

## Utility of bronchodilator response for asthma diagnosis in Latino preschoolers.

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### Abstract

#### BACKGROUND:

Asthma diagnosis in preschoolers is mostly based on clinical evidence, but a bronchodilator response could be used to help confirm the diagnosis. The objective of this study is to evaluate the utility of bronchodilator response for asthma diagnosis in preschoolers by using spirometry standardised for this specific age group.

#### METHODS:

A standardised spirometry was performed before and after 200 mcg of salbutamol in 64 asthmatics and 32 healthy control preschoolers in a case-control design study.

#### RESULTS:

The mean age of the population was 4.1 years (3-5.9 years) and 60% were females. Almost 95% of asthmatics and controls could perform an acceptable spirometry, but more asthmatics than controls reached forced expiratory volume in one second ( $FEV_1$ ) (57% vs. 23%,  $p=0.033$ ), independent of age. Basal flows and  $FEV_1$  were significantly lower in asthmatics than in controls, but no difference was found between groups in forced vital capacity (FVC) and FEV in 0.5s ( $FEV_{0.5}$ ). Using receiver operating characteristic (ROC) curves, the variable with higher power to discriminate asthmatics from healthy controls was a bronchodilator response (% of change from basal above the coefficient of repeatability) of 25% in forced expiratory flow between 25% and 75% ( $FEF_{25-75}$ ) with 41% sensitivity, 80% specificity. The higher positive likelihood ratio for asthma equalled three for a bronchodilator response of 11% in  $FEV_{0.5}$  (sensitivity 30%, specificity 90%).

#### CONCLUSIONS:

In this sample of Chilean preschoolers, spirometry had a very high performance and bronchodilator response was very specific but had low sensitivity to confirm asthma diagnosis.