Lighten the asthma load

Associate Professor Ian Charlton
Member, GP Asthma Group,
National Asthma Council Australia

The obesity epidemic is sweeping the world as people eat more and exercise less. But why does the connection between asthma and obesity matter?

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It's not surprising that obesity has a profound affect on asthma. This was dramatically illustrated to me by a patient who reduced his weight from 130 kg to 84 kg over eight months thanks to a strict diet. At 130 kg, he had required high doses of inhaled steroids to maintain his lung function at 80% of predicted; following his dramatic weight loss his lung function improved to 110% of predicted and he all but stopped his medications.

A study from Brisbane examining 2911 children aged 5–14 years found a strong association between asthma and obesity.[1] Studies conducted on 1971 white adults aged 17–73 years at the Woolcock Institute of Medical Research in Sydney found an increase in respiratory symptoms amongst obese asthma patients, but no increase in atopy or bronchial hyperresponsiveness.[2] As part of the same study, 5993 Caucasian children aged 7–12 were also examined and it was found that higher body mass index is a risk factor for atopy, wheeze and cough in girls but not boys.[3]

Other studies have found obesity is associated with reduced lung volume, which is linked with airway narrowing.[4] In males (but not females), reduced lung volume alone did not account for the greater than expected airway narrowing. To date the mechanisms causing airway narrowing and sex differences in obesity are unknown.

German studies have found a similar relationship between asthma and obesity but not atopy and obesity. The authors concluded that mechanical and inflammatory substances rather than allergic eosinophilia might be at the root of the association.[5]

More recently, research has highlighted the increased prevalence of inflammatory mediators associated with obesity, and it has been proposed that these substances may contribute to airway inflammation and the increase incidence and severity of asthma.[6]

Other authors have raised the possibility that the shortness of breath and wheeze associated with obesity is in fact not true asthma but a condition related to the mechanical disadvantage that obesity imposes on the lungs.[4]

There is little dispute that losing weight greatly improves lung function symptoms and exercise tolerance.[7] It also has a major impact on sleep apnoea and nasal performance, which are often associated with asthma.

Measures to improve lifestyle and reduce weight in obese patients through increased activity and decreased eating are likely to be more productive than increasing medications. One of the best forms of exercise for asthma patients is swimming; we mightn't understand why it works so well, but a string of Olympic swimmers with asthma can testify to its benefits.

Getting it to happen – now there's the challenge.

For information on asthma diagnosis and management visit the National Asthma Council Australia website at www.nationalasthma.org.au. ♦

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