



## **Proving the Superiority of PERQUE2 Life Guard**

### *The results of a successful double-blind, placebo-controlled research trial*

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**PERQUE LLC** has conducted a double-blind, placebo-controlled trial in young ‘healthy’ adults to demonstrate the sustained superiority of **PERQUE2 Life Guard**, a comprehensive, 40-nutrient, multi-vitamin and mineral supplement. An overview of this study, which has employed the most difficult, independent testing methods available, along with the results and lessons learned, are outlined in detail below.

### **In Summary**

In an IRB-approved, prospective-controlled trial performed at the Uniformed Services University of the Health Sciences (USUHS) in Bethesda, Maryland, 22 subjects were given either **PERQUE2 Life Guard** or a **placebo**. The trial was continued not for the usual 1-2 weeks, but for a full 12 weeks. The importance of this duration is that the study allows assessment of the sustainability of increased nutrient levels observed. For example, an enhancement in blood activity levels of a nutrient based on a short-term study does not show if the body would continue to maintain those higher, potentially better levels. Only if the same improvements are observed over a 6- to 12-week period can the possibility that a non-beneficial acute increase would result in the body adapting to and returning to its prior levels over time be excluded.

### **Assumptions by Scientific Literature**

- 5-25% of what is on the label of antioxidant, B complex, or multi-mineral products is available for actual uptake by the body.
- Cell energy systems and digestion are perfect with all transporters, protectors, and enablers present.

**PERQUE** does not find these assumptions to be met by most ambulatory people, let alone those who have chronic ill health.

### **Common Assumptions Untrue in Practice**

1. **It takes energy for the cells to take up the B complex, antioxidant, mineral, and cofactor nutrients.** Other products assume that this energy is present. Often there are energy deficits in the cells so that uptake is impaired. **PERQUE includes Krebs’ energy salts and other**

**energizing factors to raise cell ATP (cell energy) levels, which substantially increases nutrient uptake.**

2. **Most products include ‘inert’ ingredients that allow faster production or easier handling by the production crew. This translates to the uptake block of the nutrients.** Such ingredients include hidden starch carriers, wood chip cellulose, carboxymethylcellulose (CMC), povidones, and other fillers, binders, or lubricating agents. **PERQUE** excludes all such ingredients or any ingredient that does not add active function to the formula. This means **PERQUE** has to produce products in smaller batches and with greater care. This also means a much greater activity from **PERQUE** products since even the best of other products typically contains 50% or more of ‘inert’ (and usually undisclosed) ingredients by weight.
3. **Most products mix antioxidants with oxidants (like iron, copper, and iodine or sulfites, metabisulfites, or other oxidizing preservatives). This creates a destruction of active, delicate ingredients during the blending, production, and storage process.** This is known as tablet migration and tablet interaction. By design, **PERQUE** uniquely avoids these problems, thus delivering more active products.
4. **The form of the nutrient matters. PERQUE selects only those forms that nature uses in foods for enhanced action and uptake of nutrients.** This includes the transporters and cofactors that facilitate nutrient uptake from foods. No law requires these beneficial agents to be present. No other company besides **PERQUE** includes them by design and corporate philosophy.
5. **PERQUE products are full disclosure. This means there are no hidden ingredients to cause uptake block, allergic reactions, or increase the amount of product that needs to be taken.**
6. **PERQUE products are energized formulas. This means your cells gain energy and that enhanced energy is available to increase nutrient uptake by cells and for productive cell synthesis and action. Therefore, faster results are achieved.**
7. **PERQUE products alkalize cells.** This means that the excess acids produced from acid-forming diet choices can be compensated by sufficient intake of **PERQUE** products. Net excess acid is formed in adults when:
  - a) More than 60 grams (for a 2000 calorie diet this means 15% protein as % of total calories), and/or,
  - b) More than 20% of calories from fat, and/or,
  - c) More than 5% of calories from simple sugar, and/or,
  - d) Foods are mineral deficient due to soil depletion of minerals from monocrop farming.

