

## NKR10 PICO 2. Rehabilitering af KOL. Tidlig rehab (<4 uger) versus Ingen tidlig rehab (>4 uger) for KOL patienter efter indl. med KOL exacerbation

### Characteristics of studies

#### Characteristics of included studies

##### Behnke 2000

<b>Methods</b>	Randomised parallel group trial
<b>Participants</b>	26 COPD patients (mean age 67 years, 77% males, mean FEV1=36% predicted) after inpatient treatment for acute exacerbation
<b>Interventions</b>	Rehabilitation: Within 4-7 days after admission, inpatient pulmonary rehabilitation with endurance exercise (5 walking sessions/day for 10 days), followed by six months of supervised home-based endurance exercise (3 walking sessions/day for 6 months). Completion rate of pulmonary rehabilitation of 65.2% (15 out of 23 patients) Usual care: Standard inpatient care without exercise and standard community care with respirologist. Follow-up: 76 weeks
<b>Outcomes</b>	Lungfunction, HLQoL, gangtest(6MWT), Åndenød, genindlæggelser
<b>Notes</b>	

#### Risk of bias table

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Unclear risk	See Giacomini, M., D. DeJean, and D. Simeonov. "PULMONARY REHABILITATION FOR PATIENTS WITH CHRONIC PULMONARY DISEASE (COPD): AN EVIDENCE BASED ANALYSIS." <i>Ont Health Technol Assess Ser 12</i> (2012): 1-47.
Allocation concealment (selection bias)	Low risk	See Giacomini, M., D. DeJean, and D. Simeonov. "PULMONARY REHABILITATION FOR PATIENTS WITH CHRONIC PULMONARY DISEASE (COPD): AN EVIDENCE BASED ANALYSIS." <i>Ont Health Technol Assess Ser 12</i> (2012): 1-47.
Blinding of participants and personnel (performance bias) Hospital admission	Unclear risk	See Giacomini, M., D. DeJean, and D. Simeonov. "PULMONARY REHABILITATION FOR PATIENTS WITH CHRONIC PULMONARY DISEASE (COPD): AN EVIDENCE BASED ANALYSIS." <i>Ont Health Technol Assess Ser 12</i> (2012): 1-47.
Blinding of participants and personnel (performance bias) HRQoL	High risk	See Giacomini, M., D. DeJean, and D. Simeonov. "PULMONARY REHABILITATION FOR PATIENTS WITH CHRONIC PULMONARY DISEASE (COPD): AN EVIDENCE BASED ANALYSIS." <i>Ont Health Technol Assess Ser 12</i> (2012): 1-47.
Blinding of participants and personnel (performance bias) Mortality	Low risk	See Giacomini, M., D. DeJean, and D. Simeonov. "PULMONARY REHABILITATION FOR PATIENTS WITH CHRONIC PULMONARY DISEASE (COPD): AN EVIDENCE BASED ANALYSIS." <i>Ont Health Technol Assess Ser 12</i> (2012): 1-47.
Blinding of participants and personnel (performance bias) Walk test	Unclear risk	See Giacomini, M., D. DeJean, and D. Simeonov. "PULMONARY REHABILITATION FOR PATIENTS WITH CHRONIC PULMONARY DISEASE (COPD): AN EVIDENCE BASED ANALYSIS." <i>Ont Health Technol Assess Ser 12</i> (2012): 1-47.
Blinding of outcome assessment (detection bias)	Low risk	See Giacomini, M., D. DeJean, and D. Simeonov. "PULMONARY REHABILITATION FOR PATIENTS WITH CHRONIC PULMONARY DISEASE (COPD): AN EVIDENCE BASED ANALYSIS." <i>Ont Health Technol Assess Ser 12</i> (2012): 1-47.
Incomplete outcome data (attrition bias)	High risk	See Giacomini, M., D. DeJean, and D. Simeonov. "PULMONARY REHABILITATION FOR PATIENTS WITH CHRONIC PULMONARY DISEASE (COPD): AN EVIDENCE BASED ANALYSIS." <i>Ont Health Technol Assess Ser 12</i> (2012): 1-47.
Selective reporting (reporting bias)	Unclear risk	See Giacomini, M., D. DeJean, and D. Simeonov. "PULMONARY REHABILITATION FOR PATIENTS WITH CHRONIC PULMONARY DISEASE (COPD): AN EVIDENCE BASED ANALYSIS." <i>Ont Health Technol Assess Ser 12</i> (2012): 1-47.
Other bias	Unclear risk	See Giacomini, M., D. DeJean, and D. Simeonov. "PULMONARY REHABILITATION FOR PATIENTS WITH CHRONIC PULMONARY DISEASE (COPD): AN EVIDENCE BASED ANALYSIS." <i>Ont Health Technol Assess Ser 12</i> (2012): 1-47.

##### Daabis 2017

<b>Methods</b>	<b>Study design:</b> Randomized controlled trial <b>Study grouping:</b> Parallel group
<b>Participants</b>	<b>Baseline Characteristics</b> Intervention 1 <ul style="list-style-type: none"> <li>● COPD severity (GOLD/MRC score): 2.62 (0.76) MRC, 53.2(9.5) FEV1%</li> <li>● Male (%):</li> <li>● Age (range): 61 (8), age</li> </ul> Intervention 2 <ul style="list-style-type: none"> <li>● COPD severity (GOLD/MRC score): 2.58 (0.69) MRC, 56.4(8.3) FEV1%</li> <li>● Male (%):</li> </ul>

	<ul style="list-style-type: none"> <li>● <i>Age (range):</i> 58 (7) age</li> </ul> <p>Control</p> <ul style="list-style-type: none"> <li>● <i>COPD severity (GOLD/MRC score):</i> 2.53 (0.89) MRC; 54.6(7.1) FEV1%</li> <li>● <i>Male (%):</i></li> <li>● <i>Age (range):</i> 60 (8), age</li> </ul> <p>Overall</p> <ul style="list-style-type: none"> <li>● <i>COPD severity (GOLD/MRC score):</i></li> <li>● <i>Male (%):</i></li> <li>● <i>Age (range):</i></li> </ul> <p><b>Included criteria:</b> Patients admitted to chest dis-eases department, Alexandria Main University Hospital witha primary diagnosis of acute exacerbation of COPD.</p> <p><b>Excluded criteria:</b> Exclusion criteria:(1) Hypoxemic patients at rest or exercise.(2) Comorbidity that could limit exercise training like car-diovascular, musculoskeletal or neuromuscular diseases.(3) Patients who attended a pulmonary rehabilitation pro-gram in the preceding year.</p> <p><b>Pretreatment:</b> No significant differences were found between groupsin terms of age, BMI, airflow obstruction, or arterial bloodgases</p>
<b>Interventions</b>	<p><b>Intervention Characteristics</b></p> <p>Intervention 1</p> <ul style="list-style-type: none"> <li>● <i>Description:</i> Endurance traning</li> <li>● <i>Duration (weeks):</i> 8 weeks</li> <li>● <i>Longest follow up (after end of treatment):</i> After end of treatment</li> </ul> <p>Intervention 2</p> <ul style="list-style-type: none"> <li>● <i>Description:</i> Combined training (CT) (endurance + strength training)</li> <li>● <i>Duration (weeks):</i> 8 weeks</li> <li>● <i>Longest follow up (after end of treatment):</i> After end treatment</li> </ul> <p>Control</p> <ul style="list-style-type: none"> <li>● <i>Description:</i> Medical treatment</li> <li>● <i>Duration (weeks):</i> 8 weeks</li> <li>● <i>Longest follow up (after end of treatment):</i> After end of treatment</li> </ul>
<b>Outcomes</b>	<p><i>Quality of life, SD</i></p> <ul style="list-style-type: none"> <li>● <b>Outcome type:</b> ContinuousOutcome</li> </ul> <p><i>Walk test, SD</i></p> <ul style="list-style-type: none"> <li>● <b>Outcome type:</b> ContinuousOutcome</li> </ul>
<b>Notes</b>	<p><b>Country:</b> Egypt</p> <p><b>Authors name:</b> Rasha Daabis</p> <p><b>Institution:</b> Dept. of Chest Diseases, Faculty of Medicine, Alexandria University, Alexandria, Egypt</p> <p><b>Email:</b> rgdaabis@yahoo.dk, rgdaabis@gmail.com</p> <p><b>Address:</b> Department of Chest Diseases, Faculty of Medicine, Alexandria University, Alazarita, Alkhartoom Square, Egypt</p> <p><b>Outcomes</b></p> <p>Quality of life: SGRQ, St. georges respiratory QuestionnaireWalk test: 6-min test</p>

