Table S1. MEDLINE search strategy

1. Lung Diseases, Obstructive/
2. exp Pulmonary Disease, Chronic Obstructive/
3. emphysema$.mp.
4. (chronic$ adj3 bronchiti$).mp.
5. (obstruct$ adj3 (pulmonary or lung$ or airway$ or airflow$ or bronch$ or respirat$)).mp.
6. COPD.mp.
7. COAD.mp.
8. COBD.mp.
9. AECB.mp.
10. AECOPD.mp.
11. exp chronic bronchitis/
12. or/1-11
13. exp Bronchiectasis/
14. bronchiect$.mp.
15. bronchoect$.mp.
16. kartagener$.mp.
17. (ciliary adj3 dyskinesia).mp.
18. (bronchial$ adj3 dilat$).mp.
19. or/13-18
20. Lung Diseases, Interstitial/
21. Pulmonary Fibrosis/
22. Sarcoidosis, Pulmonary/
23. (interstitial$ adj3 (lung$ or disease$ or pneumon$)).mp.
24. ((pulmonary$ or lung$ or alveoli$) adj3 (fibros$ or fibrot$)).mp.
25. ((pulmonary$ or lung$) adj3 (sarcoid$ or granulom$)).mp.
26. or/20-25
27. 12 or 19 or 26
28. Rehabilitation/
29. Exercise Movement Techniques/ or Exercise Therapy/
30. (rehabilitat$ or fitness or exercis$ or train$).mp.
31. 28 or 29 or 30
32. randomized controlled trial.pt.
33. controlled clinical trial.pt.
34. randomized.ab.
35. randomised.ab.
36. Randomized Controlled Trials as Topic/
37. randomly.ab.
38. trial.ti.
39. 32 or 33 or 34 or 35 or 36 or 37 or 38
40. exp animals/ not humans.sh.
41. 39 not 40
42. 27 and 31 and 41
43. limit 42 to yr="2014 -Current"

Table S2. EMBASE search strategy

1. chronic obstructive lung disease/
2. emphysema$.mp.
3. (chronic$ adj3 bronchiti$).mp.
4. (obstruct$ adj3 (pulmonary or lung$ or airway$ or airflow$ or bronch$ or respirat$)).mp.
5. COPD.mp.
6. COAD.mp.
7. COBD.mp.
8. AECB.mp.
9. AECOPD.mp.
10. exp chronic bronchitis/
11. or/1-10
12. exp Bronchiectasis/
13. bronchiect$.mp.
14. bronchoect$.mp.
15. kartagener$.mp.
16. (ciliary adj3 dyskinesia).mp.
17. (bronchial$ adj3 dilat$).mp.
18. or/12-17
19. interstitial lung disease/
20. lung fibrosis/
21. lung sarcoidosis/
22. (interstitial$ adj3 (lung$ or disease$ or pneumon$)).mp.
23. ((pulmonary$ or lung$ or alveoli$) adj3 (fibros$ or fibrot$)).mp.
24. ((pulmonary$ or lung$) adj3 (sarcoid$ or granulom$)).mp.
25. or/20-24
26. 11 or 18 or 25
27. Rehabilitation/
28. kinesiotherapy/
29. (rehabilitat$ or fitness or exercis$ or train$).mp.
30. 27 or 28 or 29
31. randomized controlled trial.pt.
32. controlled clinical trial.pt.
33. randomized.ab.
34. randomised.ab.
35. Randomized Controlled Trials as Topic/
36. randomly.ab.
37. trial.ti.
38. 31 or 32 or 33 or 34 or 35 or 36 or 37
39. exp animal/ not human.sh.
40. 38 not 39
41. 26 and 30 and 40
42. limit 41 to yr="2014 -Current"

Table S3. CINAHL search strategy

1. (MH "Lung Diseases, Obstructive")
2. (MH "Pulmonary Disease, Chronic Obstructive+")
3. TX emphysema*
4. TX chronic* N3 bronchit*
5. TX (obstruct* N3 (pulmonary or lung* or airway* or airflow* or bronch* or respirat*))
6. TX COPD
7. TX COAD
8. TX COBD
9. TX AECB
10. TX AECOPD
11. (MH "Bronchitis, Chronic")
12. or/1-11
13. (MH "Bronchiectasis")
14. TX bronchiect*
15. TX Bronchoect*.
16. TX Kartagener*
17. TX (ciliary N3 dyskinesia)
18. TX (bronchial* N3 dilat*)
19. or/13-18
20. (MH "Lung Diseases, Interstitial")
21. (MH "Pulmonary Fibrosis")
22. TX (interstitial* N3 (lung* or disease* or pneumon*))
23. TX ((pulmonary* or lung* or alveoli*) N3 (fibros* or fibrot*))
24. TX ((pulmonary* or lung*) N3 (sarcoid* or granulom*))
25. or/20-24
26. 12 or 19 or 25
27. (MH "Rehabilitation")
28. (MH "Therapeutic Exercise")
29. TX rehabilitat* or fitness or exercis* or train*
30. 27 or 28 or 29
31. (MH "Randomized Controlled Trials")
32. randomized.ab.
33. randomised.ab.
34. randomly.ab.
35. trial.ti.
36. 31 or 32 or 33 or 34 or 35
37. (MH "Animals+")
38. 36 not 37
39. 26 and 30 and 38 (Published Date: 20140301-)

Table S4. CENTRAL search strategy

1. MESH DESCRIPTOR Lung Diseases, Obstructive
2. MESH DESCRIPTOR Pulmonary Disease, Chronic Obstructive EXPLODE ALL TREES
3. emphysema*
4. chronic* ADJ3 bronchiti*
5. obstruct* ADJ3 (pulmonary OR lung* OR airway* OR airflow* OR bronch* OR respirat*)
6. COPD
7. COAD
8. COBD
9. AECB
10. AECOPD
11. MESH DESCRIPTOR Bronchitis, Chronic EXPLODE ALL TREES

