

# Obesity does not worsen asthma, but may reduce response to medications

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Being overweight or obese does not make asthma worse in patients with mild and moderate forms of the disease, according to a study by National Jewish Health researchers, although it may reduce the response to medications.

"With both [asthma](#) and obesity on the rise in recent years, there has been much interest in the possible link between these two conditions," said lead author E. Rand Sutherland, Associate Professor of Medicine at National Jewish Health. "By studying a well characterized group of patients with asthma, we were able to determine that increased weight is not associated with more severe asthma. Although benefits can be obtained with weight loss in other diseases, these findings suggest that an improvement in asthma may not necessarily result from weight loss."

"The findings also suggest that patients and physicians should be aware that obese asthma patients may not respond well to corticosteroids, the most successful controller medication for asthma, which can affect dosing decisions and choices of possible alternatives to [steroids](#)."

Previous studies have suggested that obesity predisposes people to developing asthma, to suffer more severe asthma symptoms, and to respond less to medications. However, the exact mechanism for these links has been unclear, and the studies have generally relied upon patients' reports of their diagnosis and symptoms rather than using more precise tools to characterize patients.

Dr. Sutherland and his colleagues decided to examine the issue in a well characterized group of 1,256 patients who had participated in NIH-sponsored studies. They divided them into patients with a [body mass index](#) of less than 25 (lean) and greater than or equal to 25 (overweight and obese). They found that lean asthma patients had slightly greater forced expiratory volume in one

second, or FEV1 (3.05 liters vs 2.91 liters), and slightly greater ratio of FEV1 to forced vital capacity (83.5% vs. 82.4%), both common measures of [lung function](#). They also found slightly greater use of rescue inhalers among overweight patients (1.2 puffs per day vs. 1.1 puffs per day) and slightly higher scores asthma-related quality of life questionnaires (5.77 vs. 5.59).

"These differences were small and are unlikely to be of any real clinical significance," said Dr. Sutherland.

Response to medications, however, did show an effect of increased weight. Among a subgroup of 183 people, lean patients taking inhaled corticosteroids alone showed a 55% greater reduction in exhaled nitric oxide, a measure of inflammation. Lean patients taking a combination inhaled steroid and long-acting beta agonist increased their FEV1 by 80 more milliliters. There were no differences, however, between these [patients](#) in the number of asthma exacerbations.

"The data suggest overweight and obese people respond less well to controller medications for asthma than do their lean counterparts," said Dr. Sutherland. "These data come from already-completed studies designed to answer other questions, however, and ongoing studies are being conducted to more definitively determine the effect of increased weight on treatment response in asthma."

Source: National Jewish Medical and Research Center

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