### Risk of bias table

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Unclear risk	Patients were allocated randomly to groups. It is unknown how this was done
Allocation concealment (selection bias)	Unclear risk	Nothing mentioned
Blinding of participants and personnel (performance bias) Hospital admission	Unclear risk	Nothing mentioned
Blinding of participants and personnel (performance bias) HRQoL	Unclear risk	Nothing mentioned
Blinding of participants and personnel (performance bias) Mortality	Unclear risk	Nothing mentioned
Blinding of participants and personnel (performance bias) Walk test	Unclear risk	Nothing mentioned
Blinding of outcome assessment (detection bias)	Unclear risk	Nothing mentioned
Incomplete outcome data (attrition bias)	Unclear risk	45 patients were enrolled in the study. Only 15 per group was assesed. Nothing mentioned on dropouts.
Selective reporting (reporting bias)	Low risk	No other apparent source of bias
Other bias	Low risk	No other apparent source of bias

## Deepak 2014

<b>Methods</b>	<b>Study design:</b> Randomized controlled trial <b>Study grouping:</b> Parallel group
<b>Participants</b>	<b>Baseline Characteristics</b> Intervention 1 <ul style="list-style-type: none"> <li>● <i>COPD severity (GOLD/MRC score):</i> 53.3±18.4 (mean FEV1)</li> <li>● <i>Male (%):</i> 28 male</li> <li>● <i>Age (range):</i> 58.4 (6.8) age, years</li> </ul> Intervention 2 <ul style="list-style-type: none"> <li>● <i>COPD severity (GOLD/MRC score):</i></li> <li>● <i>Male (%):</i></li> <li>● <i>Age (range):</i></li> </ul> Control <ul style="list-style-type: none"> <li>● <i>COPD severity (GOLD/MRC score):</i> 46.7±14.8 (mean FEV1)</li> <li>● <i>Male (%):</i> 28 male</li> <li>● <i>Age (range):</i> 59.4 (6.7) age, years</li> </ul> Overall <ul style="list-style-type: none"> <li>● <i>COPD severity (GOLD/MRC score):</i></li> <li>● <i>Male (%):</i></li> <li>● <i>Age (range):</i></li> </ul> <b>Included criteria:</b> Consecutive patients who were admitted with anAECOPD and were discharged from the hospital whofulfilled the study criteria were included in the study.Unknown what the inclusion criteria were <b>Excluded criteria:</b> Severely ill patients who were unable to walk, orpatients with unstable cardiovascular disease (unstableangina or recent acute myocardial infarction), hadcognitive impairment, disabling arthritis, and severeneurological disease were excluded from the study <b>Pretreatment:</b> The mean FEV1% in the case and control group was53.3±18.4 and 46.7±14.8, respectively. The mMRCBreathlessness Scale in the two groups during theinitial assessment was found to be similar
<b>Interventions</b>	<b>Intervention Characteristics</b> Intervention 1 <ul style="list-style-type: none"> <li>● <i>Description:</i> Standard treatment plus 12-week post-exacerbation pulmonary rehabilitation programme</li> <li>● <i>Duration (weeks):</i> 12 weeks</li> <li>● <i>Longest follow up (after end of treatment):</i> After end of treatment</li> </ul> Intervention 2 <ul style="list-style-type: none"> <li>● <i>Description:</i></li> <li>● <i>Duration (weeks):</i></li> <li>● <i>Longest follow up (after end of treatment):</i></li> </ul> Control <ul style="list-style-type: none"> <li>● <i>Description:</i> Conventional treatment without pulmonary rehabilitation</li> <li>● <i>Duration (weeks):</i> 12 weeks</li> <li>● <i>Longest follow up (after end of treatment):</i> After end of treatment</li> </ul>
<b>Outcomes</b>	<i>Quality of life, SD</i> <ul style="list-style-type: none"> <li>● <b>Outcome type:</b> ContinuousOutcome</li> </ul> <i>Walk test, SD</i> <ul style="list-style-type: none"> <li>● <b>Outcome type:</b> ContinuousOutcome</li> </ul>
<b>Notes</b>	<b>Country:</b> India <b>Setting:</b> in the department of Pulmonary Medicine atGovernment Medical College Hospital, Chandigarh <b>Authors name:</b> Deepak TH <b>Institution:</b> Department of Pulmonary Medicine, Government Medical College and Hospital <b>Email:</b> prmohapatra@hotmail.com <b>Address:</b> Department of Pulmonary Medicine, All IndiaInstitute of Medical Sciences, Bhubaneswar-751 019 (Odisha), India.

## Risk of bias table

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Low risk	Randomisation was done by block randomisation technique.
Allocation concealment (selection bias)	Unclear risk	Nothing mentioned
Blinding of participants and personnel (performance bias) Hospital admission	Unclear risk	Nothing mentioned
Blinding of participants and personnel (performance bias) HRQoL	Unclear risk	Nothing mentioned
Blinding of participants and personnel (performance bias) Mortality	Unclear risk	Nothing mentioned

Blinding of participants and personnel (performance bias) Walk test	Unclear risk	Nothing mentioned
Blinding of outcome assessment (detection bias)	Unclear risk	Nothing mentioned
Incomplete outcome data (attrition bias)	Unclear risk	There was 60 patients enrolled, yet only 28 participants were included in the analysis. There is nothing stated on dropouts.
Selective reporting (reporting bias)	Low risk	No other apparent source of bias
Other bias	Low risk	The inclusion criterias are not stated.

### Eaton 2009

<b>Methods</b>	RCT
<b>Participants</b>	N=97, Rehab=47, Kontrol=50
<b>Interventions</b>	<p>Rehabilitation: The patient started inpatient programme as soon as medically appropriate as determined by the attending medical team. Inpatient programme: Supervised walking and upper-lower limb strengthening exercise at least 30min/day until discharge,</p> <p>followed by outpatient programme: supervised exercise for 8 weeks (1 h session, twice weekly) and patient education (coping with dyspnea, the importance of a regular daily home exercise programme, management of activities of daily living, drugs, vaccines, airway clearance techniques, nutritional advice, self-management and action plans for exacerbations, stress and panic management, relaxation techniques, mood disturbance, adapting to a chronic illness and end-of-life care). Only 19 (40%) patients assigned to early rehabilitation satisfied the a priori definition of adherence (attendance at 75% of rehabilitation sessions)</p> <p>Follow-up: 12 weeks</p> <p>Usual care: Standardized care in accordance with the ATS/ERS COPD guidelines and standardized advice on exercise and maintaining daily activities, but not further specified.</p> <p>Follow-up: 12 weeks</p>
<b>Outcomes</b>	BMI, air-flow obstruktion, åndenød, gangtest (6MWT), HRQoL, genindlæggelser, antal sengedage,
<b>Notes</b>	Follow-up: 3 måneder fra baseline