12. 1 OR 2 OR 3 OR 4 OR 5 OR 6 OR 7 OR 8 OR 9 OR 10 OR 11
13. MESH DESCRIPTOR Bronchiectasis EXPLODE ALL TREES
14. bronchiect*
15. Bronchoect*.
16. Kartagener*
17. ciliary ADJ3 dyskinesia
18. bronchial* ADJ3 dilat*
19. 13 OR 14 OR 15 OR 16 OR 17 OR 18
20. MESH DESCRIPTOR Lung Diseases, Interstitial
21. MESH DESCRIPTOR Pulmonary Fibrosis
22. MESH DESCRIPTOR Sarcoidosis, Pulmonary
23. interstitial* ADJ3 (lung* OR disease* OR pneumon*
24. ((pulmonary* OR lung* OR alveoli*) ADJ3 (fibros* OR fibrot*))
25. (pulmonary* OR lung* OR alveoli*) ADJ3 (fibros* OR fibrot*)
26. 20 OR 21 OR 22 OR 23 OR 24 OR 25
27. 12 OR 19 OR 26
28. MESH DESCRIPTOR Rehabilitation
29. (MESH DESCRIPTOR Exercise Therapy
30. MESH DESCRIPTOR Exercise Movement Techniques
31. rehabilitat* OR fitness* OR exercis* or train*
32. #28 OR #29 OR #30 OR #31
33. MESH DESCRIPTOR Randomized Controlled Trials as Topic EXPLODE ALL TREES
34. Randomized:AB
35. Randomised:AB
36. Randomly:AB
37. Trial:TI
38. #33 OR #34 OR #35 OR #36 OR #37
39. MESH DESCRIPTOR Animals EXPLODE ALL TREES
40. 38 NOT 39
41. 27 AND 32 AND 40
42. 01/03/2014 TO DATE OF SEARCH:CD
43. 41 AND 42

Table S5. PEDro search strategy

1. Abstract/Title: rehabilitat*

Topic: chronic respiratory disease
Method: clinical trial
New records added since: 01/03/2014

2. Abstract/Title: fitness

Topic: chronic respiratory disease
Method: clinical trial
New records added since: 01/03/2014

3. Abstract/Title: exercis*

Topic: chronic respiratory disease
Method: clinical trial
New records added since: 01/03/2014

4. Abstract/Title: train*

Topic: chronic respiratory disease
Method: clinical trial
New records added since: 01/03/2014

Table S6. Comparisons within included studies

Study	Diagnosis	Comparison	MCID of outcomes
Baumann 2012	COPD	Centre PR vs Usual Care	No
Benzo 2016	COPD	Home PR vs Usual Care	Yes
Benzo 2021	COPD	Home PR vs Usual Care	No
Benzo 2022	COPD	Home PR vs Usual Care	Yes
Bernocchi 2016	COPD	Centre PR vs Usual Care	No
Bourne 2017	COPD	Home PR vs Centre PR	No
Bourne 2022	COPD	Home PR vs Usual Care	No
Casaburi 2004	COPD	Centre PR vs Usual Care	No
Casey 2013	COPD	Centre PR vs Usual Care	No
Cedeno de Jesus 2022	Bronchiectasis	Centre PR vs Usual Care	Yes
Cerdan-de-las-Heras 2021	ILD	Home PR vs Usual Care	No
Cerdan-de-las-Heras 2022	COPD	Home PR vs Centre PR	No
Cerdan-de-las-Heras 2022	ILD	Home PR vs Centre PR	No
Chen 2018	COPD	Home PR vs Usual Care	No
Cox 2022	Mixed	Home PR vs Centre PR	Yes
Dale 2014	ILD	Centre PR vs Usual Care	No
Deepak 2014	AECOPD	Centre PR vs Usual Care	Yes
Dowman 2017	ILD	Centre PR vs Usual Care	Yes
Eaton 2009	AECOPD	Centre PR vs Usual Care	No
Ercin 2020	COPD	Home PR vs Centre PR	No
Faulkner 2010	COPD	Centre PR vs Usual Care	No
Gottlieb 2011	COPD	Centre PR vs Usual Care	Yes
Hansen 2020/2023	COPD	Home PR vs Centre PR	Yes
Hoff 2007	COPD	Centre PR vs Usual Care	No
Holland 2008	ILD	Centre PR vs Usual Care	No
Holland 2017	COPD	Home PR vs Centre PR	Yes
Horton 2018	COPD	Home PR vs Centre PR	Yes
Johnson-Warrington 2016	AECOPD	Home PR vs Usual Care	Yes
Jose 2021	Bronchiectasis	Home PR vs Usual Care	No
Kataoka 2023	ILD	Centre vs Usual Care	No
Ku 2017	ILD	Centre PR vs Usual Care	No
Lahham 2020	COPD	Home PR vs Usual Care	Yes
Lee 2022	COPD	Centre PR vs Usual Care	No
Maglakelidze 2022	COPD	Centre vs Usual Care	No
Majewska-Pulsakowska 2016	COPD	Centre PR vs Usual Care	No
Maltais 2008	COPD	Home PR vs Centre PR	No
Man 2004	AECOPD	Centre PR vs Usual Care	No
Mitchell 2014	COPD	Home PR vs Usual Care	Yes
Naz 2018	ILD	Centre PR vs Usual Care	No
Nyberg 2014	COPD	Centre PR vs Usual Care	No
O'Shea 2007	COPD	Centre PR vs Usual Care	No
Perez-Bogerd 2018	ILD	Centre PR vs Usual Care	Yes
Tsai 2017	COPD	Home PR vs Usual Care	No
Vainshelboim 2014	ILD	Centre PR vs Usual Care	No
Vasilopoulou 2017	COPD	Centre PR vs Usual Care	Yes
Wallaert 2020	ILD	Centre PR vs Usual Care	No
Widyastuti 2018	COPD	Home PR vs Centre PR	Yes
Wootton 2014	COPD	Centre PR vs Usual Care	No
Zanaboni 2023	COPD	Home PR vs Usual Care	No

Table S7. Included studies reporting adverse event data

Study	Diagnosis	Comparison	Adverse event reporting	Intervention related adverse events
Baumann 2012	COPD	Centre PR vs Usual Care	Rehabilitation group only	0 events
Benzo 2021	COPD	Home PR vs Usual Care	Group level (data for both groups)	0 events
Benzo 2022	COPD	Home PR vs Usual Care	Rehabilitation group only	0 events
Bernocchi 2018	COPD	Centre PR vs Usual Care	Rehabilitation group only	0 events
Bourne 2017	COPD	Home PR vs Centre	Group level (data for both	3 events in centre (back pain,

