

Table 82: Clinical evidence profile: Comparison 1. Aerobic exercise training programme versus no exercise programme

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Aerobic exercise training programme	No exercise programme	Relative (95% CI)	Absolute		
Change in FEV₁ % predicted at hospital discharge - <i>Supervised programme</i> (follow-up mean 18.7 days; range of scores: 0-100; Better indicated by higher values)												
1 (Selvadurai 2002)	randomised trials	serious ¹	no serious inconsistency	no serious indirectness	serious ²	none	22	22	-	MD 2.03 higher (2.31 lower to 6.37 higher)	LOW	CRITICAL
Change in FEV₁ % predicted - <i>Unsupervised programme</i> (follow-up 3 months; range of scores: 0-100; Better indicated by higher values)												
2 (Hormerding 2015, Krie	randomised trials	very serious ³	very serious ⁴	no serious indirectness	very serious ⁵	none	31	27	-	MD 5.23 higher (10.06 lower to 20.52)	VERY LOW	CRITICAL

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Aerobic exercise training programme	No exercise programme	Relative (95% CI)	Absolute		
mler 2013)										higher)		
Change in FEV₁ % predicted - <i>Unsupervised programme</i> (follow-up 6 months; range of scores: 0-100; Better indicated by higher values)												
1 (Kriemler 2013)	randomised trials	very serious ⁶	no serious inconsistency	no serious indirectness	no serious imprecision	none	15	10	-	MD 17.17 higher (8.59 to 25.75 higher)	LOW	CRITICAL
Change in FEV₁ % predicted - <i>Unsupervised programme</i> (follow-up 3 years; range of scores: 0-100; Better indicated by higher values)												
1 (Schneiderman-Walker 2000)	randomised trials	serious ⁷	no serious inconsistency	no serious indirectness	no serious imprecision	none	30	35	-	MD 2.01 higher (0.06 lower to 4.08 higher)	MODERATE	CRITICAL
Change in FVC % predicted at hospital discharge - <i>Supervised programme</i> (follow-up mean 18.7 days; range of scores: 0-100; Better indicated by higher values)												
1 (Selvadurai)	randomised trials	serious ¹	no serious inconsistency	no serious indirectness	very serious ⁸	none	22	22	-	MD 0.06 higher (2.55 lower to	VERY LOW	IMPORTANT

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Aerobic exercise training programme	No exercise programme	Relative (95% CI)	Absolute		
2002)										2.67 higher)		
Change in FVC % predicted - Unsupervised programme (follow-up 3 months; range of scores: 0-100; Better indicated by higher values)												
2 (Hormerding 2015, Kriemler 2013)	randomised trials	very serious ³	very serious ⁹	no serious indirectness	very serious ⁸	none	31	27	-	MD 3.99 higher (6.62 lower to 14.61 higher)	VERY LOW	IMPORTANT
Change in FVC % predicted - Unsupervised programme (follow-up 6 months; range of scores: 0-100; Better indicated by higher values)												
1 (Kriemler 2013)	randomised trials	very serious ⁶	no serious inconsistency	no serious indirectness	no serious imprecision	none	15	10	-	MD 12.51 higher (5.9 to 19.12 higher)	LOW	IMPORTANT
Change in FVC % predicted - Unsupervised programme (follow-up 3 years; range of scores: 0-100; Better indicated by higher values)												
1 (Schneiderman-Walker)	randomised trials	serious ⁷	no serious inconsistency	no serious indirectness	serious ¹⁰	none	30	35	-	MD 2.17 higher (0.47 to 3.87)	LOW	IMPORTANT

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Aerobic exercise training programme	No exercise programme	Relative (95% CI)	Absolute		
2000)										higher)		
Change in FEV₁ peak - Unsupervised programme (follow-up 3 months; measured with: ml/min per kg body weight; Better indicated by higher values)												
2 (Hommel 2015, Kriemler 2013)	randomised trials	very serious ¹¹	very serious ¹²	no serious indirectness	very serious ⁸	none	32	27	-	MD 3.76 higher (6.89 lower to 14.41 higher)	VERY LOW	IMPORTANT
Change in FEV₁ peak - Unsupervised programme (follow-up 6 months; measured with: ml/min per kg body weight; Better indicated by higher values)												
1 (Kriemler 2013)	randomised trials	very serious ⁶	no serious inconsistency	no serious indirectness	no serious imprecision	none	15	10	-	MD 18.33 higher (8.95 to 27.71 higher)	LOW	IMPORTANT
Change in FEV₁ peak at hospital discharge - Supervised programme (follow-up mean 18.7 days; measured with: ml/min per kg body weight; Better indicated by higher values)												
1 (Selvadurai)	randomised trials	serious ¹	no serious inconsistency	no serious indirectness	no serious	none	22	22	-	MD 8.53 higher (4.85	MODERATE	IMPORTANT