### Risk of bias table

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Low risk	See Giacomini, M., D. DeJean, and D. Simeonov. "PULMONARY REHABILITATION FOR PATIENTS WITH CHRONIC PULMONARY DISEASE (COPD): AN EVIDENCE BASED ANALYSIS." <i>Ont Health Technol Assess Ser 12</i> (2012): 1-47.
Allocation concealment (selection bias)	Unclear risk	See Giacomini, M., D. DeJean, and D. Simeonov. "PULMONARY REHABILITATION FOR PATIENTS WITH CHRONIC PULMONARY DISEASE (COPD): AN EVIDENCE BASED ANALYSIS." <i>Ont Health Technol Assess Ser 12</i> (2012): 1-47.
Blinding of participants and personnel (performance bias) Hospital admission	High risk	See Giacomini, M., D. DeJean, and D. Simeonov. "PULMONARY REHABILITATION FOR PATIENTS WITH CHRONIC PULMONARY DISEASE (COPD): AN EVIDENCE BASED ANALYSIS." <i>Ont Health Technol Assess Ser 12</i> (2012): 1-47.
Blinding of participants and personnel (performance bias) HRQoL	High risk	See Giacomini, M., D. DeJean, and D. Simeonov. "PULMONARY REHABILITATION FOR PATIENTS WITH CHRONIC PULMONARY DISEASE (COPD): AN EVIDENCE BASED ANALYSIS." <i>Ont Health Technol Assess Ser 12</i> (2012): 1-47.
Blinding of participants and personnel (performance bias) Mortality	Low risk	See Giacomini, M., D. DeJean, and D. Simeonov. "PULMONARY REHABILITATION FOR PATIENTS WITH CHRONIC PULMONARY DISEASE (COPD): AN EVIDENCE BASED ANALYSIS." <i>Ont Health Technol Assess Ser 12</i> (2012): 1-47.
Blinding of participants and personnel (performance bias) Walk test	High risk	See Giacomini, M., D. DeJean, and D. Simeonov. "PULMONARY REHABILITATION FOR PATIENTS WITH CHRONIC PULMONARY DISEASE (COPD): AN EVIDENCE BASED ANALYSIS." <i>Ont Health Technol Assess Ser 12</i> (2012): 1-47.
Blinding of outcome assessment (detection bias)	High risk	See Giacomini, M., D. DeJean, and D. Simeonov. "PULMONARY REHABILITATION FOR PATIENTS WITH CHRONIC PULMONARY DISEASE (COPD): AN EVIDENCE BASED ANALYSIS." <i>Ont Health Technol Assess Ser 12</i> (2012): 1-47.
Incomplete outcome data (attrition bias)	Low risk	See Giacomini, M., D. DeJean, and D. Simeonov. "PULMONARY REHABILITATION FOR PATIENTS WITH CHRONIC PULMONARY DISEASE (COPD): AN EVIDENCE BASED ANALYSIS." <i>Ont Health Technol Assess Ser 12</i> (2012): 1-47.
Selective reporting (reporting bias)	Low risk	See Giacomini, M., D. DeJean, and D. Simeonov. "PULMONARY REHABILITATION FOR PATIENTS WITH CHRONIC PULMONARY DISEASE (COPD): AN EVIDENCE BASED ANALYSIS." <i>Ont Health Technol Assess Ser 12</i> (2012): 1-47.
Other bias	Unclear risk	See Giacomini, M., D. DeJean, and D. Simeonov. "PULMONARY REHABILITATION FOR PATIENTS WITH CHRONIC PULMONARY DISEASE (COPD): AN EVIDENCE BASED ANALYSIS." <i>Ont Health Technol Assess Ser 12</i> (2012): 1-47.

**Kirsten 1998**

<b>Methods</b>	RCT
<b>Participants</b>	29 COPD patients (mean age 64 years, 90% males, mean FEV1=36% predicted) after inpatient treatment for acute exacerbation
<b>Interventions</b>	Rehabilitation: Within 6-8 days after admission, inpatient pulmonary rehabilitation with endurance exercise (5 walking sessions/day for 10 days). Completion rate of pulmonary rehabilitation not reported Usual care: Standard inpatient care without exercise (not further specified). Follow-up: 11 days
<b>Outcomes</b>	Transition dyspnea index, 6MWD
<b>Notes</b>	31 randomised, 29 completed

**Risk of bias table**

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Unclear risk	Described as randomised; additional information not available from trial report
Allocation concealment (selection bias)	Unclear risk	Nothing stated
Blinding of participants and personnel (performance bias) Hospital admission	Unclear risk	Nothing stated
Blinding of participants and personnel (performance bias) HRQoL	Unclear risk	Nothing stated
Blinding of participants and personnel (performance bias) Mortality	Unclear risk	Nothing stated
Blinding of participants and personnel (performance bias) Walk test	Unclear risk	Information not available from trial report
Blinding of outcome assessment (detection bias)	Unclear risk	not stated
Incomplete outcome data (attrition bias)	Low risk	not detected
Selective reporting (reporting bias)	Low risk	not detected
Other bias	Low risk	none detected

**Ko 2011**

<b>Methods</b>	RCT
<b>Participants</b>	N=60, rehab=30, ingen rehab=30
<b>Interventions</b>	8 ugers rehab 2-3 gange om ugen, aerob gang og cykel træning
<b>Outcomes</b>	Adverse events, genindlæggelser, åndenød(mMRC) HRQoL(SGRQ), gangtest(6MWT), C-P exercise test (VO2 max)
<b>Notes</b>	6 months follow-up

**Risk of bias table**

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Low risk	random number generator
Allocation concealment (selection bias)	Unclear risk	not stated
Blinding of participants and personnel (performance bias) Hospital admission	High risk	Not blinded
Blinding of participants and personnel (performance bias) HRQoL	High risk	Not blinded
Blinding of participants and personnel (performance bias) Mortality	Unclear risk	Nothing stated
Blinding of participants and personnel (performance bias) Walk test	High risk	Not blinded
Blinding of outcome assessment (detection bias)	Low risk	blinded
Incomplete outcome data (attrition bias)	Low risk	not detected
Selective reporting (reporting bias)	High risk	misleading presentation of data on readmissions
Other bias	Low risk	none detected

**Ko 2017**

<b>Methods</b>	<p><b>Study design:</b> Randomized controlled trial  <b>Study grouping:</b> Parallel group</p>
<b>Participants</b>	<p><b>Baseline Characteristics</b></p> <p>Intervention 1</p> <ul style="list-style-type: none"> <li>● COPD severity (GOLD/MRC score): 46.7 (18.3) FEV1, % of pred.</li> <li>● Male (%): 94.4 %</li> <li>● Age (range): 74.9 (7.9) age, years</li> </ul> <p>Intervention 2</p> <ul style="list-style-type: none"> <li>● COPD severity (GOLD/MRC score):</li> <li>● Male (%):</li> <li>● Age (range):</li> </ul> <p>Control</p> <ul style="list-style-type: none"> <li>● COPD severity (GOLD/MRC score): 44.2 (14.7) FEV1, % of pred.</li> <li>● Male (%): 96.7 %</li> <li>● Age (range): 74.6 (8.6) age, years</li> </ul> <p>Overall</p> <ul style="list-style-type: none"> <li>● COPD severity (GOLD/MRC score):</li> <li>● Male (%):</li> <li>● Age (range):</li> </ul> <p><b>Included criteria:</b> Patients who had been admitted with AECOPD to the Prince of Wales Hospital.  <b>Excluded criteria:</b> Exclusion criteria were: age 40 years; a diagnosis of asthma; chronic lung disaes other than COPD (eg, pneumoconiosis, pulmonary fibrosis); very vsevare medical illness that would affect the patient's ability to participate in this study (eg, terminal malignancy); and unable to give informed consent.  <b>Pretreatment:</b> There was no difference in the demographic characteristics between the groups.</p>
<b>Interventions</b>	<p><b>Intervention Characteristics</b></p> <p>Intervention 1</p> <ul style="list-style-type: none"> <li>● <i>Description:</i> Education and an individualised physical training programme to perform at home or a short course of outpatient pulmonary rehabilitation. Phone call from nurse</li> <li>● <i>Duration (weeks):</i> 12 months</li> <li>● <i>Longest follow up (after end of treatment):</i> 12 months after end of treatment</li> </ul> <p>Intervention 2</p> <ul style="list-style-type: none"> <li>● <i>Description:</i></li> <li>● <i>Duration (weeks):</i></li> <li>● <i>Longest follow up (after end of treatment):</i></li> </ul> <p>Control</p> <ul style="list-style-type: none"> <li>● <i>Description:</i> Usual care</li> <li>● <i>Duration (weeks):</i> 12 months</li> <li>● <i>Longest follow up (after end of treatment):</i> 12 months after end of treatment</li> </ul>
<b>Outcomes</b>	<p><i>Mortality, n</i></p> <ul style="list-style-type: none"> <li>● <b>Outcome type:</b> DichotomousOutcome</li> </ul> <p><i>Quality of life, SD</i></p> <ul style="list-style-type: none"> <li>● <b>Outcome type:</b> ContinuousOutcome</li> </ul> <p><i>Readmission due to exacerbation, n</i></p> <ul style="list-style-type: none"> <li>● <b>Outcome type:</b> DichotomousOutcome</li> </ul> <p><i>Walk test, CI</i></p> <ul style="list-style-type: none"> <li>● <b>Outcome type:</b> ContinuousOutcome</li> </ul> <p><i>Hospitalization, SD, end of treatment</i></p> <ul style="list-style-type: none"> <li>● <b>Outcome type:</b> ContinuousOutcome</li> <li>● <b>Data value:</b> Endpoint</li> </ul>
<b>Notes</b>	<p><b>Country:</b> Kina  <b>Comments:</b> Trial registration: NCT 01108835  <b>Authors name:</b> Fanny W S KO  <b>Institution:</b> Devision of Respiratory Medicine, Department of Medicine and Therapeutics, The Chinese University of Hong Kong  <b>Email:</b> dschui@cuhk.edu.hk  <b>Address:</b> Dept. of Medicine and therapeutics, The chinese University of Hong Kong. Prince of Wales Hospital, 30-32 Ngan Shing Street, Shatin, New territories. Hong Kong  <b>Outcomes</b>  Walk test: 6-min, change, longest follow-upQuality of life: SGRQ, change, longest follow-upReadmission: adjusted relative risk of readmission for COPD 95% CI. End of treatmentHospitalilazation: days. End of treatmentDeath: End of treatment</p>