		PR	groups)	inguinal pain, common cold), 2 events in home (back pain, musculoskeletal chest pain)
Bourne 2022	COPD	Home PR vs Usual Care	Group level (data for both groups)	0 events
Casaburi 2004	COPD	Centre PR vs Usual Care	Rehabilitation group only	0 events
Casey 2013	COPD	Centre PR vs Usual Care	Study level (combined data for both groups)	1 event (shortness of breath) to baseline ISWT testing, 1 upon arrival at intervention session (chest pain)
Cedeno de Jesus 2022	Bronchiectasis	Centre PR vs Usual Care	Rehabilitation group only	0 events
Cerdan-de-las-Heras 2021	ILD	Home PR vs Usual Care	Study level (combined data for both groups)	0 events
Cerdan-de-las-Heras 2022	COPD	Home PR vs Centre PR	Home rehabilitation group only	0 events
Cerdan-de-las-Heras 2022	ILD	Home PR vs Usual Care	Home rehabilitation group only	0 events
Chen 2018	COPD	Home PR vs Usual Care	Study level (combined data for both groups)	0 events during intervention, 1 event (sore lower limb) following strength testing
Cox 2021	Mixed	Home PR vs Centre PR	Group level (data for both groups)	0 events
Dale 2014	ILD	Centre PR vs Usual Care	Rehabilitation group only	0 events
Dowman 2017	ILD	Centre PR vs Usual Care	Rehabilitation group only	0 events
Eaton 2009	AECOPD	Centre PR vs Usual Care	Rehabilitation group only	0 events
Ercin 2020	COPD	Home PR vs Centre PR	Study level (combined data for both groups)	0 events
Faulkner 2010	COPD	Centre PR vs Usual Care	Study level (combined data for both groups)	0 events
Hansen 2020/Hansen 2023	COPD	Home PR vs Centre PR	Group level (data for both groups)	2 events with centre PR related to overload with subsequent pain in the knee and groin (did not require medical treatment).
Hoff 2007	COPD	Centre PR vs Usual Care	Study level (combined data for both groups)	0 events
Holland 2008	ILD	Centre PR vs Usual Care	Rehabilitation group only	0 events
Holland 2017	COPD	Home PR vs Centre PR	Group level (data for both groups)	0 events
Horton 2018	COPD	Home PR vs Centre PR	Group level (data for both groups)	0 events
Johnson-Warrington 2016	AECOPD	Home PR vs Usual Care	Study level (combined data for both groups)	0 serious events
Jose 2021	Bronchiectasis	Home PR vs Usual Care	Rehabilitation group only	0 events
Kataoka 2023	ILD	Centre PR vs Usual Care	Group level (data for both groups)	0 events
Ku 2017	ILD	Centre PR vs Usual Care	Study level (combined data for both groups)	0 events
Lee 2022	COPD	Centre PR vs Usual Care	Study level (combined data for both groups)	0 events
Maglakelidze 2022	COPD	Centre PR vs Usual care	Study level (combined data for both groups)	0 events
Majewska-Pulsakowska 2016	COPD	Centre PR vs Usual Care	Group level (data for both groups)	0 events
Maltais 2008	COPD	Home PR vs Centre PR	Group level (data for both groups)	0 serious events
Man 2004	AECOPD	Centre PR vs Usual Care	Rehabilitation group only	0 events
Naz 2018	ILD	Centre PR vs Usual Care	Rehabilitation group only	0 events
Nyberg 2014	COPD	Centre PR vs Usual Care	Group level (data for both groups)	8 participants reported a total number of 28 adverse events distributed over 18 (3.6%) of the attended exercise sessions. All adverse events were minor and temporary. The adverse events were musculoskeletal (such as pain or soreness: 64%), related to the elastic resistance bands (such as bruising, pain, laceration, swelling:

				32%), and dizziness (4%). Seven out of the nine (78%) adverse events related to the elastic resistance bands was reported during the first seven sessions.
O'Shea 2007	COPD	Centre PR vs Usual Care	Rehabilitation group only	2 events (acute low back pain, and one mild adductor strain) which resolved after a week's rest
Perez-Bogerd 2018	ILD	Centre PR vs Usual Care	Rehabilitation group only	0 events
Tsai 2017	COPD	Home PR vs Usual Care	Rehabilitation group only	0 events
Vainshelboim 2014	ILD	Centre PR vs Usual Care	Rehabilitation group only	0 serious events
Wallaert 2020	ILD	Centre PR vs Usual Care	Study level (combined data for both groups)	0 serious events
Wootton 2014	COPD	Centre PR vs Usual Care	Rehabilitation group only	0 events
Zanaboni 2023	COPD	Home PR vs Home PR vs Usual Care	Group level (data for all groups)	0 events

Table S8. Summary of findings:Pulmonary Rehabilitation compared to usual care for COPD

Pulmonary Rehabilitation compared to Usual care for COPD

Patient or population: COPD
Setting:
Intervention: Pulmonary Rehabilitation
Comparison: Usual care

Outcomes	Anticipated absolute effects* (95% CI)		Relative effect (95% CI)	№ of participants (studies)	Certainty of the evidence (GRADE)	Comments
	Risk with Usual care	**Risk with Pulmonary Rehabilitation**				
Exercise capacity (6MWT)	101 per 1,000	**557 per 1,000** (70 to 1,000)	**RR 5.51** (0.69 to 44.06)	247 (3 RCTs)	⨁⨁◯◯ Low[a]	Pulmonary Rehabilitation may result in a large increase in the number of people achieving MCID for exercise capacity (6MWT).
Exercise capacity (ISWT)	164 per 1,000	**245 per 1,000** (151 to 401)	**RR 1.50** (0.92 to 2.45)	227 (2 RCTs)	⨁⨁◯◯ Low[b]	Pulmonary Rehabilitation may result in an increase in the number of people achieving a MCID in exercise capacity (ISWT).

Pulmonary Rehabilitation compared to Usual care for COPD

Patient or population: COPD
Setting:
Intervention: Pulmonary Rehabilitation
Comparison: Usual care

Outcomes	Anticipated absolute effects* (95% CI)		Relative effect (95% CI)	№ of participants (studies)	Certainty of the evidence (GRADE)	Comments
	Risk with Usual care	**Risk with Pulmonary Rehabilitation**				
Exercise capacity (ESWT)	217 per 1,000	**332 per 1,000** (174 to 631)	**RR 1.53** (0.80 to 2.91)	221 (2 RCTs)	⨁◯◯◯ Very low[c]	The evidence is very uncertain about the effect of Pulmonary Rehabilitation on the number of people achieving MCID in exercise capacity (ESWT).
QoL - CRQ (Dyspnoea)	289 per 1,000	**422 per 1,000** (347 to 515)	**RR 1.46** (1.20 to 1.78)	670 (4 RCTs)	⨁⨁⨁◯ Moderate[d]	Pulmonary Rehabilitation likely results in an increase in the number of people achieving MCID in CRQ (Dyspnoea).
QoL - CRQ (Fatigue)	271 per 1,000	**436 per 1,000** (342 to 564)	**RR 1.61** (1.26 to 2.08)	665 (4 RCTs)	⨁⨁⨁◯ Moderate[e]	Pulmonary Rehabilitation likely results in an increase in the number of people achieving MCID in CRQ (Fatigue).
QoL - CRQ (Emotional function)	226 per 1,000	**328 per 1,000** (239 to 447)	**RR 1.45** (1.06 to 1.98)	670 (4 RCTs)	⨁⨁⨁◯ Moderate[f]	Pulmonary Rehabilitation likely results in an increase in the number of people achieving a MCID in CRQ (Emotional function).
QoL - CRQ (Mastery)	337 per 1,000	**412 per 1,000** (317 to 530)	**RR 1.22** (0.94 to 1.57)	670 (4 RCTs)	⨁◯◯◯ Very low[g]	The evidence is very uncertain about the effect of pulmonary Rehabilitation on the number of people achieving a MCID in CRQ (Mastery).