Further, the basal metabolism cell acid production, the increased acid from distress (cortisol excess) and toxins (from toxic metals to pseudoestrogens to solvent residues) can be neutralized by increasing **PERQUE** intake in proportion to the total toxic load. This means that cell

chemistry can be restored to its healthier alkaline balance and then work more strongly and effectively.

### **PERQUE2 Life Guard Placebo-controlled Trial Results**

The subjects were asked to consume just two **PERQUE2 Life Guard** supplements a day, which was the only supplementation for these subjects during the 12 weeks of the study. Experimental and control subjects had blood activity measurements made for critical nutrients, including:

- Thiamine (B-1)
- Riboflavin (B-2)
- Niacin (B-3)
- Pantothenate (B-5)
- Pyridoxine (B-6)
- Cobalamin (B-12)
- Biotin

#### **Measurement of nutrients was done as follows:**

1. Blood was drawn from experimental and control subjects at the start, at 6 weeks, at 12 weeks, and 16 weeks.
2. The subjects consumed active or placebo supplements from the start of the experiment and daily for 12 successive weeks.
3. Consumption was then stopped and a measurement made after a ‘wash-out’ period. The baseline values determine the ‘background’ nutrient levels to which any changes in the study period are compared. Since diet remained constant and no other supplementation was permitted during the experiment, changes in blood activity for the subjects can be attributed to the supplements (with the controls providing information about random events during the study).

#### **The peak blood level is calculated as follows:**

The amount of nutrient taken up from the intestines and actively delivered to the blood stream is measured in the study. Nutrient absorption is calculated as follows: The increase of the nutrient is calculated by taking the **peak level less the baseline level** for that nutrient to approximately equal the increase in blood activity due to the supplementation (or placebo).

If the area under the curve for the increased blood activity of nutrient observed is integrated, the same results through a different analytic technique can be achieved.

#### **Concentration of nutrient taken up is calculated as follows:**

The **net increase in the nutrient multiplied by the fluid volume** of distribution for that nutrient

(36 liters for thiamine (B-1), riboflavin(B-2), cobalamin (B-12), and pantothenate (B-5);18 liters for pyridoxine (B-6) and biotin in accordance with their usual fluid phase distribution) equals the concentration increase for that nutrient (millimoles for thiamine, riboflavin, pyridoxine, and pantothenate; micromoles for cobalamin).

**Uptake total in milligrams (or micrograms) is calculated as follows:** The molar concentration multiplied by the molecular weight of the compound gives the total weight of that substance taken up by the body.

**Uptake total as percent of amount consumed is calculated as follows: The ratio of actively measured compound to supplement label value for the substance is the assimilation or percent of uptake documented by the study.**

This independent, placebo-controlled, prospective study shows, in summary, the superior and essentially complete uptake bioavailability of **PERQUE2 Life Guard**.

Further, the substantial and sustained increase in nutrients observed in these subjects suggests that otherwise healthy young adults are functioning well below their nutrient best. The substantial and sustained increase in nutrients observed at six weeks was confirmed at essentially the same level at 12 weeks. This data strongly suggests that many young, otherwise healthy-appearing young people are in nutrient deficit. The long-term consequences of this deficit even in the ‘young and healthy’ are increases in chronic ill health over the life span. Further studies are needed to document the extent to which sufficient intake of such nutrients over a life span can result in lower risk of chronic disease expression.

If this is true for young, healthy adults, what risks exist for all individuals that adequate supplementation can redress? While the study is too small to make global conclusions, it strongly suggests that prudent and sufficient supplementation is needed in order to act from a cautious perspective to maintain, restore, or enhance health and well-being.

**Verification of the amount consumed in the supplement is calculated as follows:**

Independent verification of the amounts of nutrients contained in the supplement was performed by Vitamin Diagnostics Laboratory. Their methodology deserves certain comments in light of the nutrients used in the **PERQUE2 Life Guard** product. While almost all of the nutrients were measured at and confirmed the label amounts, the assay for tocopherol (vitamin E) measured only the d-alpha tocopherol and specifically excluded the beta, gamma, and delta natural tocopherols, which account for almost 75% of the total tocopherol present in the product. In addition, the methods measure about half of the thiamine and riboflavin and about 60% of the pyridoxine, folate, pantothenate, biotin, magnesium, and zinc that are present. In addition, the B-

12 used in the **PERQUE2 Life Guard** (hydroxocobalamin), while fully active in the body, registers only about 25% in vitro in an assay standardized to measure cyanocobalamin.