Risk of bias table

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Low risk	A random number generator was used to assign patients in the intervention or control group
Allocation concealment (selection bias)	Low risk	A computer programme (allocation by minimisation) was used to assist the randomization of subjects in equal opportunity in either group
Blinding of participants and personnel (performance bias) Hospital admission	Unclear risk	An open study for the patients and therapist, but the research assistant performing lung function, walking tests and questionnaire tests was neither involved in the delivery of patients care nor aware of the randomisation
Blinding of participants and personnel (performance bias) HRQoL	Unclear risk	Nothing mentioned
Blinding of participants and personnel (performance bias) Mortality	Unclear risk	Nothing mentioned
Blinding of participants and personnel (performance bias) Walk test	Unclear risk	Nothing mentioned
Blinding of outcome assessment (detection bias)	Unclear risk	Nothing mentioned
Incomplete outcome data (attrition bias)	Low risk	No other apparent sources of bias
Selective reporting (reporting bias)	Low risk	Matches the study protocol
Other bias	Low risk	No other apparent sources of bias

**Man 2004**

<b>Methods</b>	RCT
<b>Participants</b>	N=42, Rehab=21, Kontrol=21
<b>Interventions</b>	Rehabilitation: Multidisciplinary outpatient pulmonary rehabilitation (within 10 days of discharge) with endurance and strength exercise and patient education for 12 weeks (2 sessions/week). Completion rate of pulmonary rehabilitation of 85.7% (18 out of 21 patients) Usual care: Standard community care with respirologist. Follow-up: 12 weeks
<b>Outcomes</b>	Gangtest(SWT), HRQoL, genindlæggelser, sengedage, mortalitet
<b>Notes</b>	Follow-up: 12 uger

**Risk of bias table**

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Low risk	See Giacomini, M., D. DeJean, and D. Simeonov. "PULMONARY REHABILITATION FOR PATIENTS WITH CHRONIC PULMONARY DISEASE (COPD): AN EVIDENCE BASED ANALYSIS." <i>Ont Health Technol Assess Ser 12</i> (2012): 1-47.
Allocation concealment (selection bias)	Unclear risk	See Giacomini, M., D. DeJean, and D. Simeonov. "PULMONARY REHABILITATION FOR PATIENTS WITH CHRONIC PULMONARY DISEASE (COPD): AN EVIDENCE BASED ANALYSIS." <i>Ont Health Technol Assess Ser 12</i> (2012): 1-47.
Blinding of participants and personnel (performance bias) Hospital admission	High risk	See Giacomini, M., D. DeJean, and D. Simeonov. "PULMONARY REHABILITATION FOR PATIENTS WITH CHRONIC PULMONARY DISEASE (COPD): AN EVIDENCE BASED ANALYSIS." <i>Ont Health Technol Assess Ser 12</i> (2012): 1-47.
Blinding of participants and personnel (performance bias) HRQoL	High risk	See Giacomini, M., D. DeJean, and D. Simeonov. "PULMONARY REHABILITATION FOR PATIENTS WITH CHRONIC PULMONARY DISEASE (COPD): AN EVIDENCE BASED ANALYSIS." <i>Ont Health Technol Assess Ser 12</i> (2012): 1-47.
Blinding of participants and personnel (performance bias) Mortality	Low risk	See Giacomini, M., D. DeJean, and D. Simeonov. "PULMONARY REHABILITATION FOR PATIENTS WITH CHRONIC PULMONARY DISEASE (COPD): AN EVIDENCE BASED ANALYSIS." <i>Ont Health Technol Assess Ser 12</i> (2012): 1-47.
Blinding of participants and personnel (performance bias) Walk test	High risk	See Giacomini, M., D. DeJean, and D. Simeonov. "PULMONARY REHABILITATION FOR PATIENTS WITH CHRONIC PULMONARY DISEASE (COPD): AN EVIDENCE BASED ANALYSIS." <i>Ont Health Technol Assess Ser 12</i> (2012): 1-47.
Blinding of outcome assessment (detection bias)	High risk	See Giacomini, M., D. DeJean, and D. Simeonov. "PULMONARY REHABILITATION FOR PATIENTS WITH CHRONIC PULMONARY DISEASE (COPD): AN EVIDENCE BASED ANALYSIS." <i>Ont Health Technol Assess Ser 12</i> (2012): 1-47.
Incomplete outcome data (attrition bias)	Low risk	See Giacomini, M., D. DeJean, and D. Simeonov. "PULMONARY REHABILITATION FOR PATIENTS WITH CHRONIC PULMONARY DISEASE (COPD): AN EVIDENCE BASED ANALYSIS." <i>Ont Health Technol Assess Ser 12</i> (2012): 1-47.
Selective reporting (reporting bias)	Low risk	See Giacomini, M., D. DeJean, and D. Simeonov. "PULMONARY REHABILITATION FOR PATIENTS WITH CHRONIC PULMONARY DISEASE (COPD): AN EVIDENCE BASED ANALYSIS." <i>Ont Health Technol Assess Ser 12</i> (2012): 1-47.

Other bias	Low risk	See Giacomini, M., D. DeJean, and D. Simeonov. "PULMONARY REHABILITATION FOR PATIENTS WITH CHRONIC PULMONARY DISEASE (COPD): AN EVIDENCE BASED ANALYSIS." <i>Ont Health Technol Assess Ser 12</i> (2012): 1-47.
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**Murphy 2005**

<b>Methods</b>	RCT
<b>Participants</b>	N=31, Rehab= 16, Kontrol=15
<b>Interventions</b>	Rehabilitation: Supervised home-based pulmonary rehabilitation with endurance and strength exercise for 6 weeks (2 supervised sessions/week and daily unsupervised sessions). Completion rate of pulmonary rehabilitation of 76.9% (10 out of 13 patients) Usual care: Standard community care with respirologist. Follow-up: 26 weeks
<b>Outcomes</b>	Gangtest (SWT), åndenød, HRQoL, hospitalsindlæggelser, exacerbationer
<b>Notes</b>	Follow-up: 3 måneder

Risk of bias table

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Unclear risk	See Giacomini, M., D. DeJean, and D. Simeonov. "PULMONARY REHABILITATION FOR PATIENTS WITH CHRONIC PULMONARY DISEASE (COPD): AN EVIDENCE BASED ANALYSIS." <i>Ont Health Technol Assess Ser 12</i> (2012): 1-47.
Allocation concealment (selection bias)	Low risk	See Giacomini, M., D. DeJean, and D. Simeonov. "PULMONARY REHABILITATION FOR PATIENTS WITH CHRONIC PULMONARY DISEASE (COPD): AN EVIDENCE BASED ANALYSIS." <i>Ont Health Technol Assess Ser 12</i> (2012): 1-47.
Blinding of participants and personnel (performance bias) Hospital admission	Unclear risk	See Giacomini, M., D. DeJean, and D. Simeonov. "PULMONARY REHABILITATION FOR PATIENTS WITH CHRONIC PULMONARY DISEASE (COPD): AN EVIDENCE BASED ANALYSIS." <i>Ont Health Technol Assess Ser 12</i> (2012): 1-47.
Blinding of participants and personnel (performance bias) HRQoL	High risk	See Giacomini, M., D. DeJean, and D. Simeonov. "PULMONARY REHABILITATION FOR PATIENTS WITH CHRONIC PULMONARY DISEASE (COPD): AN EVIDENCE BASED ANALYSIS." <i>Ont Health Technol Assess Ser 12</i> (2012): 1-47.
Blinding of participants and personnel (performance bias) Mortality	Low risk	See Giacomini, M., D. DeJean, and D. Simeonov. "PULMONARY REHABILITATION FOR PATIENTS WITH CHRONIC PULMONARY DISEASE (COPD): AN EVIDENCE BASED ANALYSIS." <i>Ont Health Technol Assess Ser 12</i> (2012): 1-47.
Blinding of participants and personnel (performance bias) Walk test	Unclear risk	See Giacomini, M., D. DeJean, and D. Simeonov. "PULMONARY REHABILITATION FOR PATIENTS WITH CHRONIC PULMONARY DISEASE (COPD): AN EVIDENCE BASED ANALYSIS." <i>Ont Health Technol Assess Ser 12</i> (2012): 1-47.
Blinding of outcome assessment (detection bias)	Low risk	See Giacomini, M., D. DeJean, and D. Simeonov. "PULMONARY REHABILITATION FOR PATIENTS WITH CHRONIC PULMONARY DISEASE (COPD): AN EVIDENCE BASED ANALYSIS." <i>Ont Health Technol Assess Ser 12</i> (2012): 1-47.
Incomplete outcome data (attrition bias)	Low risk	See Giacomini, M., D. DeJean, and D. Simeonov. "PULMONARY REHABILITATION FOR PATIENTS WITH CHRONIC PULMONARY DISEASE (COPD): AN EVIDENCE BASED ANALYSIS." <i>Ont Health Technol Assess Ser 12</i> (2012): 1-47.
Selective reporting (reporting bias)	Low risk	See Giacomini, M., D. DeJean, and D. Simeonov. "PULMONARY REHABILITATION FOR PATIENTS WITH CHRONIC PULMONARY DISEASE (COPD): AN EVIDENCE BASED ANALYSIS." <i>Ont Health Technol Assess Ser 12</i> (2012): 1-47.
Other bias	Unclear risk	See Giacomini, M., D. DeJean, and D. Simeonov. "PULMONARY REHABILITATION FOR PATIENTS WITH CHRONIC PULMONARY DISEASE (COPD): AN EVIDENCE BASED ANALYSIS." <i>Ont Health Technol Assess Ser 12</i> (2012): 1-47.