***The risk in the intervention group** (and its 95% confidence interval) is based on the assumed risk in the comparison group and the **relative effect** of the intervention (and its 95% CI).

CI: confidence interval; **RR:** risk ratio

GRADE Working Group grades of evidence
High certainty: we are very confident that the true effect lies close to that of the estimate of the effect.
Moderate certainty: we are moderately confident in the effect estimate: the true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different.
Low certainty: our confidence in the effect estimate is limited: the true effect may be substantially different from the estimate of the effect.
Very low certainty: we have very little confidence in the effect estimate: the true effect is likely to be substantially different from the estimate of effect.

Table S9: Summary of findings: Pulmonary Rehabilitation compared to usual care for ILD

Pulmonary Rehabilitation compared to Usual care for ILD

Patient or population: ILD
Setting:
Intervention: Pulmonary Rehabilitation
Comparison: Usual care

Outcomes	Anticipated absolute effects* (95% CI)		Relative effect (95% CI)	№ of participants (studies)	Certainty of the evidence (GRADE)	Comments
	Risk with Usual care	**Risk with Pulmonary Rehabilitation**				

Pulmonary Rehabilitation compared to Usual care for ILD

Patient or population: ILD
Setting:
Intervention: Pulmonary Rehabilitation
Comparison: Usual care

Outcomes	Anticipated absolute effects* (95% CI)		Relative effect (95% CI)	№ of participants (studies)	Certainty of the evidence (GRADE)	Comments
	Risk with Usual care	**Risk with Pulmonary Rehabilitation**				
Exercise capacity (6MWT)	152 per 1,000	**341 per 1,000** (196 to 593)	**RR 2.24** (1.29 to 3.90)	192 (2 RCTs)	⨁⨁⨁◯ Moderate[a]	Pulmonary Rehabilitation likely results in an increase in the number of people achieving a MCID in exercise capacity (6MWT). .
QoL - CRQ (Dyspnoea)	297 per 1,000	**478 per 1,000** (258 to 879)	**RR 1.61** (0.87 to 2.96)	133 (1 RCT)	⨁⨁◯◯ Low[b]	Pulmonary Rehabilitation may result in an increase in the number of people achieving a MCID in CRQ (Dyspnoea) .
QoL - CRQ (Fatigue)	234 per 1,000	**593 per 1,000** (342 to 966)	**RR 2.53** (1.46 to 4.12)	128 (1 RCT)	⨁⨁⨁◯ Moderate[c]	Pulmonary Rehabilitation likely results in an increase in the number of people achieving a MCID in CRQ (Fatigue) .
QoL - CRQ (Emotional function)	375 per 1,000	**419 per 1,000** (322 to 521)	**OR 1.20** (0.79 to 1.81)	133 (1 RCT)	⨁⨁◯◯ Low[d]	Pulmonary Rehabilitation may result in an increase in the number of people achieving MCID in CRQ (Emotional function).
QoL - CRQ (Mastery)	333 per 1,000	**567 per 1,000** (377 to 847)	**RR 1.70** (1.13 to 2.54)	132 (1 RCT)	⨁⨁⨁◯ Moderate[e]	Pulmonary Rehabilitation likely results in an increase in the number of people achieving a MCID in CRQ (Mastery).

***The risk in the intervention group** (and its 95% confidence interval) is based on the assumed risk in the comparison group and the **relative effect** of the intervention (and its 95% CI).

CI: confidence interval; **OR:** odds ratio; **RR:** risk ratio

GRADE Working Group grades of evidence
High certainty: we are very confident that the true effect lies close to that of the estimate of the effect.
Moderate certainty: we are moderately confident in the effect estimate: the true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different.
Low certainty: our confidence in the effect estimate is limited: the true effect may be substantially different from the estimate of the effect.
Very low certainty: we have very little confidence in the effect estimate: the true effect is likely to be substantially different from the estimate of effect.

Table S10: Summary of findings: Pulmonary Rehabilitation compared to Usual care for Bronchiectasis

Pulmonary Rehabilitation compared to Usual care for Bronchiectasis

Patient or population: Bronchiectasis
Setting:
Intervention: Pulmonary Rehabilitation
Comparison: Usual care

Outcomes	Anticipated absolute effects* (95% CI)		Relative effect (95% CI)	№ of participants (studies)	Certainty of the evidence (GRADE)	Comments
	Risk with Usual care	**Risk with Pulmonary Rehabilitation**				

Pulmonary Rehabilitation compared to Usual care for Bronchiectasis

Patient or population: Bronchiectasis
Setting:
Intervention: Pulmonary Rehabilitation
Comparison: Usual care

Outcomes	Anticipated absolute effects* (95% CI)		Relative effect (95% CI)	№ of participants (studies)	Certainty of the evidence (GRADE)	Comments
	Risk with Usual care	Risk with Pulmonary Rehabilitation				
Exercise capacity (6MWT)	467 per 1,000	**751 per 1,000** (406 to 1,000)	**RR 1.61** (0.87 to 2.96)	31 (1 RCT)	⨁◯◯◯ Very low[a]	The evidence is very uncertain about the effect of pulmonary Rehabilitation on achievement of MCID in exercise capacity (6MWT).

***The risk in the intervention group** (and its 95% confidence interval) is based on the assumed risk in the comparison group and the **relative effect** of the intervention (and its 95% CI).

CI: confidence interval; **RR:** risk ratio

GRADE Working Group grades of evidence
High certainty: we are very confident that the true effect lies close to that of the estimate of the effect.
Moderate certainty: we are moderately confident in the effect estimate: the true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different.
Low certainty: our confidence in the effect estimate is limited: the true effect may be substantially different from the estimate of the effect.
Very low certainty: we have very little confidence in the effect estimate: the true effect is likely to be substantially different from the estimate of effect.

