Table 17: Clinical evidence profile: Comparison 6. Positive expiratory pressure (PEP) versus oscillating devices

Quality assessment							No of patients		Effect			
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	PEP	Oscillating device	Relative (95% CI)	Absolute	Quality	Importance
Patient preference: self-withdrawal due to lack of perceived effectiveness (follow-up mean 1 years; Better indicated by lower values)												
1 (McIlwaine 2001)	randomised trials	serious[1]	no serious inconsistency	no serious indirectness	very serious[2]	none	0/20 (0%)	5/20 (25%)	RR 0.09 (0.01 to 1.54)	227 fewer per 1000 (from 248 fewer to 135 more)	VERY LOW	CRITICAL
Hospitalizations for respiratory exacerbations (follow-up mean 13 months; measured with: number per participant; Better indicated by lower values)												
1 (Newbold 2005)	randomised trials	serious[3]	no serious inconsistency	no serious indirectness	serious[4]	none	21	21	-	MD 0.4 lower (0.92 lower to 0.12 higher)	LOW	CRITICAL
Lung function - FEV$_1$ (follow-up 2-4 weeks; measured with: % change from baseline; range of scores: 0-100; Better indicated by higher values)												
1 (Padman 1999)	randomised trials	very serious[5]	no serious inconsistency	no serious indirectness	serious[4]	none	6	6	-	MD 4.08 higher (4.66 lower to 12.82 higher)	VERY LOW	IMPORTANT
Lung function - FEV$_1$ (follow-up mean 6-12 months; measured with: % change from baseline; range of scores: 0-100; Better indicated by higher values)												

Quality assessment							No of patients		Effect			
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	PEP	Oscillating device	Relative (95% CI)	Absolute	Quality	Importance
1 (McIlwaine 2001)	randomised trials	serious[1]	no serious inconsistency	no serious indirectness	serious[4]	none	17	13	-	MD 9.71 higher (2.12 lower to 21.54 higher)	LOW	IMPORTANT
Lung function - FEV$_1$ (follow-up 1-2 years; measured with: % change from baseline; range of scores: 0-100; Better indicated by higher values)												
3 (McIlwaine 2013, Newbold 2005, Tannenbaum 2005)	randomised trials	serious[6]	no serious inconsistency	no serious indirectness	serious[4]	none	78	82	-	MD 2.82 lower (6.36 lower to 0.72 higher)	LOW	IMPORTANT
Lung function - FVC (follow-up mean 1 years; measured with: % change from baseline; range of scores: 0-100; Better indicated by higher values)												
3 (McIlwaine 2001, McIlwaine 2013, Newbold 2005)	randomised trials	serious[6]	serious[7]	no serious indirectness	no serious imprecision	none	80	80	-	MD -0.44 lower (6.66 lower to 5.78 higher)	LOW	IMPORTANT
Lung function - FVC (follow-up 2-4 weeks; measured with: % predicted; range of scores: 0-100; Better indicated by higher values)												

Quality assessment							No of patients		Effect			
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	PEP	Oscillating device	Relative (95% CI)	Absolute	Quality	Importance
1 (van Winden 1998)	randomised trials	no serious risk of bias	no serious inconsistency	no serious indirectness	serious[4]	none	22	22	-	MD 2 lower (4.09 lower to 0.09 higher)	MODERATE	IMPORTANT
Quality of life – CFQ-R: physical domain (follow-up mean 1 years; range of scores: 0-100; Better indicated by higher values)												
1 (McIlwaine 2013)	randomised trials	no serious risk of bias	no serious inconsistency	no serious indirectness	no serious imprecision[8]	none	51	56	-	MD 2.2 higher (1.32 lower to 5.72 higher)	HIGH	IMPORTANT
Quality of life – CFQ-R: treatment burden (follow-up mean 1 years; range of scores: 0-100; Better indicated by higher values)												
1 (McIlwaine 2013)	randomised trials	no serious risk of bias	no serious inconsistency	no serious indirectness	no serious imprecision[8]	none	51	56	-	MD 1.05 higher (6.35 lower to 8.45 higher)	HIGH	IMPORTANT
Quality of life – CFQ-R: respiratory domain (follow-up mean 1 years; range of scores: 0-100; Better indicated by higher values)												
1 (McIlwaine 2013)	randomised trials	no serious risk of bias	no serious inconsistency	no serious indirectness	serious[8,9]	none	51	56	-	MD 2.79 higher (3.68 lower to 9.26 higher)	MODERATE	IMPORTANT

Abbreviations: CI: confidence interval; CFQ-R: cystic fibrosis questionnaire revised; FEV$_1$: forced expiratory volume in 1 second; FVC: forced vital capacity; MD: mean difference; PEP: positive expiratory pressure; RR: risk ratio

1 The quality of the evidence was downgraded by 1 due to reporting bias.

2 The quality of the evidence was downgraded by 2 due to very serious imprecision as 95% CI crossed 2 default MIDs.

3 The quality of the evidence was downgraded by 1 due to differences in baseline characteristics (pulmonary function values) between both groups.

4 The quality of the evidence was downgraded by 1 due to serious imprecision as 95% CI crossed 1 default MID

5 The quality of the evidence was downgraded by 2 due to attrition bias and reporting bias.

6 Taking into account weighting in a meta-analysis and the likely contribution from each component, the quality of the evidence was downgraded by 1 due differences in baseline participant characteristics.

7 The quality of the evidence was downgraded by 1 due to serious heterogeneity (I-squared inconsistency statistic of 69%) and no plausible explanation was found with sensitivity analysis.

8 Clinical MID=8.5 was used to assess imprecision because the CFQ-R questionnaire (Quittner et al. 2009) was used

9 The quality of the evidence was downgraded by 1 as 95% CI crossed 1 clinical MID