Niadoxene Select™ contains a clinically relevant amount of pure niacinamide (vitamin B3) plus safe, meaningful levels of vitamin B6 in its biologically active form, pyridoxal-5'-phosphate (P-5-P). The two nutrients work together in a variety of ways, e.g. promoting healthy tryptophan metabolism and helping to optimize kynurenine pathway function in response to stress and inflammation.

NIACINAMIDE is the amide form of niacin and one of two principle forms of vitamin B3. Niacin can be synthesized from the amino acid tryptophan via the kynurenine pathway but due to high demand, notably in response to inflammation, additional supplies from dietary sources are required. Niacin and niacinamide are also known as nicotinic acid and nicotinamide—thes terms are interchangeable. Both of these B3 compounds are precursors of the important coenzyme nicotinamide adenine dinucleotide (NAD), used in hundreds of redox reactions throughout the body as well as for ATP synthesis and ADP-ribose transfer reactions. NAD and its phosphorylated form, NADP, are needed for energy metabolism, mitochondrial function, calcium homeostasis, free radical generation/quenching, gene expression and immunological function as well as various aging processes. Considering this comprehensive list, it follows that maintaining physiological or therapeutic levels of vitamin B3 will support health in many ways. Niadoxene Select™ is designed to help meet this need.

One of the primary uses of supplemental niacinamide is to help support healthy joint and cartilage structure/function. This nutrient was first reported to benefit osteoarthritis in the mid-20th century and ongoing research continues to support its use. For example, a recent double-blind, placebo-controlled study from the National Institutes of Health reported a 29% improvement in global arthritis impact, significant increases in joint mobility and a 13% reduction in the need for standard anti-inflammatory medications in patients taking niacinamide supplements.

Niacinamide functions as an antioxidant, may help to suppress the inflammatory cascade by modifying gene expression and has been shown to inhibit PARS, a repair enzyme activated by oxidation-induced DNA strand breaks. PARS activation initiates an energy-depleting cycle that drains cells of niacin-dependent NAD and ATP, often resulting in metabolic dysfunction.

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Another well-known use of niacinamide is to help support skin health. In 1937 vitamin B3 deficiency was found to be the cause of pellagra, a disease marked by red dermal lesions and a glossy tongue. Since that time, vitamin B3 has been studied for its ability to benefit a variety of dermatological conditions including actinic keratosis and cutaneous hyperpigmentation. Human studies suggest that niacinamide may help protect the skin from sun damage by significantly reducing UV radiation-induced immunosuppression. This result has been reported at dosing levels of both 500 mg and 1500 mg per day.

As mentioned earlier, niacinamide is an end product of tryptophan metabolism via the kynurenine pathway which is upregulated by stress, inflammation and immune activation. Via a different pathway, tryptophan is the amino acid precursor of the calming neurotransmitter serotonin, meaning serotonin synthesis is diminished when the kyurenine pathway is upregulated. The need to upregulate this pathway for the purpose of producing niacin-dependent coenzymes is decreased in the presence of sufficient vitamin B3, one mechanism by which niacinamide enables an increase in healthy neurotransmitter synthesis and activity. Niacinamide also has been shown to suppress the activity of inflammatory cytokines associated with kynurenine metabolism, thereby participating in a positive feedback loop that helps minimize inflammation and its ill effects throughout the body.

In addition to studies on its ability to help support a healthy response to stress and inflammation, research suggests niacinamide may help to support mental health and promote a calm, relaxed state of mind. While niacin deficiency has been associated with a variety of neuropsychiatric symptoms such as memory problems, fatigue, sleep disturbances and mood disorders, adequate or therapeutic levels have been associated with helping to preserve and enhance neurocognitive function. An additional benefit for niacin supplementation has been suggested for individuals who take anti-depressant medications and have low dietary intakes of this critical nutrient.

VITAMIN B6 (as P-5-P) is an essential nutrient that must be obtained from food or supplements. Vitamin B6 is required for tryptophan metabolism, serotonin synthesis, proper kynurenine pathway function and other niacin-dependent activities. Niadoxene Select™ provides well absorbed vitamin B6 in its biologically active form, pyridoxal-5’-phosphate, to help potentiate niacinamide function and support optimum clinical results.

REFERENCES


* These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure or prevent any disease.