Soy supplements don't improve asthma

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Children with asthma use inhalers to relieve some of their symptoms, which include coughing, wheezing, chest tightness and shortness of breath. Credit: Tradimus / Wikimedia commons / CC BY-SA 3.0

Despite previous findings suggesting a link between soy intake and decreased asthma severity, a new study from Northwestern Medicine and the American Lung Association Asthma Clinical Research Network shows soy supplements do not improve lung function for patients with asthma.

The paper, published May 26 in the *Journal of the American Medical Association* (*JAMA*), highlights the importance of focusing on overall health to manage disease, rather than individual strategies such as increasing soy consumption, according to the authors.

"You are what you eat, but that's a whole constellation of foods, not just a single food or a single component of a food," said first author Dr. Lewis Smith, professor of medicine at Northwestern University Feinberg School of Medicine. "Instead of focusing on supplements, we should be taking a more holistic approach."

Nutritional supplements, a multi-billion dollar industry, are widely used to treat and prevent disease and to optimize health, though there's not always data proving their effectiveness. There is, however, evidence that supplements for soy isoflavone—plant-based compounds in food such as tofu and edamame—protect against hot flashes during menopause and osteoporosis.

While analyzing the results of a study on diet and asthma, Smith and colleagues previously noticed that asthmatics taking soy isoflavone had better lung functioning than their counterparts. They confirmed the observation in a different group of patients, and followed up in the laboratory: In cell cultures, they saw that an isoflavone called genistein reduces eosinophil inflammation, a key factor in asthma.

"If you look at people who consume more soy products, mostly in Japan and parts of China, they actually have less asthma," said Smith, also a professor of preventive medicine at Feinberg. "That could be due to many different factors, but there was enough epidemiological and biological evidence data to support looking at this association."

The new study explored the effects of soy in 386 adults and children aged 12 or older with poorly controlled asthma. All were taking

medicine to treat their asthma—either corticosteroids or leukotriene modifiers—but none were consuming soy. In the randomized, double-blind study, half of the participants took a soy isoflavone supplement twice daily for six months, and the other half took a placebo.

"We found that the supplement, though able to increase blood levels of the key soy isoflavone genistein, did not improve lung function, symptoms or measures of inflammation in these individuals," Smith said.

Why didn't the soy-asthma link in previous studies translate to this one? Smith said other factors may have been at play, such as diet and lifestyle patterns, like eating less meat or exercising frequently. And though genistein reduced inflammation in cell cultures, in the human body additional cells may nullify that benefit.

"This study highlights why it is so important to perform well-designed, placebo-controlled studies when associations are reported between specific nutrients and disease outcomes," Smith said.

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