

Guideline topic: Pharmacological management of asthma Evidence table 4.3a: Long acting B2 agonists in exercise induced asthma								
Author	Year	Study type	Quality rating	Population	Outomes measured	Effect size	Confidence intervals / p values	Comments
<b>Adults</b>								
Nelson JA, Strauss L, Skowronski M et al <sup>1</sup>	1998	A single random-order double blind cross-over controlled trial One week wash-out period between cross-over periods	++	20 patients ( $29 \pm 9$ yr) with exercise-induced asthma. 29 day study. Attending Case Western Reserve University School of Medicine. Inhaled salmeterol 42 mcg twice daily vs. placebo for one month.	FEV <sub>1</sub> ; morning; post-exercise & evening; 9 hr later (pre the evening dose)	Placebp: FEV <sub>1</sub> decrease morning 19% (SE 2%), evening 18% (SE 2%)  Salmeterol: Morning FEV <sub>1</sub> , decrease Day1: 6% (SE 2%) Day 14: 15 (SE 3%) Day 29: 14 (SE 3%) Morning to evening FEV <sub>1</sub> , decrease Day 1: 6% (SE 2%) Day 14: 15 (SE 3%)	P=< 0.001  P = 0.1  P = 0.003 P = 0.02 c.f. day 14 P = 0.29 c.f. placabo	Shows that the prolonged (+ 9 hr)  Protection from exercise-induced symptoms, by salmeterol, reduces after 14 days to less than clinically significant levels.  Sample size small.  Partly supported by a grant from the manufacturers of salmeterol.

						Day 29: 14 (SE 3%)		
Sichleidis I, Daskalopoulou E, Kyriazis G, et al <sup>2</sup>	1993	A single randomised, double blind cross-over controlled trial	+	12 patients (20-44 yr) with mild, stable extrinsic asthma, exercise- induced with no late phase reaction.  Attending George Papanicolaou General Hospital, Thessaloniki	% bronchospasm after exercise test  (PEFR before- PEFR afterx100)/PEFR before exercise  1hr post-admin  Inhaled salbutamol 200mcg, inhaled salmeterol 50mcg, single dosing	Salbutamol 4.4+/-3.6% Salmeterol 3.3+/-4.4% Placebo 28.6+/-3.8%	Difference P<0.001  Difference P<0.01	Small sample size. Confirms that salbutamols duration of action is < 6 hours and salmeterol > 12 hours in the prevention of exercise induced asthma.

				levels	Salmeterol 5.43+/-2.83		
					Salbutamol 4.75+/-2.73		
					Salmeterol 3.07+/-1.1		
					Salbutamol 13.82+/-10.79		
					Salmeterol 3.56+/-2		
					Salbutamol 9.97+/-5.81		
					Salmeterol 6.13+/-2.9		
					Salbutamol 26.4+/-12.66		
					Salmeterol 14.58+/-10.83		

1. Nelson JA, Strauss L, Skowronski M, Ciufo R, Novak R, McFadden ER, Jr. Effect of long-term salmeterol treatment on exercise-induced asthma. *N Engl J Med* 1998;339(3):141-6.
2. Sichletidis L, Daskalopoulou E, Kyriazis G, Kosmidou I, Koupidou S, Pechlivanidis T, et al. Comparative efficacy of salbutamol and salmeterol in exercise-induced asthma. *J Int Med Res* 1993;21(2):81-8.