**Puhan 2012**

<b>Methods</b>	RCT
<b>Participants</b>	N=36, tidlig rehab=19, sen rehab=17
<b>Interventions</b>	12 week programme, in or outpatient rehabilitation center, 24 sessions (range 18-36), including both endurance and strenght, and education
<b>Outcomes</b>	Exacerbationsrate over 18 måneder, HRQoL(CRQ), åndenød(mMRC)
<b>Notes</b>	

Risk of bias table

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Low risk	See Puhan, Milo A., et al. "Pulmonary rehabilitation following exacerbations of chronic obstructive pulmonary disease." <i>Cochrane Database Syst Rev</i> 10.10 (2011).

Allocation concealment (selection bias)	Low risk	See Puhan, Milo A., et al. "Pulmonary rehabilitation following exacerbations of chronic obstructive pulmonary disease." <i>Cochrane Database Syst Rev</i> 10.10 (2011).
Blinding of participants and personnel (performance bias) Hospital admission	High risk	See Puhan, Milo A., et al. "Pulmonary rehabilitation following exacerbations of chronic obstructive pulmonary disease." <i>Cochrane Database Syst Rev</i> 10.10 (2011).
Blinding of participants and personnel (performance bias) HRQoL	High risk	See Puhan, Milo A., et al. "Pulmonary rehabilitation following exacerbations of chronic obstructive pulmonary disease." <i>Cochrane Database Syst Rev</i> 10.10 (2011).
Blinding of participants and personnel (performance bias) Mortality	Low risk	See Puhan, Milo A., et al. "Pulmonary rehabilitation following exacerbations of chronic obstructive pulmonary disease." <i>Cochrane Database Syst Rev</i> 10.10 (2011).
Blinding of participants and personnel (performance bias) Walk test	High risk	See Puhan, Milo A., et al. "Pulmonary rehabilitation following exacerbations of chronic obstructive pulmonary disease." <i>Cochrane Database Syst Rev</i> 10.10 (2011).
Blinding of outcome assessment (detection bias)	Unclear risk	See Puhan, Milo A., et al. "Pulmonary rehabilitation following exacerbations of chronic obstructive pulmonary disease." <i>Cochrane Database Syst Rev</i> 10.10 (2011).
Incomplete outcome data (attrition bias)	Low risk	See Puhan, Milo A., et al. "Pulmonary rehabilitation following exacerbations of chronic obstructive pulmonary disease." <i>Cochrane Database Syst Rev</i> 10.10 (2011).
Selective reporting (reporting bias)	Low risk	See Puhan, Milo A., et al. "Pulmonary rehabilitation following exacerbations of chronic obstructive pulmonary disease." <i>Cochrane Database Syst Rev</i> 10.10 (2011).
Other bias	Low risk	See Puhan, Milo A., et al. "Pulmonary rehabilitation following exacerbations of chronic obstructive pulmonary disease." <i>Cochrane Database Syst Rev</i> 10.10 (2011).

**Revitt 2018**

<b>Methods</b>	<b>Study design:</b> Randomized controlled trial <b>Study grouping:</b> Parallel group
<b>Participants</b>	<b>Baseline Characteristics</b> Intervention 1 <ul style="list-style-type: none"> <li>● COPD severity (GOLD/MRC score): 51.04 (20.46), FEV1 % of predicted.</li> <li>● Male (%):</li> <li>● Age (range): 64.32 (7.37)</li> </ul> Intervention 2 <ul style="list-style-type: none"> <li>● COPD severity (GOLD/MRC score):</li> <li>● Male (%):</li> <li>● Age (range):</li> </ul> Control <ul style="list-style-type: none"> <li>● COPD severity (GOLD/MRC score): 52.33 (17.53), FEV1 % of predicted</li> <li>● Male (%):</li> <li>● Age (range): 65.8 (7.24)</li> </ul> Overall <ul style="list-style-type: none"> <li>● COPD severity (GOLD/MRC score):</li> <li>● Male (%):</li> <li>● Age (range):</li> </ul> <b>Included criteria:</b> Inclusion criteria were confirmed diagnosis of COPD prior to current admission and an increase in self-reported breathlessness on exertion. <b>Excluded criteria:</b> Exclusion criteria were inability to provide informed consent; acute cardiac event; and the presence of musculoskeletal, neurological and psychiatric co-morbidities that would prevent the delivery of PR. <b>Pretreatment:</b> Both groups were well matched for age, lung function and exercise capacity. Randomization was not equal across both arms with n=24 in the early PR group and n=12 in the D-PEPR group.
<b>Interventions</b>	<b>Intervention Characteristics</b> Intervention 1 <ul style="list-style-type: none"> <li>● <b>Description:</b> Occurred within 4 weeks of discharge. PR was delivered twice weekly for 6 weeks, with each session being 2 hours. It consisted of individualized aerobic and resistance exercises and education which covered topics including chest clearance and energy conservation.</li> <li>● <b>Duration (weeks):</b> 6 weeks</li> <li>● <b>Longest follow up (after end of treatment):</b> End of treatment</li> </ul> Intervention 2 <ul style="list-style-type: none"> <li>● <b>Description:</b></li> <li>● <b>Duration (weeks):</b></li> <li>● <b>Longest follow up (after end of treatment):</b></li> </ul> Control <ul style="list-style-type: none"> <li>● <b>Description:</b> 7 weeks after a control period. PR was delivered twice weekly for 6 weeks, with each session being 2 hours. It consisted of individualized aerobic and resistance exercises and education which covered topics including</li> </ul>

	chest clearance and energyconservation. ● <i>Duration (weeks):</i> 6 weeks ● <i>Longest follow up (after end of treatment):</i> End of treatment
<b>Outcomes</b>	<p><i>Mortality, n</i> ● <b>Outcome type:</b> DichotomousOutcome</p> <p><i>Mortality, n (longest follow-up)</i> ● <b>Outcome type:</b> DichotomousOutcome</p> <p><i>Quality of life, SD</i> ● <b>Outcome type:</b> ContinuousOutcome</p> <p><i>Readmission due to exacerbation, n</i> ● <b>Outcome type:</b> DichotomousOutcome</p> <p><i>ADL, SD</i> ● <b>Outcome type:</b> ContinuousOutcome</p> <p><i>Dropouts, n</i> ● <b>Outcome type:</b> DichotomousOutcome</p> <p><i>Quality of life, SD (longest follow-up)</i> ● <b>Outcome type:</b> ContinuousOutcome</p> <p><i>Readmission due to exacerbation, RR (longest follow-up)</i> ● <b>Outcome type:</b> DichotomousOutcome</p> <p><i>ADL, SD (longest follow-up)</i> ● <b>Outcome type:</b> ContinuousOutcome</p> <p><i>Hospitalization, SD (longest follow-up)</i> ● <b>Outcome type:</b> ContinuousOutcome</p> <p><i>Fall, n</i> ● <b>Outcome type:</b> DichotomousOutcome</p> <p><i>Walk test, SD (longest follow-up)</i> ● <b>Outcome type:</b> ContinuousOutcome</p> <p><i>Walk test, SD</i> ● <b>Outcome type:</b> ContinuousOutcome</p> <p><i>Walk test, CI</i> ● <b>Outcome type:</b> ContinuousOutcome</p>
<b>Notes</b>	