Table S11: Summary of findings: Home-based pulmonary rehabilitation compared to centre-based pulmonary rehabilitation for chronic respiratory disease

Home-based pulmonary rehabilitation compared to Centre-based pulmonary rehabilitation for Chronic Respiratory Disease

Patient or population: Chronic Respiratory Disease
Setting:
Intervention: Home-based pulmonary rehabilitation
Comparison: Centre-based pulmonary rehabilitation

Outcomes	Anticipated absolute effects* (95% CI)		Relative effect (95% CI)	№ of participants (studies)	Certainty of the evidence (GRADE)	Comments
	Risk with Centre-based pulmonary rehabilitation	Risk with Home-based pulmonary rehabilitation				
Exercise capacity (6MWT)	429 per 1,000	**399 per 1,000** (304 to 480)	**RR 0.93** (0.71 to 1.12)	410 (4 RCTs)	⨁⨁◯◯ Low[a]	Home-based pulmonary rehabilitation may result in little to no difference in achievement of MCID in exercise capacity (6MWT) compared to centre-based pulmonary rehabilitation.
QoL - CRQ (Dyspnoea)	606 per 1,000	**599 per 1,000** (509 to 702)	**RR 0.99** (0.84 to 1.16)	437 (3 RCTs)	⨁⨁⨁◯ Moderate[b]	Home-based pulmonary rehabilitation likely results in little to no difference in in achievement of MCID in CRQ (Dyspnoea).compared to centre-based pulmonary rehabilitation.

Home-based pulmonary rehabilitation compared to Centre-based pulmonary rehabilitation for Chronic Respiratory Disease

Patient or population: Chronic Respiratory Disease
Setting:
Intervention: Home-based pulmonary rehabilitation
Comparison: Centre-based pulmonary rehabilitation

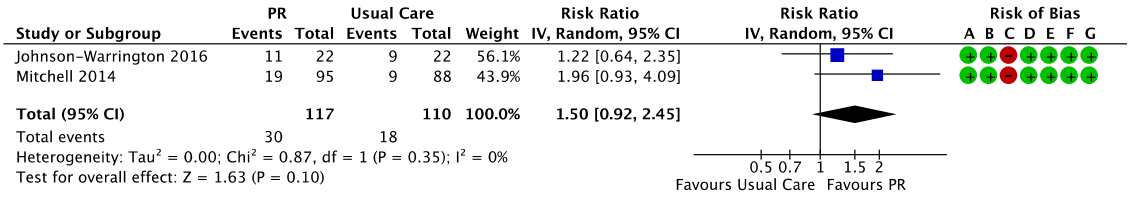
Outcomes	Anticipated absolute effects* (95% CI)		Relative effect (95% CI)	№ of participants (studies)	Certainty of the evidence (GRADE)	Comments
	Risk with Centre-based pulmonary rehabilitation	**Risk with Home-based pulmonary rehabilitation**				
QoL - CRQ (Fatigue)	549 per 1,000	**521 per 1,000** (422 to 647)	**RR 0.95** (0.77 to 1.18)	284 (2 RCTs)	⨁⨁◯◯ Low[c]	Home-based pulmonary rehabilitation may result in little to no difference compared to centre-based pulmonary rehabilitation in achievement of MCID in CRQ (Fatigue).
QoL - CRQ (Emotional function)	414 per 1,000	**426 per 1,000** (323 to 559)	**RR 1.03** (0.78 to 1.35)	286 (2 RCTs)	⨁⨁◯◯ Low[d]	Home-based pulmonary rehabilitation may result in little to no difference compared to centre-based pulmonary rehabilitation in achievement of MCID in CRQ (Emotional function).
QoL - CRQ (Mastery)	528 per 1,000	**459 per 1,000** (301 to 691)	**RR 0.87** (0.57 to 1.31)	283 (2 RCTs)	⨁◯◯◯ Very low[e]	The evidence is very uncertain about the effect of home-based pulmonary rehabilitation compared to centre-based pulmonary rehabilitation on achievement of MCID in CRQ (Mastery).

***The risk in the intervention group** (and its 95% confidence interval) is based on the assumed risk in the comparison group and the **relative effect** of the intervention (and its 95% CI).

CI: confidence interval; **RR:** risk ratio

GRADE Working Group grades of evidence
High certainty: we are very confident that the true effect lies close to that of the estimate of the effect.
Moderate certainty: we are moderately confident in the effect estimate: the true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different.
Low certainty: our confidence in the effect estimate is limited: the true effect may be substantially different from the estimate of the effect.
Very low certainty: we have very little confidence in the effect estimate: the true effect is likely to be substantially different from the estimate of effect.

Figure S1. Meta-analysis of the number of participants achieving MCID in ISWT (pulmonary rehabilitation versus usual care).



Risk of bias legend
(**A**) Random sequence generation (selection bias)
(**B**) Allocation concealment (selection bias)
(**C**) Blinding of participants and personnel (performance bias)
(**D**) Blinding of outcome assessment (detection bias)
(**E**) Incomplete outcome data (attrition bias)
(**F**) Selective reporting (reporting bias)
(**G**) Other bias

Figure S2. Meta-analysis of the number of participants achieving MCID in ESWT (pulmonary rehabilitation versus usual care).

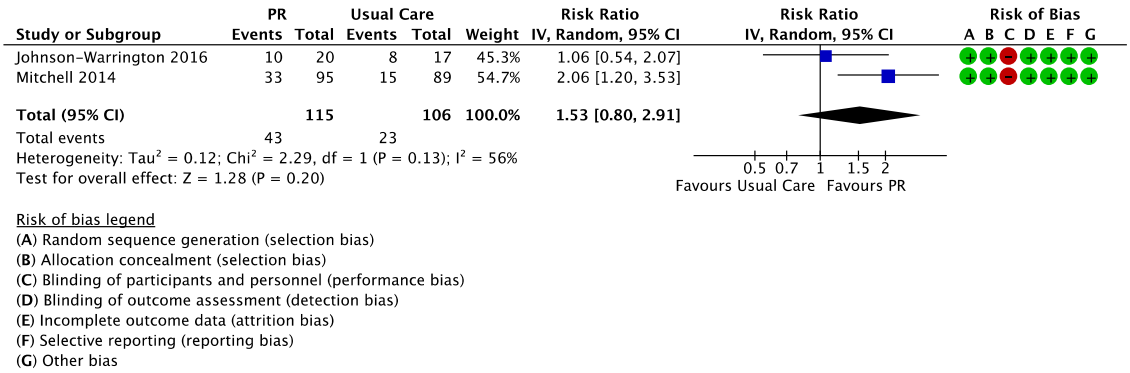


Figure S3. Meta-analysis of the number of participants achieving MCID in mMRC dyspnoea score (home-based pulmonary rehabilitation versus centre-based pulmonary rehabilitation)

