

## Online Supplement

### **Appendix 1. Search strategies**

#### **Medline:**

1. Exp Oxygen Inhalation Therapy/
2. Exp Oxygen/
3. ((domicil\* or home\*) and oxygen).mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept, rare disease supplementary concept, unique identifier]
4. (Oxygen adj2 therap\*).mp.
5. (Interstitial adj2 pneumon\*).mp.
6. (Interstitial adj2 lung\*).mp.
7. Pulmonary fibrosis.mp.
8. (Interstitial adj2 pulmon\*).mp.
9. Exp Idiopathic Pulmonary Fibrosis/
10. Exp Lung diseases, Interstitial/
11. Alveolitis.mp.
12. Granulomatos\*.mp.
13. Silicosis.mp.
14. Asbestosis.mp.
15. Berylliosis.mp.
16. (Hypersensitivity pneumonitis).mp.
17. (Systemic sclerosis).mp.
18. Polymyositis.mp.
19. Dermatomyositis.mp.
20. (Systemic lupus erythematos\*).mp.

21. Sarcoidosis.mp.
22. (Hamman-Rich syndrome).mp.
23. Bagassosis.mp.
24. Pneumoconios#s.mp.
25. exp Histiocytosis X/
26. exp Connective tissue diseases/
27. 1 or 2 or 3 or 4
28. 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19 or 20 or 21 or  
22 or 23 or 24 or 25
29. 27 and 28
30. Limit 27 to English language

**EMBASE:**

1. Exp oxygen therapy/
2. (Oxygen adj2 therap\*).mp.
3. Exp oxygen/
4. ((domicil\* or home\*) and oxygen).mp. [mp=title, abstract, subject headings, heading word,  
drug trade name, original title, device manufacturer, drug manufacturer, device trade name,  
keyword]
5. (Interstitial adj2 pneumon\*).mp.
6. (Interstitial adj2 lung?).mp.
7. Exp lung fibrosis/
8. (Interstitial adj2 pulmon\*).mp.
9. Exp fibrosing alveolitis/
10. Exp interstitial lung disease/
11. Granulomatos\*.mp.
12. Silicosis.mp.

13. Asbestosis.mp.
14. Berylliosis.mp.
15. (Hypersensitivity pneumonitis).mp.
16. (Systemic sclerosis).mp.
17. Polymyositis.mp.
18. Dermatomyositis.mp.
19. (Systemic lupus erythematos\*).mp.
20. Sarcoidosis.mp.
21. (Hamman-Rich syndrome).mp.
22. Bagassosis.mp.
23. Pneumoconios#s.mp.
24. exp Histiocytosis X/
25. exp Connective tissue diseases/
26. 1 or 2 or 3 or 4
27. 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19 or 20 or 21 or  
22 or 23 or 24 or 25
28. 26 and 27
29. Limit 26 to English language

**COCHRANE LIBRARY:**

1. MeSH descriptor: [Oxygen Inhalation Therapy] explode all trees
2. MeSH descriptor: [Oxygen] explode all trees
3. (Oxygen near/2 therap\*):ti,ab,kw (Word variations have been searched)
4. (Interstitial near/2 pneumon\*):ti,ab,kw (Word variations have been searched)
5. (Interstitial near/2 lung\*):ti,ab,kw (Word variations have been searched)
6. MeSH descriptor: [Pulmonary fibrosis] explode all trees
7. (Interstitial adj2 pulmon\*):ti,ab,kw (Word variations have been searched)