## Risk of bias table

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Unclear risk	Nothing mentioned
Allocation concealment (selection bias)	Low risk	Judgement Comment: Sealed envelope technique
Blinding of participants and personnel (performance bias) Hospital admission	Unclear risk	Nothing mentioned
Blinding of participants and personnel (performance bias) HRQoL	Unclear risk	Nothing mentioned
Blinding of participants and personnel (performance bias) Mortality	Unclear risk	Nothing mentioned
Blinding of participants and personnel (performance bias) Walk test	Unclear risk	Nothing mentioned
Blinding of outcome assessment (detection bias)	Unclear risk	Judgement Comment: Nothing mentioned
Incomplete outcome data (attrition bias)	Low risk	Judgement Comment: Dropouts have been accounted for
Selective reporting (reporting bias)	High risk	Quote: "Health-related quality of life measures were gathered, but on analysis, there were insufficient complete data sets to enable accurate analysis so this has not been reported."
Other bias	High risk	Quote: "As a result of the original sample number not being met in the allocated time and lower than anticipated uptake and retention issues, the trial was terminated prematurely and was deemed a failed trial."

**Seymour 2010**

<b>Methods</b>	RCT
<b>Participants</b>	N=60, Rehab=30, Kontrol=30
<b>Interventions</b>	Rehabilitation: Within a week after hospital discharged, outpatient pulmonary rehabilitation twice-weekly exercise (limb strengthening and aerobic activities) and education sessions, during 8 weeks. Completion rate of pulmonary rehabilitation of 77% (23 out of 30). Patients were provided with general information about COPD and offered outpatient appointments with general practitioner or respiratory team. Follow-up: 12 weeks Usual care: Patients were provided with general information about COPD and offered outpatient appointments with general practitioner or respiratory team. Not referred further. Follow-up: 12 weeks
<b>Outcomes</b>	Hospitalsindlæggelser med exacerbation, muskelstryke, gangtest(SWT), HRQoL
<b>Notes</b>	Follow-up: 3 efter indlæggelse

**Risk of bias table**

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Unclear risk	See Giacomini, M., D. DeJean, and D. Simeonov. "PULMONARY REHABILITATION FOR PATIENTS WITH CHRONIC PULMONARY DISEASE (COPD): AN EVIDENCE BASED ANALYSIS." <i>Ont Health Technol Assess Ser 12</i> (2012): 1-47.
Allocation concealment (selection bias)	Unclear risk	See Giacomini, M., D. DeJean, and D. Simeonov. "PULMONARY REHABILITATION FOR PATIENTS WITH CHRONIC PULMONARY DISEASE (COPD): AN EVIDENCE BASED ANALYSIS." <i>Ont Health Technol Assess Ser 12</i> (2012): 1-47.
Blinding of participants and personnel (performance bias) Hospital admission	High risk	See Giacomini, M., D. DeJean, and D. Simeonov. "PULMONARY REHABILITATION FOR PATIENTS WITH CHRONIC PULMONARY DISEASE (COPD): AN EVIDENCE BASED ANALYSIS." <i>Ont Health Technol Assess Ser 12</i> (2012): 1-47.
Blinding of participants and personnel (performance bias) HRQoL	High risk	See Giacomini, M., D. DeJean, and D. Simeonov. "PULMONARY REHABILITATION FOR PATIENTS WITH CHRONIC PULMONARY DISEASE (COPD): AN EVIDENCE BASED ANALYSIS." <i>Ont Health Technol Assess Ser 12</i> (2012): 1-47.
Blinding of participants and personnel (performance bias) Mortality	Low risk	See Giacomini, M., D. DeJean, and D. Simeonov. "PULMONARY REHABILITATION FOR PATIENTS WITH CHRONIC PULMONARY DISEASE (COPD): AN EVIDENCE BASED ANALYSIS." <i>Ont Health Technol Assess Ser 12</i> (2012): 1-47.
Blinding of participants and personnel (performance bias) Walk test	High risk	See Giacomini, M., D. DeJean, and D. Simeonov. "PULMONARY REHABILITATION FOR PATIENTS WITH CHRONIC PULMONARY DISEASE (COPD): AN EVIDENCE BASED ANALYSIS." <i>Ont Health Technol Assess Ser 12</i> (2012): 1-47.
Blinding of outcome assessment (detection bias)	Unclear risk	See Giacomini, M., D. DeJean, and D. Simeonov. "PULMONARY REHABILITATION FOR PATIENTS WITH CHRONIC PULMONARY DISEASE (COPD): AN EVIDENCE BASED ANALYSIS." <i>Ont Health Technol Assess Ser 12</i> (2012): 1-47.
Incomplete outcome data (attrition bias)	Low risk	See Giacomini, M., D. DeJean, and D. Simeonov. "PULMONARY REHABILITATION FOR PATIENTS WITH CHRONIC PULMONARY DISEASE (COPD): AN EVIDENCE BASED ANALYSIS." <i>Ont Health Technol Assess Ser 12</i> (2012): 1-47. OHTAC vurdering
Selective reporting (reporting bias)	Low risk	See Giacomini, M., D. DeJean, and D. Simeonov. "PULMONARY REHABILITATION FOR PATIENTS WITH CHRONIC PULMONARY DISEASE (COPD): AN EVIDENCE BASED ANALYSIS." <i>Ont Health Technol Assess Ser 12</i> (2012): 1-47.
Other bias	Unclear risk	See Giacomini, M., D. DeJean, and D. Simeonov. "PULMONARY REHABILITATION FOR PATIENTS WITH CHRONIC PULMONARY DISEASE (COPD): AN EVIDENCE BASED ANALYSIS." <i>Ont Health Technol Assess Ser 12</i> (2012): 1-47.

**Troosters 2000**

<b>Methods</b>	RCT
<b>Participants</b>	43 COPD patients (mean age 62 years, 85% males, FEV1=39% predicted) after inpatient treatment for acute exacerbation
<b>Interventions</b>	Rehabilitation: Outpatient pulmonary rehabilitation with endurance and strength exercise for 6 months (3 sessions/week in first 3 months, then 2/week). Completion rate of pulmonary rehabilitation of 70.8% (17 out of 24 patients) Usual care: Standard community care with respirologist (not further specified). Followup: 208 weeks
<b>Outcomes</b>	6MWD, mortality
<b>Notes</b>	

**Risk of bias table**

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Unclear risk	See Puhan, Milo A., et al. "Pulmonary rehabilitation following exacerbations of chronic obstructive pulmonary disease." <i>Cochrane Database Syst Rev</i> 10.10 (2011).
Allocation concealment (selection bias)	Unclear risk	See Puhan, Milo A., et al. "Pulmonary rehabilitation following exacerbations of chronic obstructive pulmonary disease." <i>Cochrane Database Syst Rev</i> 10.10 (2011).
Blinding of participants and personnel (performance bias) Hospital admission	Unclear risk	See Puhan, Milo A., et al. "Pulmonary rehabilitation following exacerbations of chronic obstructive pulmonary disease." <i>Cochrane Database Syst Rev</i> 10.10 (2011).
Blinding of participants and personnel (performance bias) HRQoL	High risk	See Puhan, Milo A., et al. "Pulmonary rehabilitation following exacerbations of chronic obstructive pulmonary disease." <i>Cochrane Database Syst Rev</i> 10.10 (2011).
Blinding of participants and personnel (performance bias) Mortality	Low risk	See Puhan, Milo A., et al. "Pulmonary rehabilitation following exacerbations of chronic obstructive pulmonary disease." <i>Cochrane Database Syst Rev</i> 10.10 (2011).
Blinding of participants and personnel (performance bias) Walk test	Unclear risk	See Puhan, Milo A., et al. "Pulmonary rehabilitation following exacerbations of chronic obstructive pulmonary disease." <i>Cochrane Database Syst Rev</i> 10.10 (2011).
Blinding of outcome assessment (detection bias)	Unclear risk	See Puhan, Milo A., et al. "Pulmonary rehabilitation following exacerbations of chronic obstructive pulmonary disease." <i>Cochrane Database Syst Rev</i> 10.10 (2011).
Incomplete outcome data (attrition bias)	Low risk	See Puhan, Milo A., et al. "Pulmonary rehabilitation following exacerbations of chronic obstructive pulmonary disease." <i>Cochrane Database Syst Rev</i> 10.10 (2011).
Selective reporting (reporting bias)	Low risk	See Puhan, Milo A., et al. "Pulmonary rehabilitation following exacerbations of chronic obstructive pulmonary disease." <i>Cochrane Database Syst Rev</i> 10.10 (2011).
Other bias	Low risk	See Puhan, Milo A., et al. "Pulmonary rehabilitation following exacerbations of chronic obstructive pulmonary disease." <i>Cochrane Database Syst Rev</i> 10.10 (2011).