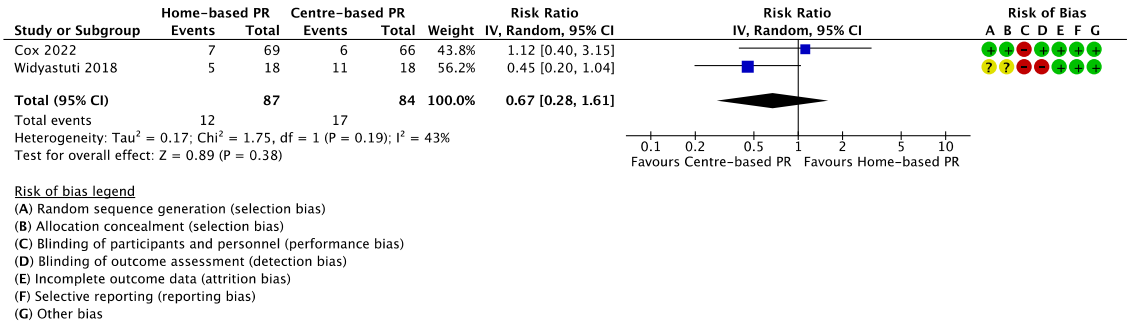
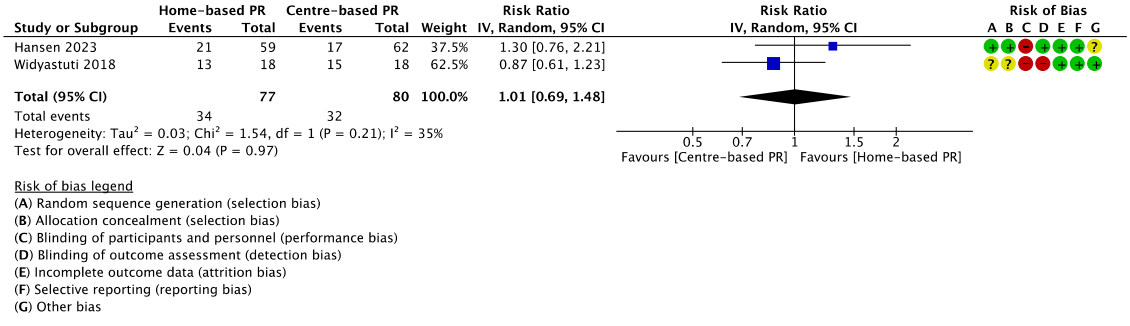


Figure S4. Meta-analysis of the number of participants achieving MCID in CAT score (home-based pulmonary rehabilitation versus centre-based pulmonary rehabilitation).



References for included studies (all included reports)

Baumann HJ, Kluge S, Rummel K, Klose H, Hennigs JK, Schmoller T, Meyer A. Low intensity, long-term outpatient rehabilitation in COPD: a randomised controlled trial. Respir Res. 2012;13(1):86. doi: 10.1186/1465-9921-13-86.

Benzo R, Vickers K, Novotny PJ, Tucker S, Hoult J, Neuenfeldt P, Connett J, Lorig K, McEvoy C. Health Coaching and Chronic Obstructive Pulmonary Disease Rehospitalization. A Randomized Study. Am J Respir Crit Care Med. 2016;194(6):672-80. doi: 10.1164/rccm.201512-2503OC.

Benzo RP, Ridgeway J, Hoult JP, Novotny P, Thomas BE, Lam NM, V Benzo M, Kramer K, Seifert S. Feasibility of a Health Coaching and Home-Based Rehabilitation Intervention With Remote Monitoring for COPD. Respir Care. 2021;66(6):960-971. doi: 10.4187/respcare.08580.

Benzo R, Hoult J, McEvoy C, Clark M, Benzo M, Johnson M, Novotny P. Promoting Chronic Obstructive Pulmonary Disease Wellness through Remote Monitoring and Health Coaching: A Clinical Trial. Ann Am Thorac Soc. 2022;19(11):1808-1817. doi: 10.1513/AnnalsATS.202203-214OC.

Benzo R, Novotny P, McEvoy C. Health Coaching Improves Self Management In COPD After A Hospitalization. Am J Respir Crit Care Med 2017;195:A6738.

Bernocchi P, Vitacca M, La Rovere MT, Volterrani M, Galli T, Baratti D, Paneroni M, Campolongo G, Sposato B, Scalvini S. Home-based telerehabilitation in older patients with chronic obstructive pulmonary disease and heart failure: a randomised controlled trial. Age Ageing. 2018;47(1):82-88. doi: 10.1093/ageing/afx146

Bourne S, DeVos R, North M, Chauhan A, Green B, Brown T, Cornelius V, Wilkinson T. Online versus face-to-face pulmonary rehabilitation for patients with chronic obstructive pulmonary disease: randomised controlled trial. BMJ Open. 2017;7(7):e014580. doi: 10.1136/bmjopen-2016-014580.

Casaburi R, Bhasin S, Cosentino L, Porszasz J, Somfay A, Lewis MI, Fournier M, Storer TW. Effects of testosterone and resistance training in men with chronic obstructive pulmonary disease. Am J Respir Crit Care Med. 2004;170(8):870-8. doi: 10.1164/rccm.200305-617OC.

Casey D, Murphy K, Devane D, Cooney A, McCarthy B, Mee L, Newell J, O'Shea E, Scarrott C, Gillespie P, Kirwan C, Murphy AW. The effectiveness of a structured education pulmonary rehabilitation programme for improving the health status of people with moderate and severe chronic obstructive pulmonary disease in primary care: the PRINCE cluster randomised trial. Thorax. 2013 Oct;68(10):922-8. doi: 10.1136/thoraxjnl-2012-203103.

Cedeño de Jesús S, Almadana Pacheco V, Valido Morales A, Muñíz Rodríguez AM, Ayerbe García R, Arnedillo-Muñoz A. Exercise Capacity and Physical Activity in Non-Cystic Fibrosis Bronchiectasis after a Pulmonary Rehabilitation Home-Based Programme: A Randomised Controlled Trial. Int J Environ Res Public Health. 2022;19(17):11039. doi: 10.3390/ijerph191711039.