8. MeSH descriptor: [Idiopathic Pulmonary Fibrosis] explode all trees
9. MeSH descriptor: [Lung diseases, Interstitial] explode all trees
10. Alveolitis:ti,ab,kw (Word variations have been searched)
11. Silicosis:ti,ab,kw (Word variations have been searched)
12. Asbestosis:ti,ab,kw (Word variations have been searched)
13. Berylliosis:ti,ab,kw (Word variations have been searched)
14. (Hypersensitivity pneumonitis) :ti,ab,kw (Word variations have been searched)
15. (Systemic sclerosis) :ti,ab,kw (Word variations have been searched)
16. Polymyositis:ti,ab,kw (Word variations have been searched)
17. Dermatomyositis:ti,ab,kw (Word variations have been searched)
18. Sarcoidosis:ti,ab,kw (Word variations have been searched)
19. (Hamman-Rich syndrome) :ti,ab,kw (Word variations have been searched)
20. Bagassosis:ti,ab,kw (Word variations have been searched)
21. Granulomatos\*:ti,ab,kw (Word variations have been searched)
22. (Systemic lupus erythematos\*) :ti,ab,kw (Word variations have been searched)
23. Pnemoconios\*:ti,ab,kw (Word variations have been searched)
24. MeSH descriptor: [Histiocytosis X] explode all trees
25. MeSH descriptor: [Connective Tissue Diseases] explode all trees
26. #1 or #2 or #3
27. #4 or #5 or #6 or #7 or #8 or #9 or #10 or #11 or #12 or #13 or #14 or #15 or #16 or #17 or  
#18 or #19 or #20 or #21 or #22 or #23 or #24 or #25
28. #26 and #27

Table S1- Characteristics of included studies

Study name	Oxygen therapy type	Design	(n)	Characteristics	Participants Diagnoses	Disease severity		Intervention	Comparison	Outcome measures
Chailleux 1996 <sup>1</sup>	LTOT	Analysis of a nationwide database (ANATADIR Observatory) Cohort study	2117	Mean age 67.5 (8.8) 94.7% male	Pneumoconiosis (N=454)	Male FEV1 1.06±0.4 7 VC % pred. 59.9±19.2 PaO2 54.2±7.5	Female FEV1 0.82±0.37 VC % pred. 56.7±21.7 PaO2 54.3±6.9	NIV, VT or O <sub>2</sub> - via mouthpiece, nasal mask or tracheostomy Pneumoconiosis - NIV 3.1%; VT 0.7%; O <sub>2</sub> 96.3%  Fibrosis- NIV 1.7; VT 0.7%; O <sub>2</sub> 97.7%	No comparison group	Survival
				Mean age 68.2 (13.7) 54.8% male	Fibrosis (n=1663)	Male FEV1 1.45±0.6 3 VC % pred. 64.3±20.8 PaO2 52.2±8.2	Female FEV1 0.96±0.38 VC % pred. 60.0±19.4 PaO2 52.0±8.4			
Crockett 1991 <sup>2</sup>	LTOT	Retrospective audit	20	Male mean age 67±9.5 Female mean age 64.9±14.7	ILD	Not stated		Supplemental O <sub>2</sub> from O <sub>2</sub> concentrators via nasal prongs at low flow rate	No comparison, all participants were prescribed O <sub>2</sub>	Survival

Douglas 2000 <sup>3</sup>	LTOT	Retrospective audit	487	Mean age 70.52 years 70% male	IPF	VC 69.1 (18.7)% predicted DLCO 50.8 (16.4)% predicted	Recommended for LTOT	LTOT not recommended	Survival
Tomioka 2007 <sup>4</sup>	LTOT	Cross sectional and longitudinal study	46	Mean age 69.9±5.8 70% male	IPF	VC% pred. 71 (17.5)			HRQoL
Anderson 1984, <sup>5</sup> Bye 1982 <sup>6</sup>	Acute effects on exercise	Endurance tests on air and O <sub>2</sub> and CPET Order not randomised	16	Not stated	IPF (5); HP-gold (1); HP-pigeons (2); Asbestos exposure (1); Asbestos and silica exposure (1); Silicosis (1); Silica exposure (1); Silicosis and RA (1); Asbestosis (2); Sarcoidosis (1)	Mean (±SD) DLCO 47 (11); FEV1 71 (18)	Two way value containing 60% O <sub>2</sub>	Room air	Maximal working capacity (watts) Endurance time (mins)