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Aerobic exercise training programme	No exercise programme	Relative (95% CI)	Absolute		
2002)					imprecision					to 12.21 higher)		
Time to next exacerbation												
No evidence available												
Change in BMI - Unsupervised programme (follow-up 3 months; measured with: kg/m²; Better indicated by higher values)												
1 (Kriemler 2013)	randomised trials	very serious ⁶	no serious inconsistency	no serious indirectness	serious ¹⁰	none	15	10	-	MD 0.3 higher (0.13 lower to 0.73 higher)	VERY LOW	IMPORTANT
Change in BMI - Unsupervised programme (follow-up 6 months; Better indicated by higher values)												
1 (Kriemler 2013)	randomised trials	very serious ⁶	no serious inconsistency	no serious indirectness	serious ¹⁰	none	15	10	-	MD 0.4 higher (0 to 0.8 higher)	VERY LOW	IMPORTANT
Change in BMI - Supervised programme												
No evidence available												
Quality of life												
No evidence available												

Quality assessment							No of patients		Effect		Quality	Importance
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Aerobic exercise training programme	No exercise programme	Relative (95% CI)	Absolute		
Preference for training programme												
No evidence available												
Adverse events												
No evidence available												

Abbreviations: BMI: body mass index; CI: confidence interval; CF: cystic fibrosis; FEV₁: forced expiratory volume in 1 second; FVC: forced vital capacity; kg: kilogrammes MD: mean difference; min: minute; ml: millilitres; FEV₁ max/ peak: maximal oxygen consumption

1 The quality of the evidence was downgraded by 1 because of unclear risk of bias in relation to random sequence generation, blinding of participants and personnel and blinding of outcome assessment.

2 The quality of the evidence was downgraded by 1 because the 95% CI crossed 1 clinical MID

3 The quality of the evidence was downgraded by 2 because of unclear risk of bias in relation to allocation concealment, blinding of participants and personnel and blinding of outcome assessment in 1 study; high risk of bias in relation to random sequence generation and allocation concealment, unclear risk of blinding of personnel, unclear risk of other bias (due to the deterioration of physical health in the control group) in the other study

4 The quality of the evidence was downgraded by 2 due to very serious heterogeneity (chi-squared p<0.1, I-squared inconsistency statistic of 90%) and no plausible explanation was found with sensitivity or subgroup analysis.

5 The quality of the evidence was downgraded by 2 because the 95% CI crossed 2 clinical MIDs

6 The quality of the evidence was downgraded by 2 because of high risk of bias in relation to random sequence generation and allocation concealment, unclear risk of bias in relation to blinding of participants and personnel, and unclear risk of other bias (due to the deterioration of physical health in the control group)

7 The quality of the evidence was downgraded by 1 because of unclear risk of bias in relation to allocation concealment, blinding of participants and personnel, incomplete outcome data and other bias (exclusion criteria were not stated)

8 The quality of the evidence was downgraded by 2 because the 95% CI crossed 2 default MIDs

9 The quality of the evidence was downgraded by 2 due to very serious heterogeneity (chi-squared p<0.1, I-squared inconsistency statistic of 84%) and no plausible explanation was found with sensitivity or subgroup analysis.

10 The quality of the evidence was downgraded by 1 because the 95% CI crossed 1 default MID

11 The quality of the evidence was downgraded by 2 because of unclear risk of bias in relation to allocation concealment, blinding of participants and personnel, blinding of outcome assessment and other bias (the mean peak heart rate reached during the exercise test is indicative of submaximal effort, which is likely to underestimate the true FEV₁ peak of the study participants) in 1 study; high risk of bias in relation to random sequence generation and allocation concealment, unclear risk of blinding of personnel, unclear risk of other bias (due to the deterioration of physical health in the control group) in the other study

12 The quality of the evidence was downgraded by 2 due to very serious heterogeneity (chi-squared p<0.1, I-squared inconsistency statistic of 75%) and no plausible explanation was found with sensitivity or subgroup analysis.