The amounts of certain nutrients were insufficient, when diluted throughout the body, to be measurable above background by the methods available to this study. These nutrients include:

1. Magnesium (100 mg. or a theoretical increase of about 0.06 mmol/L increase). The increase above background from just two **PERQUE2 Life Guard** was not enough to register in the analytic methods used.
2. Calcium (50 mg. or a theoretical increase of about 0.03 mmol/L increase)
3. Zinc (25 mg. or a theoretical increase of about 0.02mmol/L increase).

Similarly, with the methods used, as noted in the study, the amounts of beta carotene (retinol equivalents), tocopherol, and ascorbate, while significant in terms of supplementation, were not detected with the analytic methods available for measuring circulating nutrient levels. This insensitivity of method explains why these nutrients were not measured to increase significantly during the study.

### **Lessons Learned**

The scientific power of pharmaceuticals can be applied to certain important questions of human nutrition. **PERQUE2 Life Guard** represents a new generation of supplement products: those that are of a higher purity, combined with advanced scientific methods to preserve activity, coupled with transporters to enhance uptake, and cell energizers to recharge the cell just at the time when energy-dependent nutrient uptake is taking place. The sum of all these variables achieves an appreciable enhancement of supplement activity over the best of other products. The magnitude of the **activity enhancement is a five-fold to ten-fold** increase in uptake of active nutrients in synergistic forms.

Compared to the mass merchandised supplements, the comparative increase in activity is even greater. For example, we calculate that for even the 20-30 nutrients included in the popular mass merchandised brands, like One-A-Day Plus, Theragram Advanced, and Centrum Ultra, it would take 80-100 of their tablets to deliver the nutrients contained in just two **PERQUE2 Life Guard** tablets. This does not include the 17-20 important energizing, alkalizing, heart-protecting, or blood sugar regulating nutrients in **PERQUE2 Life Guard** that are found only in **PERQUE2 Life Guard** and in none of the mass merchandised brands. **PERQUE** does not know of another comprehensive nutritive supplement that has subjected itself to the challenge of double-blind, placebo-controlled studies.

### **How and why does this disparity exist?**

Mass merchandised products are designed to do a specific, limited job. This job is to contain just enough nutrient to avoid deficiency diseases. This is what the RDAs and DVs are designed to do and nothing more. While worthwhile, this does not address the much larger amounts of nutrients needed to:

1. Keep up with the body's daily wear and tear demands,
2. Compensate for deficits in the diet,
3. Compensate for the distresses and toxins of high-tech living, or
4. Provide sufficient nutrients to stimulate repair and recovery from ill health.

The amounts needed to compensate for the four variables above are typically 10 to 100 or more times more than the amounts needed to avoid deficiency diseases. The rate at which nutrients are consumed and therefore the amounts of nutrients needed are much, much higher due to the above stresses than are required for a person whose diet is of high quality and who needs only to avoid deficiency illnesses.

Thus, the amounts in **PERQUE2 Life Guard** are what are needed to enhance, rebuild, or sustain health, which is so much more than what is needed to avoid deficiency ills.

### **Is the greater activity in PERQUE2 Life Guard important to the consumer?**

Since more is not necessarily better, is it known that the amounts of nutrients included in **PERQUE2 Life Guard** are beneficial? There are some 2,000 + peer-reviewed studies on one or more nutrients for various health or disease needs that have been reviewed by **PERQUE**. The synthesis of these independent studies is the basis for the amounts of nutrients in **PERQUE2 Life Guard**.

**PERQUE2 Life Guard** represents a new generation of supplements from several perspectives:

1. It is built entirely from active ingredients all fully disclosed on the label of the product.
2. The amounts are those needed to compensate for our stressful, toxic, nutrient depleted times.
  - By design, the super-active ingredients are combined and protected for full delivery to you over the entire shelf life of the product.
  - Biochemically advanced -- so advanced they are patent pending with fundamentally new technologies involved in the formulation and production of **PERQUE** products.