

References for NAC (N-Acetyl Cysteine)

Flu symptoms and severity:

Taking 600 mg of NAC twice daily during flu season (October – April) significantly reduced symptoms in people who contracted the flu virus. Among individuals taking NAC who became infected; only 25% became symptomatic, versus 79% in the placebo group. :

<http://www.ncbi.nlm.nih.gov/pubmed/9230243>

Chronic Bronchitis and COPD

NAC may decrease the frequency of flare-ups of Chronic Bronchitis and COPD An analysis of eight clinical trials found that 400 mg to 600 mg of NAC taken daily or 3 to 6 months significantly reduced exacerbations of chronic bronchitis <http://www.ncbi.nlm.nih.gov/pubmed/10743980?dopt=Abstract>

In another clinical study, COPD patients who received 600 mg of NAC in addition to standard treatment medications daily for six months had significantly fewer flare-ups than those who received only medication. <http://www.karger.com/Article/Abstract/29447>

Nasal congestion due to colds or sinusitis:

NAC has been shown in laboratory studies to thin nasal mucus when applied directly to mucus samples <http://archotol.jamanetwork.com/article.aspx?articleid=508953> and to increase nasal flow when inhaled in combination with a decongestant. <http://www.ncbi.nlm.nih.gov/pubmed/8740084> However, there is little clinical evidence that oral supplementation reduces the amount or thickness of nasal mucus.

A preliminary study in Iran suggested a beneficial effect but lacked details about dosage.

<http://www.omicsonline.org/open-access/the-effects-of-nacetyl-cysteine-on-nasal-mucociliary-clearance-in-healthy-volunteers-a-randomized-doubleblind-and-placebocontrolled-study-2161-119X.1000182.php?aid=36315>

A study to have been conducted in Canada was either not completed or not published.

<https://clinicaltrials.gov/ct2/show/study/NCT00866866>

Sjogren's syndrome

A small double-blind clinical trial in people with Sjogren's syndrome found that 200 mg taken 3 times per day improved eye-related symptoms such as soreness and irritation.

<http://www.ncbi.nlm.nih.gov/pubmed/3296153>

Renal Failure

In patients with end-stage renal failure, 600 mg of NAC twice daily reduced the incidence of cardiovascular events, including stroke and heart attack, by 40% compared to placebo, although it did not reduce overall mortality. <http://www.ncbi.nlm.nih.gov/pubmed/12600912>

Homocysteine levels

High levels of homocysteine are associated with a higher risk of heart disease, although it is not necessarily a causative factor. In a small clinical study, effervescent tablets containing 2,000 mg of NAC dissolved in water and taken twice daily for two weeks lowered homocysteine levels by 45% compared to placebo. <http://www.ncbi.nlm.nih.gov/pubmed/8929261>

Schizophrenia

There is some evidence that NAC may help reduce the severity of symptoms in certain mental health disorders. One randomized, double blind clinical trial in people with schizophrenia found that 1,000 mg of NAC taken twice daily in addition to maintenance medications significantly improved scores on symptom scales and decreased restlessness compared to the medications plus placebo.

<http://www.ncbi.nlm.nih.gov/pubmed/18436195>

A more recent study of patients with chronic schizophrenia taking risperidone found that NAC supplementation (up to 2,000 mg per day) resulted in significantly improved scores on tests of negative symptoms compared to risperidone plus a placebo. <http://www.ncbi.nlm.nih.gov/pubmed/24201233>

Compulsive Behavior: Excoriation (skin picking) Disorder

Several small but well-controlled clinical studies (all by the same researcher) indicate NAC may also be helpful in reducing **compulsive behavior** – possibly by affecting glutamate concentrations in the nucleus accumbens of the brain. In a study involving adults with **excoriation (skin picking) disorder**, 1,200 to 3,000 mg of NAC per day or placebo was taken for 12 weeks (the dose increased to 2,400 mg at week 3 and to 3,000 mg at week 6) along with existing medications. Compared to placebo, NAC treatment was associated with significant improvements: 47% of the NAC group was “much or very much” improved versus 19% of the placebo group, and scores on an obsessive compulsive excoriation scale decreased from 18.9 to 11.5 in the NAC group, versus 17.9 to 14.1 in the placebo group. However, quality of life scores did not change significantly for either group. The researchers concluded that benefits appear to be “primarily in the reduction of urges or cravings to pick rather than the actual behavior” suggesting that NAC might be more effective in people who pick automatically or with little conscious awareness.

<http://archpsyc.jamanetwork.com/article.aspx?articleid=2500041>

Trichotillomania

In men and women with **trichotillomania** (anxiety-related compulsive hair-pulling) 1,200 mg to 2,400 mg of NAC taken daily for 12 weeks significantly reduced hair-pulling symptoms compared to placebo.

<http://www.ncbi.nlm.nih.gov/pubmed/17445781>

Pathological Gambling

Another study found daily supplementation with NAC (about 1,500 mg per day) improved measures of obsessive behavior in people with **pathological gambling**.

<http://www.ncbi.nlm.nih.gov/pubmed/17445781>

Progressive myoclonus epilepsy

High doses of NAC were reported to reduce symptoms in four patients with **progressive myoclonus epilepsy**. In the study, the patients were given vitamin E, selenium, zinc and magnesium for six months, which resulted in improvements in awareness and speech. They were also given 4,000 to 6,000 mg of NAC daily, plus magnesium, for over two years. During treatment with NAC, myoclonus (involuntary jerking) was decreased. <http://www.ncbi.nlm.nih.gov/pubmed/8909441?dopt=Abstract>