.

### **Hordenine + Beta Phenylethylamine (β-PEA)**

β-PEA functions as a neuromodulator and neurotransmitter in the CNS. This is the same compound that is synthesized from the amino acid phenylalanine during exercise and is linked to the therapeutic effects of physical exercise. The production of β-PEA in the brain during exercise affects norepinephrine, dopamine, and acetylcholine

release and is considered a euphoriant. By oral route,  $\beta$ -PEA can achieve these effects extremely rapidly and serves to make exercise more rewarding, ultimately contributing to enhanced motivation and central drive.  $\beta$ -PEA can also be rapidly metabolized and exhibits a relatively short half-life. Fortunately, when combined with hordenine, the half-life of  $\beta$ -PEA can be extended. Hordenine contributes to this process by occupying the enzymes involved in the breakdown of  $\beta$ -PEA. This clever combination of ingredients compliments each other to enhance the enjoyment of exercising that you can really feel.

### HYDRATION COMPLEX

The final feature to the performance enhancing effects of the P.P.K.™ Series is the hydration support. The inclusion of key electrolytes works to assist with fluid transport into the muscles, and increasing cell volume. Specifically, sodium, potassium and chloride, work together to assist with water balance by creating an osmolarity gradient that pulls water into the cells from the bloodstream. The flux of fluid moving into the cells triggers an increase in thirst that replenishes blood volume. Insufficient cell hydration can interfere with muscle contraction. Thus, the hydrating properties of the P.P.K.™ Series allows for normal muscle contraction for the duration of the workout.

Simply drinking mass amounts of water is not always an optimal method to hydrate. Drinking plain water can dilute the existing electrolytes in the bloodstream causing a condition called hyponatremia. Therefore, supplementing with these nutrients will ensure optimal muscle functioning during the workout and prevent hyponatremia.

**Coconut Water Powder** is known for its concentrations of electrolytes, vitamins and minerals. This will enhance cell volume and hydration, stimulate thirst to keep you drinking water and also prevent cramping during exercise. Coconut water is high in, potassium, magnesium, and calcium. Potassium helps maintain water balance, stimulates metabolism of proteins and carbohydrates, helps muscles use glycogen, prevents muscle fatigue and enables normal muscle contraction. Magnesium participates in the conversation of ATP, decreases pain, prevents muscle cramps and spasms. Calcium helps muscles contract and work properly. Rather than pulling calcium out of your bones, coconut water can preserve your bone by supplying the calcium for you.

**Pink Himalayan Sea Salt** is high in sodium. Since coconut water is low in sodium, pink Himalayan sea salt is a great companion to coconut water powder to get the full spectrum of electrolytes naturally. It also provides additional potassium,

magnesium, and calcium. Sodium helps maintain water balance, activates thirst response, prevents water intoxication and hyponatremia, prevents cramps, enables normal muscle contraction. Also enables nerve impulse transmission and maintains normal blood pressure.

## **CONCLUSION**

P.P.K.™ is the only truly complete pre-workout supplement series that contains only the ingredients relevant to any workout. P.P.K.™ is designed exclusively for extracting the highest potential benefit from exercise by delivering the most clinically researched pump ingredients, the most powerful performance enhancers, the greatest fat-burning agents and the best-in-class nootropic kick truly worthy of the athlete who knows what they want from their workout and wants to get the best possible outcomes. The P.P.K.™ Series is not to be wasted for anything less.

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