Cerdán-de-Las-Heras J, Balbino F, Løkke A, Catalán-Matamoros D, Hilberg O, Bendstrup E. Tele-Rehabilitation Program in Idiopathic Pulmonary Fibrosis-A Single-Center Randomized Trial. Int J Environ Res Public Health. 2021 Sep 23;18(19):10016. doi: 10.3390/ijerph181910016.

Cerdán-de-Las-Heras J, Balbino F, Løkke A, Catalán-Matamoros D, Hilberg O, Bendstrup E. Effect of a New Tele-Rehabilitation Program versus Standard Rehabilitation in Patients with

Chronic Obstructive Pulmonary Disease. J Clin Med. 2021;11(1):11. doi: 10.3390/jcm11010011.

Chen Y, Niu M, Zhang X, Qian H, Xie A, Wang X. Effects of home-based lower limb resistance training on muscle strength and functional status in stable Chronic obstructive pulmonary disease patients. J Clin Nurs. 2018;27(5-6):e1022-e1037. doi: 10.1111/jocn.14131.

Cox NS, McDonald CF, Mahal A, Alison JA, Wootton R, Hill CJ, Zanaboni P, O'Halloran P, Bondarenko J, Macdonald H, Barker K, Crute H, Mellerick C, Wageck B, Boursinos H, Lahham A, Nichols A, Czupryn P, Corbett M, Handley E, Burge AT, Holland AE. Telerehabilitation for chronic respiratory disease: a randomised controlled equivalence trial. Thorax. 2022 Jul;77(7):643-651. doi: 10.1136/thoraxjnl-2021-216934.

Dale MT, McKeough ZJ, Munoz PA, Corte P, Bye PT, Alison JA. Exercise training for asbestos-related and other dust-related respiratory diseases: a randomised controlled trial. BMC Pulm Med. 2014;14:180. doi: 10.1186/1471-2466-14-180.

Deepak TH, Mohapatra PR, Janmeja AK, Sood P, Gupta M. Outcome of pulmonary rehabilitation in patients after acute exacerbation of chronic obstructive pulmonary disease. Indian J Chest Dis Allied Sci. 2014;56(1):7-12.

Dowman LM, McDonald CF, Hill CJ, Lee AL, Barker K, Boote C, Glaspole I, Goh NSL, Southcott AM, Burge AT, Gillies R, Martin A, Holland AE. The evidence of benefits of exercise training in interstitial lung disease: a randomised controlled trial. Thorax. 2017;72(7):610-619. doi: 10.1136/thoraxjnl-2016-208638.

Dowman L, Mcdonald C, Hill C, Lee A, Burge A, Holland A. Achieving the minimal important difference following exercise in ILD. Respirology 2018;23.

Eaton T, Young P, Fergusson W, Moodie L, Zeng I, O'Kane F, Good N, Rhodes L, Poole P, Kolbe J. Does early pulmonary rehabilitation reduce acute health-care utilization in COPD patients admitted with an exacerbation? A randomized controlled study. Respirology. 2009;14(2):230-8. doi: 10.1111/j.1440-1843.2008.01418.x.

Ercin DOZ, Alkan H, Findikoglu G, Dursunoglu N, Evyapan F, Ardic F. Interval Versus Continuous Aerobic Exercise Training in Overweight and Obese Patients With Chronic Obstructive Pulmonary Disease: A RANDOMIZED CONTROLLED STUDY. J Cardiopulm Rehabil Prev. 2020;40(4):268-275. doi: 10.1097/HCR.0000000000000519.

Faulkner J, Walshaw E, Campbell J, Jones R, Taylor R, Price D, Taylor AH. The feasibility of recruiting patients with early COPD to a pilot trial assessing the effects of a physical activity intervention. Prim Care Respir J. 2010 Jun;19(2):124-30. doi: 10.4104/pcrj.2010.00008.

Gottlieb V, Lyngsø AM, Nybo B, Frølich A, Backer V. Pulmonary rehabilitation for moderate COPD (GOLD 2)--does it have an effect? COPD. 2011;8(5):380-6. doi: 10.3109/15412555.2011.610393.

Hansen H, Bieler T, Beyer N, Kallemose T, Wilcke JT, Østergaard LM, Frost Andeassen H, Martinez G, Lavesen M, Frølich A, Godtfredsen NS. Supervised pulmonary tele-rehabilitation versus pulmonary rehabilitation in severe COPD: a randomised multicentre trial. Thorax. 2020;75(5):413-421. doi: 10.1136/thoraxjnl-2019-214246.

Hoff J, Tjønna AE, Steinshamn S, Høydal M, Richardson RS, Helgerud J. Maximal strength training of the legs in COPD: a therapy for mechanical inefficiency. Med Sci Sports Exerc. 2007 Feb;39(2):220-6. doi: 10.1249/01.mss.0000246989.48729.39.

Hansen H, Torre A, Kallemose T, Ulrik CS, Godtfredsen NS. Pulmonary telerehabilitation vs. conventional pulmonary rehabilitation - a secondary responder analysis. Thorax. 2023:thorax-2023-220065.

Holland AE, Hill CJ, Conron M, Munro P, McDonald CF. Short term improvement in exercise capacity and symptoms following exercise training in interstitial lung disease. Thorax. 2008 Jun;63(6):549-54. doi: 10.1136/thx.2007.088070.

Holland AE, Mahal A, Hill CJ, Lee AL, Burge AT, Cox NS, Moore R, Nicolson C, O'Halloran P, Lahham A, Gillies R, McDonald CF. Home-based rehabilitation for COPD using minimal resources: a randomised, controlled equivalence trial. Thorax. 2017 Jan;72(1):57-65. doi: 10.1136/thoraxjnl-2016-208514.

Horton EJ, Mitchell KE, Johnson-Warrington V, Apps LD, Sewell L, Morgan M, Taylor RS, Singh SJ. Comparison of a structured home-based rehabilitation programme with conventional supervised pulmonary rehabilitation: a randomised non-inferiority trial. Thorax. 2018 Jan;73(1):29-36. doi: 10.1136/thoraxjnl-2016-208506.

Johnson-Warrington V, Rees K, Gelder C, Morgan MD, Singh SJ. Can a supported self-management program for COPD upon hospital discharge reduce readmissions? A randomized controlled trial. Int J Chron Obstruct Pulmon Dis. 2016;11:1161-9. doi: 10.2147/COPD.S91253.

