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Life Extension Update Exclusive

**Alternate day calorie restriction improves asthma-related symptoms**

A report published in the March 1, 2007 issue of the journal *Free Radical Biology & Medicine* revealed the findings of researchers at Louisiana State University, the National Institute on Aging, and Stanford University that practicing calorie restriction every other day improves symptoms and decreases markers of inflammation and oxidative stress in overweight asthmatics. Obesity is a risk factor for asthma, however, many asthmatics find it difficult to adhere to diets that decrease the intake of calories on a daily basis.

Two men were assigned to diets restricted to 380 calories and eight women were assigned to 320 calories on alternate days for two months. On the remaining days, the participants were allowed to consume as much food as they liked. Blood samples collected before the diet was initiated and at two weeks, four weeks, and eight weeks were analyzed for lipids, glucose, insulin, C-reactive protein, and markers of inflammation and oxidative stress. Peak expiratory flow, a measure of airway function, was assessed daily. Two questionnaires concerning asthma symptoms and quality of life were administered at the beginning and end of the study, and an additional asthma symptom questionnaire was completed by the participants at the study's baseline and every two weeks thereafter.

The nine participants who completed the study lost an average of 8 percent of their weight by the end of the eight week course. Within two weeks after beginning the diets, asthma symptoms, quality of life, and peak expiratory flow improved significantly and remained improved throughout the study. Serum cholesterol, triglycerides, markers of oxidative stress, and markers of inflammation including serum tumor necrosis factor-alpha all significantly decreased compared to their pre-diet levels, while uric acid, which has an antioxidant effect, increased.

The authors propose two mechanisms for the effects associated with alternate day calorie restriction observed in this study. The first is a reduction in cellular oxygen free radical production associated with a decrease in overall calorie intake, resulting in lower levels of oxidatively modified proteins and lipid peroxidation products in the blood. The second mechanism is an upregulation of antioxidant systems in response to the mild stress imposed by calorie restriction.

"These findings demonstrate rapid and sustained beneficial effects of alternate day calorie restriction on the underlying disease process in subjects with asthma, suggesting a novel approach for therapeutic intervention in this disorder," the authors conclude.

Health Concern

**Asthma**

The incidence of asthma cases has surged in recent years, although researchers aren't sure exactly why. According to some

studies, up to 5 percent of the US population is affected by asthma, with half of these cases developing before age 10 (Kasper DL et al 2005). Asthma attacks can be triggered by allergies and environmental irritants. Scientists have also discovered links between asthma and other diseases and conditions, including gastroesophageal reflux disease (GERD) and obesity (Flaherman V et al 2006).

In recent years, researchers have learned a great deal about asthma and natural methods to inhibit the underlying inflammatory cascade that causes so much misery. Life Extension has also uncovered evidence that a common herbal extract, butterbur, is a highly effective asthma therapy. Finally, oxidative stress, which can wreak havoc with cells, has been linked to asthma, thus antioxidants have a definite role in therapy.

Scientists are also beginning to better understand the interaction between allergies, asthma, and oxidative stress. Oxidative stress occurs when highly reactive molecules, known as free radicals, interact with molecules within the body, especially DNA and mitochondrial membranes. Experimental evidence suggests that some pollutants, such as vehicle exhaust, may produce oxidative stress in the bronchial tubes (Gilmour MI et al 2006). Studies suggest that dietary supplementation with precursors of glutathione (an internal antioxidant), such as cysteine and alpha-lipoic acid, can enhance the pulmonary defenses, thus countering oxidative stress (Bridgeman MM et al 1991).

[http://www.lef.org/protocols/respiratory/asthma\\_01.htm](http://www.lef.org/protocols/respiratory/asthma_01.htm)

## Featured Products

### Butterbur Extract with Standardized Rosmarinic Acid

For nearly three decades, doctors in Germany have prescribed a standardized extract of the herb butterbur to their patients suffering from nasal discomfort and its related problems. Butterbur's main active ingredient is petasin, a phytochemical that may reduce spasms in smooth muscle, thus relaxing swollen nasal membranes.

Butterbur Extract with Standardized Rosmarinic Acid contains a patented butterbur extract. State of the art technology allows for standardization of butterbur's key active ingredients while ensuring that the extract is free of any undesirable compounds.

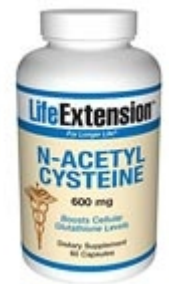
<http://www.lef.org/newshop/items/item00884.html>



### N-Acetyl Cysteine Capsules

N-acetyl cysteine is the more efficiently absorbed and used form of the amino acid, L-cysteine. L-cysteine plays a role in the sulfation cycle, acting as a sulfur donor in phase II detoxification and as a methyl donor in the conversion of homocysteine to methionine. N-acetyl cysteine has antioxidant properties, and helps to maintain healthy levels of the liver's natural detoxifier, glutathione. In addition, N-acetyl cysteine has been used to break up pulmonary and bronchial mucus.

<http://www.lef.org/newshop/items/item00215.html>



## What's Hot

### Low dose aspirin associated with reduced asthma risk

Low dose aspirin every other day reduced the risk of developing asthma in a large scale clinical trial, concluded Tobias Kurth, MD, ScD of Brigham and Women's Hospital in Boston and colleagues after examining data from the double-blind Physician's Health Study. Asthma is a chronic inflammatory disease that causes breathing difficulties which is estimated to affect over 20 million Americans. Dr Kurth and his coauthors reported the finding in the January 15, 2007 issue of the American Thoracic Society journal *American Journal of Respiratory and Critical Care Medicine*.

[http://www.lef.org/whatshot/2007\\_01.htm#ldaa](http://www.lef.org/whatshot/2007_01.htm#ldaa)

If you have questions or comments concerning this issue or past issues of Life Extension Update, send them to [ddye@lifeextension.com](mailto:ddye@lifeextension.com) or call 954 202 7716.

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