

RESEARCH NEWS

Corticosteroids for asthma may suppress growth in children in first year of treatment, researchers say

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Children with persistent asthma who are treated with daily inhaled corticosteroids may grow half a centimetre less during the first year of treatment, say two systematic reviews published in the Cochrane Library.^{1 2}

“But this effect is less pronounced in subsequent years, is not cumulative, and seems minor compared to the known benefits of the drugs for controlling asthma and ensuring full lung growth,” said the lead author of one of the reviews, Linjie Zhang, of the Federal University of Rio Grande in Brazil.

The first systematic review included 25 trials involving 8471 children with mild to moderate persistent asthma, of which 5128 were treated with inhaled corticosteroids and the remainder with placebo or non-steroidal drugs. Six drugs (beclomethasone, budesonide, ciclesonide, flunisolide, fluticasone, and mometasone) were given at low or medium daily doses during a period of three months to 4-6 years. Most trials were blinded, and over half had dropout rates of over 20%.

The average growth rate was around 6-9 cm in control groups, and this reduced by about 0.5 cm in treatment groups during a one year treatment period. Subgroup analysis showed a statistical difference between the six drugs, but the authors said that any conclusions about the superiority of one drug over another needed to be confirmed by further trials that directly compared them.

A second systematic review looked at data from 22 trials in which children with mild to moderate asthma were treated with low or medium doses of inhaled corticosteroids. However, only four trials, involving 728 children, examined the effects on growth over a year. In these trials the researchers found that a

lower dose improved growth by a quarter of a centimetre (5.74 cm a year, compared with 5.94 cm a year on the lower dose).

The researchers called for more long term trials and ones comparing different doses, particularly in children with more severe asthma who need higher doses of inhaled corticosteroids.

Francine Ducharme, of the Department of Paediatrics at the University of Montreal in Canada and an author on both reviews, said it was a matter of concern that only 14% of the trials they had looked at had monitored growth in a systematic way for over a year. She said, “We recommend that the minimal effective dose be used in children with asthma until further data on doses becomes available. Growth should be carefully documented in all children treated with inhaled corticosteroids, as well in all future trials testing inhaled corticosteroids in children.”



- 1 Zhang L, Prietsch SOM, Ducharme FM. Inhaled corticosteroids in children with persistent asthma: effects on growth. *Cochrane Database Syst Rev* 2014;7:CD009471. <http://doi.wiley.com/10.1002/14651858.CD009471.pub2>.
- 2 Pruteanu AI, Chauhan BF, Zhang L, Prietsch SOM, Ducharme FM. Inhaled corticosteroids in children with persistent asthma: dose response effects on growth. *Cochrane Database Syst Rev* 2014;7:CD009878. <http://doi.wiley.com/10.1002/14651858.CD009878.pub2>.

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