José A, Holland AE, Selman JPR, de Camargo CO, Fonseca DS, Athanazio RA, Rached SZ, Cukier A, Stelmach R, Dal Corso S. Home-based pulmonary rehabilitation in people with bronchiectasis: a randomised controlled trial. ERJ Open Res. 2021;7(2):00021-2021. doi: 10.1183/23120541.00021-2021.

Ku V, Janmeja AK, Aggarwal D, Sood P. Pulmonary rehabilitation in patients with interstitial lung diseases in an outpatient setting: a randomised controlled trial. Indian Journal of Chest Diseases and Allied Sciences 2017;59:75-80.

Lahham A,McDonald C, Mahal A, Hill C, Lee A, Moore R, Nicolson C, Cox N, Burge A, Gillies R, Holland A. Identifying Responders to Home and Hospitalbased Pulmonary Rehabilitation in People with COPD: analysis from the Homebase Trial. Respirology 2020;25:40.

Lahham A, McDonald CF, Moore R, Cox NS, Rawlings S, Nichols A, Liacos A, Holland AE. The impact of home-based pulmonary rehabilitation on people with mild chronic obstructive pulmonary disease: A randomised controlled trial. Clin Respir J. 2020;14(4):335-344. doi: 10.1111/crj.13138.

Lee SW, Park JJ, Lyu YR, Lee EJ, Kim SY, Kang W, Son JW, Jung IC, Park YC. The effect of lung-conduction exercise in chronic obstructive pulmonary disease: Randomized, assessor-blind, multicenter pilot trial. Medicine (Baltimore). 2022;101(3):e28629. doi: 10.1097/MD.0000000000028629.

Majewska-Pulsakowska M, Wytrychowski K, Rożek-Piechura K. The Role of Inspiratory Muscle Training in the Process of Rehabilitation of Patients with Chronic Obstructive Pulmonary Disease. Adv Exp Med Biol. 2016;885:47-51. doi: 10.1007/5584_2015_194.

Maltais F, Bourbeau J, Shapiro S, Lacasse Y, Perrault H, Baltzan M, Hernandez P, Rouleau M, Julien M, Parenteau S, Paradis B, Levy RD, Camp P, Lecours R, Audet R, Hutton B, Penrod JR, Picard D, Bernard S; Chronic Obstructive Pulmonary Disease Axis of Respiratory Health Network, Fonds de recherche en santé du Québec. Effects of home-based pulmonary

rehabilitation in patients with chronic obstructive pulmonary disease: a randomized trial. Ann Intern Med. 2008;149(12):869-78. doi: 10.7326/0003-4819-149-12-200812160-00006.

Man WD, Polkey MI, Donaldson N, Gray BJ, Moxham J. Community pulmonary rehabilitation after hospitalisation for acute exacerbations of chronic obstructive pulmonary disease: randomised controlled study. BMJ. 2004;329(7476):1209. doi: 10.1136/bmj.38258.662720.3A.

Mitchell KE, Johnson-Warrington V, Apps LD, Bankart J, Sewell L, Williams JE, Rees K, Jolly K, Steiner M, Morgan M, Singh SJ. A self-management programme for COPD: a randomised controlled trial. Eur Respir J. 2014 Dec;44(6):1538-47. doi: 10.1183/09031936.00047814.

Naz I, Ozalevli S, Ozkan S, Sahin H. Efficacy of a Structured Exercise Program for Improving Functional Capacity and Quality of Life in Patients With Stage 3 and 4 Sarcoidosis: A RANDOMIZED CONTROLLED TRIAL. J Cardiopulm Rehabil Prev. 2018 Mar;38(2):124-130. doi: 10.1097/HCR.0000000000000307.

Nyberg A, Lindström B, Rickenlund A, Wadell K. Low-load/high-repetition elastic band resistance training in patients with COPD: a randomized, controlled, multicenter trial. Clin Respir J. 2015;9(3):278-88. doi: 10.1111/crj.12141.

O'Shea SD, Taylor NF, Paratz JD. A predominantly home-based progressive resistance exercise program increases knee extensor strength in the short-term in people with chronic obstructive pulmonary disease: a randomised controlled trial. Aust J Physiother. 2007;53(4):229-37. doi: 10.1016/s0004-9514(07)70003-x

Perez-Bogerd S, Wuyts W, Barbier V, Demeyer H, Van Muylem A, Janssens W, Troosters T. Short and long-term effects of pulmonary rehabilitation in interstitial lung diseases: a randomised controlled trial. Respir Res. 2018;19(1):182. doi: 10.1186/s12931-018-0884-y.

Tsai LL, McNamara RJ, Moddel C, Alison JA, McKenzie DK, McKeough ZJ. Home-based telerehabilitation via real-time videoconferencing improves endurance exercise capacity in patients with COPD: The randomized controlled TeleR Study. Respirology. 2017;22(4):699-707. doi: 10.1111/resp.12966.

Vainshelboim B, Oliveira J, Yehoshua L, Weiss I, Fox BD, Fruchter O, Kramer MR. Exercise training-based pulmonary rehabilitation program is clinically beneficial for idiopathic pulmonary fibrosis. Respiration. 2014;88(5):378-88. doi: 10.1159/000367899.

Vasilopoulou M, Papaioannou AI, Kaltsakas G, Louvaris Z, Chynkiamis N, Spetsioti S, Kortianou E, Genimata SA, Palamidas A, Kostikas K, Koulouris NG, Vogiatzis I. Home-based maintenance tele-rehabilitation reduces the risk for acute exacerbations of COPD, hospitalisations and emergency department visits. Eur Respir J. 2017;49(5):1602129. doi: 10.1183/13993003.02129-2016.

Wallaert B, Kyheng M, Labreuche J, Stelianides S, Wemeau L, Grosbois JM. Long-term effects of pulmonary rehabilitation on daily life physical activity of patients with stage IV sarcoidosis: A randomized controlled trial. Respir Med Res. 2020;77:1-7. doi: 10.1016/j.resmer.2019.10.003.

Widyastuti K, Makhabah DN, Setijadi AR, Sutanto YS, Suradi, Ambrosino N. Benefits and costs of home pedometer assisted physical activity in patients with COPD. A preliminary randomized controlled trial. Pulmonology. 2018;24(4):211-218. doi: 10.1016/j.pulmoe.2018.01.006.

Wootton SL, Ng LW, McKeough ZJ, Jenkins S, Hill K, Eastwood PR, Hillman DR, Cecins N, Spencer LM, Jenkins C, Alison JA. Ground-based walking training improves quality of life and exercise capacity in COPD. Eur Respir J. 2014;44(4):885-94. doi: 10.1183/09031936.00078014.