Footnotes

## Characteristics of excluded studies

Footnotes

## Characteristics of studies awaiting classification

Footnotes

## Characteristics of ongoing studies

Footnotes

## Summary of findings tables

### Additional tables

### References to studies

#### Included studies

**Behnke 2000**

[Empty]

**Daabis 2017**

[Empty]

**Deepak 2014**

[Empty]

**Eaton 2009**

[Empty]

**Kirsten 1998**

[Empty]

**Ko 2011**

[Empty]

**Ko 2017**

[Empty]

**Man 2004**

[Empty]

**Murphy 2005**

[Empty]

**Puhan 2012**

[Empty]

**Revitt 2018**

Revitt, Olivia; Sewell, Louise; Singh, Sally. Early versus delayed pulmonary rehabilitation: A randomized controlled trial – Can we do it? Chron Respir Dis 2018;(Journal Article):1479972318757469. [DOI: 10.1177/1479972318757469]

**Seymour 2010**

[Empty]

**Troosters 2000**

[Empty]

**Excluded studies**

**Studies awaiting classification**

**Ongoing studies**

**Other references**

**Additional references**

**Other published versions of this review**

**Classification pending references**

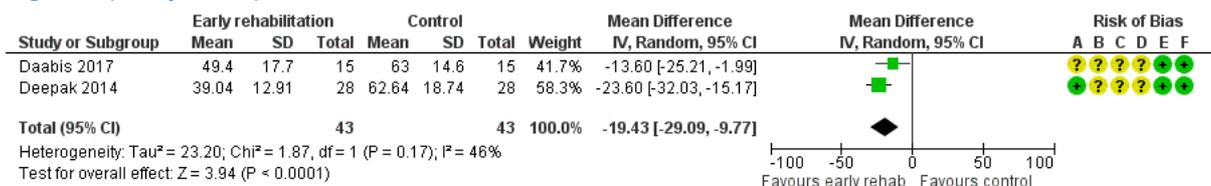
**Data and analyses**

**1 Early rehab versus none early rehab**

Outcome or Subgroup	Studies	Participants	Statistical Method	Effect Estimate
1.2 Quality of life. End of treatment (SGRQ)	2	86	Mean Difference (IV, Random, 95% CI)	-19.43 [-29.09, -9.77]
1.3 Quality of life. Longest follow-up (SGRQ)	4	323	Mean Difference (IV, Random, 95% CI)	-8.74 [-12.02, -5.45]
1.4 Mortality. End of treatment	4	319	Risk Ratio (M-H, Random, 95% CI)	0.58 [0.35, 0.98]
1.5 Mortality. Longest follow-up	3	127	Risk Ratio (M-H, Random, 95% CI)	0.55 [0.12, 2.57]
1.7 Walking test. End of treatment. (SWT, 6MWT)	8		Std. Mean Difference (IV, Random, 95% CI)	63.20 [25.85, 100.55]
1.10 Walking test. Longest follow-up. (SWT, 6MWT)	4		Std. Mean Difference (IV, Random, 95% CI)	87.39 [-7.36, 182.15]
1.13 Days in hospital. End of treatment	1	180	Mean Difference (IV, Fixed, 95% CI)	-4.27 [-6.85, -1.69]
1.15 COPD related hospital admissions. Longest follow-up	6		Risk Ratio (IV, Random, 95% CI)	0.47 [0.29, 0.75]
1.16 Dropout. End of treatment	8	440	Risk Ratio (M-H, Random, 95% CI)	0.99 [0.71, 1.39]
1.17 Dropout. Longest follow-up	3	181	Risk Ratio (M-H, Random, 95% CI)	1.05 [0.60, 1.85]

**Figures**

Figure 1 (Analysis 1.2)

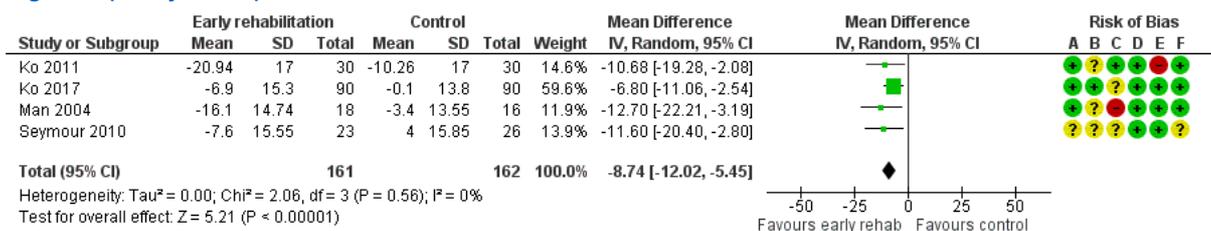


Risk of bias legend

- (A) Random sequence generation (selection bias)
- (B) Allocation concealment (selection bias)
- (C) Blinding of outcome assessment (detection bias)
- (D) Incomplete outcome data (attrition bias)
- (E) Selective reporting (reporting bias)
- (F) Other bias

Forest plot of comparison: 1 Early rehab versus none early rehab, outcome: 1.2 Quality of life. End of treatment (SGRQ).

Figure 2 (Analysis 1.3)

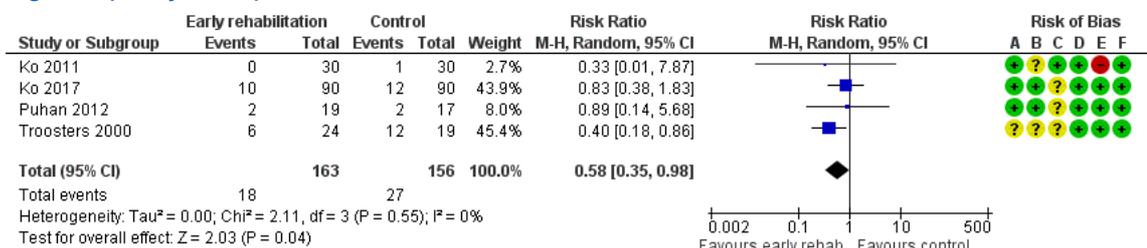


Risk of bias legend

- (A) Random sequence generation (selection bias)
- (B) Allocation concealment (selection bias)
- (C) Blinding of outcome assessment (detection bias)
- (D) Incomplete outcome data (attrition bias)
- (E) Selective reporting (reporting bias)
- (F) Other bias

Forest plot of comparison: 1 Early rehab versus none early rehab, outcome: 1.3 Quality of life. Longest follow-up (SGRQ).

Figure 3 (Analysis 1.4)



Risk of bias legend

- (A) Random sequence generation (selection bias)
- (B) Allocation concealment (selection bias)
- (C) Blinding of outcome assessment (detection bias)
- (D) Incomplete outcome data (attrition bias)
- (E) Selective reporting (reporting bias)
- (F) Other bias

Forest plot of comparison: 1 Early rehab versus none early rehab, outcome: 1.4 Mortality. End of treatment.

