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Title: Effect of patient age on response to nebulised salbutamol or ipratropium bromide

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Body: In order to investigate the effects of a patient's age on their response to nebulised bronchodilators we have carried out a retrospective analysis of our clinical results database. Inclusion criteria for the study were: Age >20 at time of measurement and the presence of airflow obstruction (FEV₁/VC ratio below the lower limit of normal) at baseline measurements. Patients were excluded from the analysis if they were hospital inpatients at the time of measurement, or if they were on oral steroid treatment. After baseline spirometry had been measured, patients received either 2.5mg of salbutamol (SALB) or 0.25mg ipratropium bromide (IPB) via a nebuliser. Spirometry measurements were repeated at 20 minutes (SALB) or 60 minutes (IPB) post administration of bronchodilator. A patient was considered to have shown a positive response to a bronchodilator if there was an increase in FEV₁ >200ml above baseline which was also an increase of >12%. Patients were divided into four age groups, shown below. A total of 11560 patients fulfilled the entry criteria. Of these, 3799 (33%) showed a positive response to a bronchodilator (Table 1).

Table 1. Change in FEV₁ expressed as a percentage of the patient's predicted FEV

Age range	Salbutamol		Ipratropium bromide	
	N	Change in FEV ₁	N	Change in FEV ₁
20 - 40	182	16.4 (7.57)	12	12.8 (4.73)
40 - 60	1191	13.8 (6.19)	103	14.2 (7.55)
60 - 80	1913	13.5 (5.49)	185	12.8 (4.50)
80+	196	15.5 (6.15)	17	11.5 (3.71)

Results expressed as mean (±SD)

There were no statistically significant differences between responses to SALB or IPB in any age group. These results demonstrate that increasing patient age does not diminish the magnitude of a patient's response to nebulised SALB or IPB.