

# 3-PHOS-B

**3-PHOS-B is the *only* enteric preparation containing the active (phosphorylated) forms of the following essential B vitamins: B-1 (Thiamine Pyrophosphate), B-2 (Riboflavin-5'-Phosphate), and B-6 (Pyridoxal-5'-Phosphate).**

## WHAT ARE THE BENEFITS OF 3-PHOS-B?

- Enteric coating for optimal absorption
- Phosphorylated (active) forms of B-1, B-2 and B-6
- Thiamine Pyrophosphate (B-1) supports cardiovascular and immune system
- Riboflavin-5'-Phosphate (B-2) for energy production
- Pyridoxal-5'-Phosphate (B-6) for proper amino acid absorption and metabolism
- Highest quality nutrients

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Each enteric coated tablet of 3-PHOS-B contains the active forms of B-1 (Thiamine Pyrophosphate) 2 mg, B-2 (Riboflavin-5'-Phosphate) 3 mg, and B-6 (Pyridoxal-5'-Phosphate) 20 mg.

**DIRECTIONS:** Take one or two tablets twice daily (b.i.d.), 45–60 minutes prior to meals, or at bedtime, or as recommended by a health-care professional. 3-PHOS-B contains the active co-enzymatic forms of B-1, B-2, and B-6 for maximum utilization of these vitamins. This enteric preparation will dissolve in the intestinal tract, where it will be best absorbed.

## WHAT IS VITAMIN B-1?

Thiamine Pyrophosphate is essential for almost every cellular reaction in the body and is necessary for proper development and growth. Thiamine is important for cardiovascular health, proper nerve function, blood production, and immune system regulation. In addition, Thiamine plays a role in alcohol metabolism, skin and hair growth, and the synthesis of acetylcholine (a neurotransmitter involved in memory and other cognitive functions). Thiamine is not stored well in the body and must be obtained daily from foods or supplementation. Heat easily destroys Thiamine, and a considerable amount is lost during cooking. In addition, foods containing sulfates destroy Thiamine and alcohol reduces the absorption of Thiamine.

## DEFICIENCIES AND SYMPTOMS

- The brain and nervous system are affected. Symptoms may include poor memory and confusion, irritability, depression, reduced attention span, and difficulty maintaining concentration.
- Tingling and numbing of the extremities, and painful calf muscles.
- The heart requires Thiamine to function properly.
- Because alcohol reduces absorption of Thiamine, alcoholics and binge drinkers are prone to B-1 deficiency. This can lead to mental confusion, altered balance, and potential brain damage.
- Athletes with strenuous activities require additional Thiamine, and when supplemented (along with B-2 and B-6), they have less fatigue and more energy.

## WHAT IS VITAMIN B-2?

Riboflavin-5'-Phosphate is essential for energy production, maintenance of the nervous system, carbohydrate metabolism, and Glutathione synthesis. Riboflavin is involved in ATP production, the maintenance of healthy skin, eyes, and mucous membranes, and it has an important role in fetal development. Riboflavin also converts B-6 and Folic Acid into their active co-enzymatic forms. Because light destroys Riboflavin, milk purchased in plastic containers has lost some of this vitamin.

## DEFICIENCIES AND SYMPTOMS

- Eye irritation and sensitivity to light (photophobia); fissures around the mouth, nose and ears.
- Because Riboflavin helps convert B-6 to the active form, a B-2 deficiency may lead to a B-6 deficiency.
- Older persons tend to be deficient in B-2.

## OTHER BENEFITS

- Supplementation with B-2 may help prevent glaucoma, and it is recommended along with B-1, B-6, Vitamin C, Vitamin E, and Alpha Lipoic Acid for care of the eyes.
- Research suggests that Riboflavin supplementation may benefit those suffering from migraines.
- Athletes with high energy expenditures have an increased need for B-2 (along with B-1 and B-6).

## WHAT IS VITAMIN B-6?

Pyridoxal-5'-Phosphate (P-5'-P) is the active, co-enzymatic form of Vitamin B-6. Most B-6 supplements are Pyridoxine, which must be converted in the liver to Pyridoxal-5'-Phosphate for it to be properly utilized. Many individuals do not convert sufficient amounts of this important B vitamin for proper metabolism and functions. This may result in a B-6 deficiency and many health problems. Pyridoxal-5'-Phosphate is necessary for amino acid absorption and metabolism and it is involved in the synthesis and catabolism of all protein. It is especially important in the metabolism of Tryptophan, Tyrosine, Glycine, Glutamic Acid, Cysteine, Cystine, and Methionine. Insufficient P-5'-P may cause abnormal metabolites such as Homocysteine (which is associated with heart attacks and strokes). Pyridoxal-5'-Phosphate is utilized by over 60 enzymes, and it is also essential for fat and carbohydrate metabolism.

## DEFICIENCIES AND SYMPTOMS

- Numbness and tingling of limbs, depression, nervousness, cracks around mouth and eyes, water retention, fatigue. Headache, nausea, acne, and inflammation of the gums are also symptoms.
- Low levels of P-5'-P have also been noted with low plasma levels of Tyrosine and Tryptophan, which correlate to deficiencies in serotonin and catecholamine neurotransmitters. Decreased levels of these neurotransmitters are associated with depression, anxiety, stress, and sleep disturbances.
- Tobacco, alcohol, and many drugs (such as antibiotics), can contribute to a B-6 deficiency.
- Carpal tunnel syndrome is associated with a deficiency of B-6.

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