Figure 4 (Analysis 1.5)

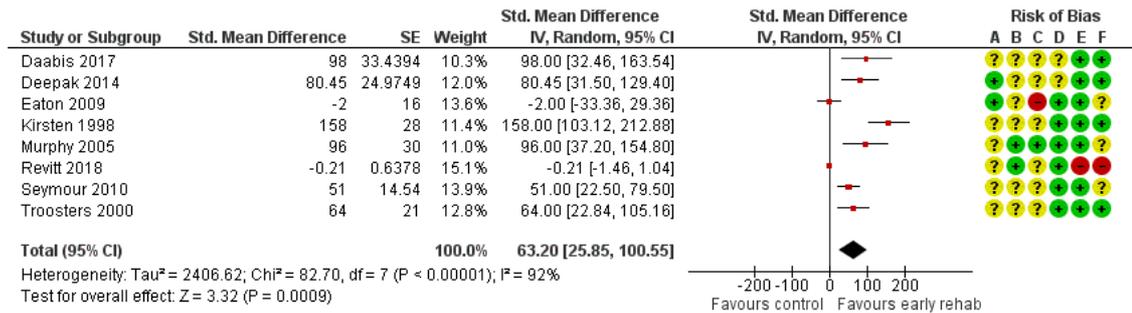


Risk of bias legend

- (A) Random sequence generation (selection bias)
- (B) Allocation concealment (selection bias)
- (C) Blinding of outcome assessment (detection bias)
- (D) Incomplete outcome data (attrition bias)
- (E) Selective reporting (reporting bias)
- (F) Other bias

Forest plot of comparison: 1 Early rehab versus none early rehab, outcome: 1.5 Mortality. Longest follow-up.

Figure 5 (Analysis 1.7)

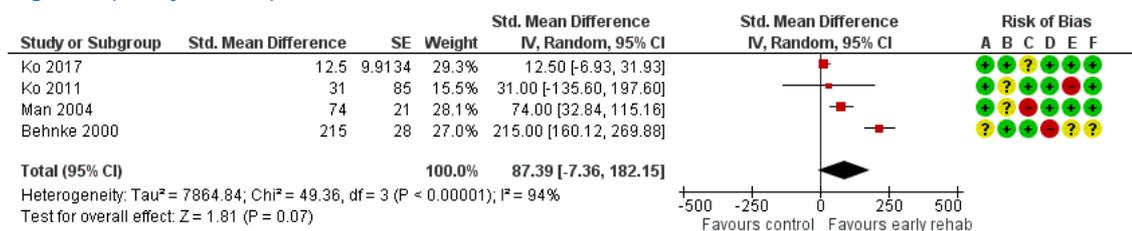


Risk of bias legend

- (A) Random sequence generation (selection bias)
- (B) Allocation concealment (selection bias)
- (C) Blinding of outcome assessment (detection bias)
- (D) Incomplete outcome data (attrition bias)
- (E) Selective reporting (reporting bias)
- (F) Other bias

Forest plot of comparison: 1 Early rehab versus none early rehab, outcome: 1.7 Walking test. End of treatment. (SWT, 6MWT).

Figure 6 (Analysis 1.10)

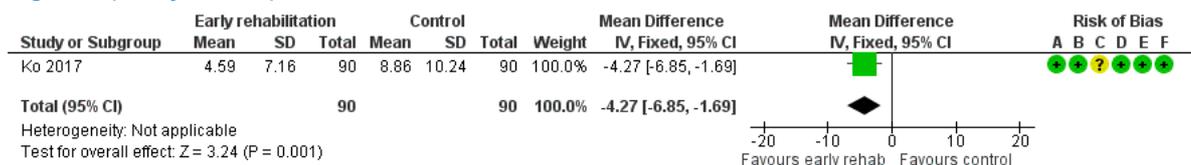


Risk of bias legend

- (A) Random sequence generation (selection bias)
- (B) Allocation concealment (selection bias)
- (C) Blinding of outcome assessment (detection bias)
- (D) Incomplete outcome data (attrition bias)
- (E) Selective reporting (reporting bias)
- (F) Other bias

Forest plot of comparison: 1 Early rehab versus none early rehab, outcome: 1.10 Walking test. Longest follow-up. (SWT, 6MWT).

Figure 7 (Analysis 1.13)

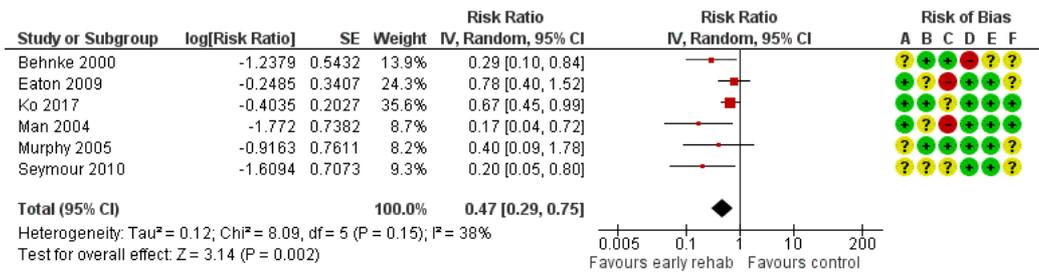


Risk of bias legend

- (A) Random sequence generation (selection bias)
- (B) Allocation concealment (selection bias)
- (C) Blinding of outcome assessment (detection bias)
- (D) Incomplete outcome data (attrition bias)
- (E) Selective reporting (reporting bias)
- (F) Other bias

Forest plot of comparison: 1 Early rehab versus none early rehab, outcome: 1.13 Days in hospital. End of treatment.

Figure 8 (Analysis 1.15)

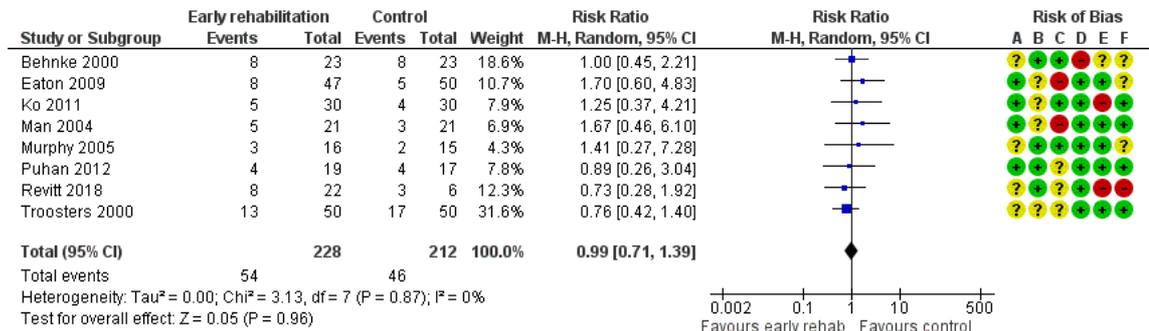


Risk of bias legend

- (A) Random sequence generation (selection bias)
- (B) Allocation concealment (selection bias)
- (C) Blinding of outcome assessment (detection bias)
- (D) Incomplete outcome data (attrition bias)
- (E) Selective reporting (reporting bias)
- (F) Other bias

Forest plot of comparison: 1 Early rehab versus none early rehab, outcome: 1.15 COPD related hospital admissions. Longest follow-up.

Figure 9 (Analysis 1.16)

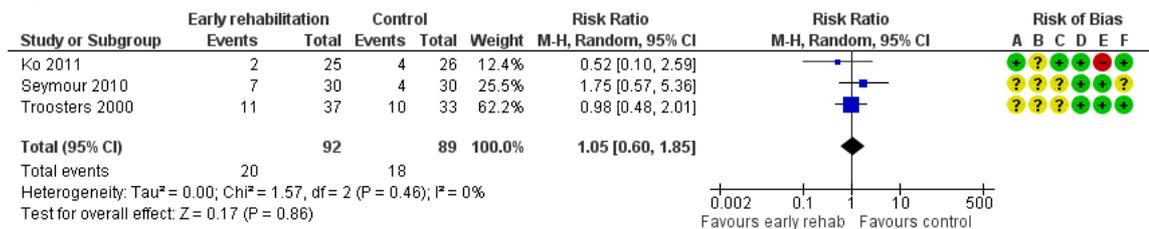


Risk of bias legend

- (A) Random sequence generation (selection bias)
- (B) Allocation concealment (selection bias)
- (C) Blinding of outcome assessment (detection bias)
- (D) Incomplete outcome data (attrition bias)
- (E) Selective reporting (reporting bias)
- (F) Other bias

Forest plot of comparison: 1 Early rehab versus none early rehab, outcome: 1.16 Dropout. End of treatment.

Figure 10 (Analysis 1.17)



Risk of bias legend

- (A) Random sequence generation (selection bias)
- (B) Allocation concealment (selection bias)
- (C) Blinding of outcome assessment (detection bias)
- (D) Incomplete outcome data (attrition bias)
- (E) Selective reporting (reporting bias)
- (F) Other bias

Forest plot of comparison: 1 Early rehab versus none early rehab, outcome: 1.17 Dropout. Longest follow-up.