Feature summary

Natural Factors Riboflavin 5’-phosphate represents the next generation of nutritional supplements, providing 50 mg of highly bioavailable coenzymated vitamin B2 as riboflavin 5’-phosphate sodium (R5P) to help prevent riboflavin deficiency, alongside Farm Fresh Factors™, a bioactive blend of phytonutrients. This biocoenzymated supplement is ideal for anyone looking to upgrade from standard vitamin B2 to the most advanced vitamin B2 available.

Vitamin B2 is vital for energy metabolism, tissue formation, red blood cell and hormone synthesis, and to help maintain normal glucose and lipid (fat) metabolism. It is also needed to activate other B vitamins, including folate and vitamin B6, and to convert tryptophan to niacin (vitamin B3).

Research has shown that upper gastrointestinal tract problems and genetic variations can decrease the conversion of standard riboflavin into active R5P, while certain medications can compromise absorption and deplete vitamin B2.

This unique biocoenzymated formula features proprietary EnviroSimplex® technology, combining Farm Fresh Factors, an organic whole food blend of land and sea vegetables, with the coenzyme form of vitamin B2. The result is a synergistic phytochemical formula that delivers the most metabolically active nutrients to your cells. Ready-to-use R5P offers immediate and direct nutritional support.

How it works

Riboflavin is an essential nutrient needed to convert carbohydrates, fats, and protein into energy. Standard riboflavin requires conversion into riboflavin 5’-phosphate (R5P) before the body can use it. In people with genetic variations that compromise the absorption and use in B vitamins, riboflavin may be excreted before it can be used.

R5P is the active, coenzymated form of vitamin B2 that can promote essential metabolic reactions. R5P is converted into flavin mononucleotide (FMN) and flavin adenine dinucleotide (FAD) – active cofactors in most cellular enzymatic processes. It is vital for the synthesis, conversion, and recycling of niacin, folate, vitamin B6, and homocysteine, and is needed to produce hemoglobin, detoxification enzymes, and proteins; for essential fatty acid metabolism in the brain; iron absorption and use; and thyroid hormone regulation.

R5P has direct antioxidant properties and is a coenzyme for key antioxidant enzyme glutathione reductase, which helps protect tissues, especially the eye lens, against oxidative damage.

Vitamin B2 can also be depleted by stress, poor diet, certain prescription medications, alcohol, and smoking. Riboflavin deficiency results in painful red tongue with sore throat, chapped and fissured lips (cheilosis), and inflammation of the corners of the mouth. Due to interference with iron absorption, even mild-to-moderate riboflavin deficiency results in anemia.
Research

An estimated 10–15% of people worldwide are affected by genetic variations that compromise the absorption and use of standard riboflavin (Singigaglia-Coimbra et al., 2011). In one systematic review of 28,000 community dwelling older adults in developed Western countries, 31–41% had an intake of riboflavin below the estimated average requirement (EAR) (ter Borg et al., 2015).

Just a few days of poor intake can result in signs of riboflavin depletion, including increased DNA strand breaks, cellular stress and cell death, and decreased activity of glutathione reductase, a key antioxidant enzyme (Manthey et al., 2006; Werner et al., 2005).

Glutathione reductase is a key factor in protecting the lens of the eye from oxidative damage, meaning that riboflavin may play a role in supporting eye health. In the Blue Mountains Eye Study (a population-based cross-sectional study involving 2,900 people aged 49–97 years), a higher riboflavin intake was associated with a 50% reduction in the prevalence of nuclear cataracts after adjusting for other factors (Cumming et al., 2000).

Poor intake is also associated with anemia, as riboflavin is required for hemoglobin synthesis and the absorption and use of iron; some researchers have even suggested that “correcting inadequate riboflavin intake may be a priority in the prevention of anemia” (Shi et al., 2014).

In one study involving 123 women aged 19–25 with moderate riboflavin deficiency, eight weeks of supplementation with 2 or 4 mg of riboflavin led to a significant and dose-dependent improvement in riboflavin status, and a corresponding increase in hemoglobin status, compared to placebo. The greatest effects were seen in women with the lowest riboflavin status at the start of the study (Powers et al., 2011).

Riboflavin is needed for the conversion of other B vitamins, notably folate and vitamin B6, into their active forms, and is a co-factor in the metabolism of fat, protein, and carbohydrate (Porter et al., 2016). Genetic variations affecting a key enzyme, methyltetrahydrofolate reductase (MTHFR), may affect riboflavin status in people taking supplemental folic acid. Such variations are estimated to affect up to 67% of the population (Meshkin & Blum, 2007).

Poor riboflavin status and a specific genetic variation (the TT genotype of MTHFR) has been associated with high levels of homocysteine, a substance associated with cardiovascular disease and stroke (Moat et al., 2003). In people with this genetic variation, a daily dose of 1.6 mg of riboflavin for 12 weeks led to a 22–40% reduction in homocysteine levels (McNulty et al., 2006).

In another study, people with hyperhomocysteinemia caused by antiepileptic medications who took 75 mg of riboflavin, 400 mcg of folic acid, and 120 mg vitamin B6 daily had a 26% reduction in plasma total homocysteine (Apeland et al., 2005).

In a review of 11 clinical trials, five trials showed that riboflavin may help reduce the frequency of migraine headaches in adults, and four showed benefits for children and adolescents; riboflavin was well tolerated with few adverse effects (Thompson & Saluja, 2017).

Ingredients

Each capsule contains:

- Vitamin B2 (riboflavin 5’-phosphate sodium) .......................... 50 mg

Dosage

Recommended adult dose: 1 capsule daily or as directed by a health care practitioner.

Cautions

Keep out of the reach of children.

References

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