



<b>Title</b>	<b>Systematic Review and Economic Analysis of the Comparative Effectiveness of Different Inhaled Corticosteroids and Their Usage With Long-Acting Beta2 Agonists for the Treatment of Chronic Asthma in Adults and Children Aged 12 Years and Over</b>
<b>Agency</b>	NETSCC, HTA, NIHR Evaluation and Trials Coordinating Centre Alpha House, University of Southampton Science Park, Southampton, SO16 7NS, United Kingdom;
<b>Reference</b>	Volume 12.19, ISSN 1366-5278. <a href="http://www.hta.ac.uk/project/1523.asp">www.hta.ac.uk/project/1523.asp</a>

## Aim

To assess the clinical and cost effectiveness of inhaled corticosteroids (ICS) alone and ICS used in combination with a long-acting beta2 agonist (LABA) in treating chronic asthma in adults and children aged >12 years.

## Conclusions and results

The evidence indicates few significant differences in effects between the 5 ICS licensed for use in adults and adolescents aged >12 years, at either low or high dose. On average, budesonide dipropionate (BDP) products currently tend to be the cheapest ICS and tend to remain so as the daily ICS dose increases. Evidence shows that adding a LABA to an ICS is potentially more clinically effective than doubling the dose of ICS alone, although consistent significant differences between the two treatment strategies are not observed for all outcome measures. Cost differences between combination therapies compared with ICS monotherapy are highly variable and depend on the dose required and the preparations used. In combining ICS/LABA there are potential cost savings from using combination inhalers versus separate inhalers, with few differences in effects. The only exception to this cost saving is with budesonide and formoterol fumarate (BUD & FF) at doses above 1200 µg/day, where separate inhalers can be equivalent to or cheaper than combination inhalers. Neither of the two combination inhalers fluticasone propionate and salmeterol (FP & SAL) or BUD & FF is consistently superior in terms of treatment effect. A comparison of costs associated with each combination therapy indicates that at low dose FP & SAL delivered via a pressurized metered-dose inhaler (pMDI) is currently the cheapest combination inhaler, but only marginally cheaper than BUD & FF delivered as a dry powder inhaler (DPI). At higher doses, both the FP & SAL combination inhalers (pMDI and DPI) are marginally cheaper than BUD & FF (DPI).

## Recommendations

The evidence indicates few consistent significant differences in effects between the 5 ICS licensed for use in adults and adolescents aged >12 years, at either low or high dose. On average, BDP products currently tend to be the cheapest ICS available at starting doses and to remain so as the daily ICS dose required increases. Exclusion of chlorofluorocarbon-propelled (CFC) products may increase the mean annual cost of both BDP and BUD, but should have no effect on the cost of mometasone furoate (MF), FP, or ciclesonide (CIC), as all products for these drugs are CFC-free. See Executive Summary link at [www.hta.ac.uk/project/1523.asp](http://www.hta.ac.uk/project/1523.asp).

## Methods

See Executive Summary link at [www.hta.ac.uk/project/1523.asp](http://www.hta.ac.uk/project/1523.asp).

## Further research/reviews required

Future trials in treating chronic asthma should standardize the definition and measurement of outcome measures, with a greater focus on patient-centered outcomes (eg, HRQoL and symptoms). To inform cost-utility and cost-effectiveness analyses from a UK NHS perspective, longitudinal studies need to comprehensively track the care pathways followed when people experience asthma exacerbations of different severity. See Executive Summary link at [www.hta.ac.uk/project/1523.asp](http://www.hta.ac.uk/project/1523.asp). Further research synthesis, quantifying the adverse effects of the different ICS, is required for treatment choices by patients and clinicians to be fully informed.