N-Acetyl-Cysteine

AMINO ACID PRECURSOR TO THE POTENT ANTIOXIDANT GLUTATHIONE

120 VEGETARIAN CAPSULES | NPN80049019 | NAC120-CN

Designs for Health offers **N-Acetyl-Cysteine** in 900 mg per one capsule serving. N-Acetyl-Cysteine (NAC) is a potent amino acid precursor to glutathione (GSH), one of the body's most powerful intracellular antioxidants, which supports optimal phase II hepatic biotransformation (liver detoxification). It is the most stable nutritional supplement form of the amino acid L-cysteine. NAC also plays a critical role in supporting lung health for respiration, is used for rapid muscle recovery post-workout, and as a cytoprotectant against a vast array of pro-oxidative insults and inflammatory etiopathology. Furthermore, due to the presence of a sulfhydryl group (-SH), NAC is beneficial for protection against exposure to heavy metals and other harmful toxicants. NAC is prominently found in Allium plant species, especially onions, and is more bioavailable than supplemental GSH itself.[1]

LIVER DETOXIFICATION

NAC is a potent amino acid that increases GSH levels for not only liver detoxification of heavy metals and other xenobiotics but also for systemic antioxidant support to protect against oxidative stress and free radical accumulation. NAC has been shown in research to protect the liver from the damaging effects of excessive alcohol use and from acetaminophen poisoning.[2] Supplementation of NAC prevents this toxicity by inhibiting acetaldehyde build-up and also prevents hepatocyte necrosis from acetaminophen poisoning by raising glutathione levels and preventing severe oxidative damage.[2] L-Cysteine has a high affinity for mercury and other heavy metals such as copper, lead, and cadmium, thus can bind to them and aid in their removal from the body.[2,3] When GSH levels are low, the liver is vulnerable to damage from these toxins.

LUNG HEALTH

N-Acetyl Cysteine works to break up the sulfide bonds that are responsible for thickening mucus, thus, by thinning mucus viscosity, NAC improves respiration patterns and supports healthy lung function.[1] In Europe, NAC is used as a mucolytic drug, as it has been shown to improve symptoms and decrease the frequency of chronic bronchitis (CB) aggravations.[2] A recent review found evidence to support NAC as a mucoactive agent in the symptomatic relief of cough by aiding in mucus elimination.[9] In a meta-analysis examining the influence of NAC on chronic bronchitis and chronic obstructive pulmonary disease (COPD) exacerbations, the results showed that NAC was well-tolerated by patients treated with NAC and had significantly fewer COPD or CB aggravations, and its protective effect was more evident in those with no signs of airway obstruction.[10] A review investigating the use of NAC in treating biofilm-related respiratory infections, such as CB, COPD, and rhinosinusitis, found NAC to effectively inhibit biofilm formation, disrupt pre-existing mature and infant biofilms, and reduce bacterial growth within biofilms.[11] The researchers state that biofilm formation is responsible for many acute and chronic pulmonary events and that there is a need for non-antibiotic therapy as many biofilm strains are resistant to conventional antibiotics.[11] Animal studies have shown that NAC has a significant antioxidative effect on airway hyper-responsiveness (AHR), which is caused by a consistent presence of pro-inflammatory mediators and immune cells in the airways, and steroid-resistant inflammation in acute asthma.[2]

BRAIN & CENTRAL NERVOUS SYSTEM HEALTH

NAC potentially has beneficial effects in instances of stroke and traumatic brain injuries (TBIs), which are shown to be mediated by its ability to protect against oxidative stress and free radicals, and pro-inflammatory mediators.[15] After 7 days of NAC treatment, soldiers who experienced TBIs after blast exposure had significantly improved symptoms resolution compared to the placebo group.[15] Relating to the effect NAC has on neuropsychiatric health, in a pilot study, six months of NAC supplementation increased functional connectivity within the cingulate cortex in early psychosis patients compared to controls, suggesting that increased brain GSH via NAC supplementation has a positive effect on functional connectivity within the brain and may be an effective alternative to antipsychotic medications.[16] Because NAC modulates the amino acid glutamate, a systematic review investigated the effects of NAC in the treatment of obsessive compulsive disorder (OCD) which showed that 2,400 - 3,000 mg/day for an average of 12 weeks demonstrated positive results in reducing the severity of OCD symptoms with minimal adverse effects and good tolerability.[17]

Medicinal Ingredients (per capsule):

N-acetyl-L-cysteine.....900 mg

Non-Medicinal Ingredients: Hypromellose, magnesium stearate (vegetable source), stearic acid (vegetable source), microcrystalline cellulose. **Recommended Dose:** Adults: Take 2 capsules per day, or as directed by your health care practitioner. Do not use beyond 24 weeks.

REFERENCES
For a list of references cited in this document, please visit: https://www.designsforhealth.com/techsheet-references/N_Acetyl_L_Cysteine_References.pdf