

Combined inhalers are more effective for chronic obstructive pulmonary disease but increase the risk of pneumonia

Clinical question	Is the combination of a corticosteroid and long-acting beta-agonist in one inhaler more effective than long-acting beta-agonists alone for chronic obstructive pulmonary disease (COPD)?
Bottom line	In people with COPD, compared to long-acting beta-agonists alone, use of a combination corticosteroid and long-acting beta-agonist in one inhaler can reduce exacerbations by 18 per cent, and improve quality of life and pre-dose and post-dose FEV1. The evidence for the effect on hospitalisations was mixed, and could be explained by differing risk of hospitalisation across study populations. No significant impact on mortality was found. The NNT* to prevent one exacerbation in one year was 4 (combination versus placebo). The NNT to prevent one death (combination versus placebo) in the largest study was 38.1 The benefits of this treatment need to be balanced with the increased risk of pneumonia which is due to the added cortisone. *NNT = number needed to treat to benefit one individual.
Caveat	Inhaled steroids for COPD carry an increased risk of pneumonia (a relative increase of around 50 per cent). In the TORCH study with rates of pneumonia of 20 per cent over 3 years in this population, the NNH** was 12. In another study with rates of 2 per cent over one year the NNH was 84. This needs further study to determine the clinical relevance as the Cochrane review does not show an increase in exacerbations or deaths despite the increase in pneumonia. **NNH = number needed to treat to cause harm in one individual.
Context	Combinations of 2 classes of medication in one inhaler have been developed to treat people with COPD as this may make it easier to take the medications than using 2 separate inhalers. Two

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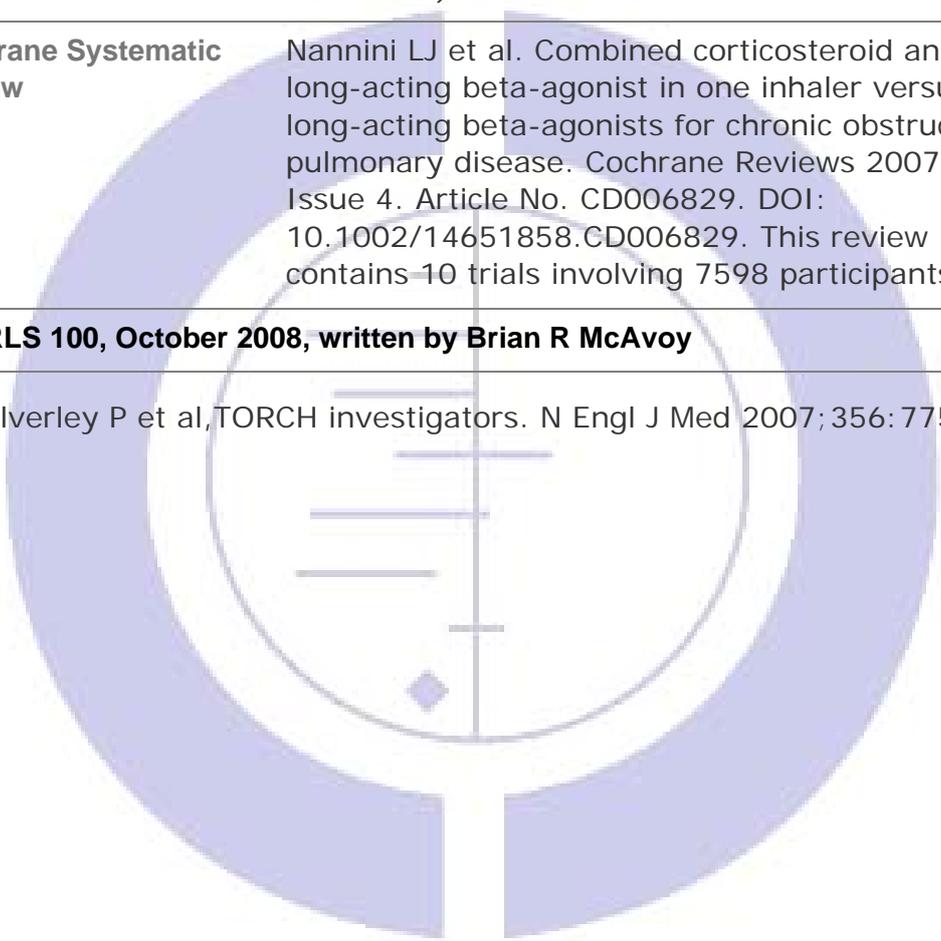
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	types of combined inhaler exist currently: budesonide/formoterol (BDF – “Symbicort”) and fluticasone/salmeterol (FPS – “Advair” “Viani” or “Seretide”).
Cochrane Systematic Review	Nannini LJ et al. Combined corticosteroid and long-acting beta-agonist in one inhaler versus long-acting beta-agonists for chronic obstructive pulmonary disease. Cochrane Reviews 2007, Issue 4. Article No. CD006829. DOI: 10.1002/14651858.CD006829. This review contains 10 trials involving 7598 participants.
PEARLS 100, October 2008, written by Brian R McAvoy	

1. Calverley P et al, TORCH investigators. N Engl J Med 2007; 356: 775–89.



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