Cao 2015 <sup>7</sup>	Acute effect on exercise	Retrospective audit of usual O <sub>2</sub> use during exercise		Mean age O <sub>2</sub> users 68.3±10.5 40.3% female Non O <sub>2</sub> users 66.6±11.0 41.1% female	Fibrotic interstitial lung disease	O <sub>2</sub> users: FVC% 61.3±18.9 DLCO% 37.5±12.8 Non O <sub>2</sub> users: FVC% 77.5±17.4 DLCO% 56.1±16.5	Use of O <sub>2</sub> during 6MWT	RA during 6MWT	Borg Scale 6MWD
Frank 2012 <sup>8</sup>	Acute effects on exercise	Retrospective review of 6MWT on usual O <sub>2</sub> vs. optimal O <sub>2</sub> level, order not randomised	70	Mean age 62.8 (O <sub>2</sub> )/ 61.5 (air), 80.5% male (O <sub>2</sub> )/ 65.5% male (air)	IPF	FVC% pred. 58.4 DLCO% pred. 27.7 (O <sub>2</sub> ) vs. 32.4 (air)	Optimal ambulatory O <sub>2</sub>	Baseline (some participants were already on O <sub>2</sub> and some had none)	6MWD Modified Borg Scale
Harris-Eze 1994 <sup>9</sup>	Acute effects of exercise	Crossover, randomised testing order Participants blinded from which gas they were given	7	Mean age 49 85.7% male	ILD	Mean (±SD) FEV1, L 2.55±0.24 (74%pred); FEV1/FVC% 79±2 DLCO % pred. 48±7	60% O <sub>2</sub>	Room air	Modified Borg Scale Maximal working capacity (watts)
Nishiyama 2013 <sup>10</sup>	Acute effects on exercise	Double blinded, placebo controlled, randomised crossover trial	20	Mean age 73.5 80% male	IPF	FVC% pred. 71 DLCO% pred. 57	Ambulatory O <sub>2</sub> -nasal cannula	Ambulatory air- nasal cannula	6MWD Modified Borg Scale
Pouwels-	Acute	Prospective	8	Mean age 68	IPF	Mean (±SD)	O <sub>2</sub> - face mask	Air	Maximal

Fry 2008 <sup>11</sup>	effects on exercise	crossover study, order not randomised		and 75% male		FVC% pred. 71.9 (9.7) DLCO% pred. 44.1 (7.8)	Amount determined by requirement to maintain SaO <sub>2</sub> level of 94%		working capacity (watts)
Visca 2011 <sup>12</sup>	Acute effects on exercise	Retrospective 6MWT on RA and O <sub>2</sub> , order not randomised	52	Mean age 59.4 59.2% male	(IIP) within the spectrum of idiopathic pulmonary fibrosis/fibrotic nonspecific interstitial pneumonia (n=34), connective tissue disease (n=8) fibrotic granulomatous (n=10).	Mean (±SD) FVC% pred. 58.1 (18.7) DLCO% pred. 25.6 (8.3)	Ambulatory O <sub>2</sub> -nasal cannulae except 3 participants who had Venturi mask	Baseline-room air	6MWD Modified Borg Scale
Swinburne 1991 <sup>13</sup>	Supplemental oxygen without exercise	Participants received each gas on two occasions, in a double-blind randomised fashion	10	Mean age 56.3 60% male	Cryptogenic fibrosing alveolitis (8); Amiodarone lung toxicity (1); Hypersensitivity pneumonitis (1) (Also studies COPD)	Mean (±SD) FEV1, L 56.3 (2.2) PaO <sub>2</sub> (mmHg) 48.0 (3.1)	Supplemental O <sub>2</sub> 28%- face mask	Air- face mask	VAS for breathlessness

Definition of abbreviations:

6MWT- 6 minute walk test; COPD- Chronic Obstructive Pulmonary Disease; CPET- cardiopulmonary exercise testing; DLCO – diffusing capacity for carbon monoxide; HRQoL= Health related quality of life; LTOT – long term oxygen therapy; NIV- non-invasive ventilation (nasal or oral mask); O<sub>2</sub>-Oxygen; Optimal ambulatory O<sub>2</sub>- Oxygen level individually determined for each patient that will keep oxygen saturation level above 90%; RA- Room air; VAS- Visual Analogue Scale; VC – vital capacity; VT- ventilation by tracheostomy.

Table S2- Risk of bias with reasons for judgements

Study name	Risk of bias	Bias justification
<b>Long Term Oxygen Therapy</b>		
Chailleux 1996	Selection bias: high Performance bias: high Detection bias: high Attrition bias: low Reporting bias: low	No comparison/ control group. All participants had oxygen therapy. All participants had oxygen therapy. Mortality data reported for all participants Data were reported for all outcomes.
Crockett 1991	Selection bias: high Performance bias: high Detection bias: high Attrition bias: low Reporting bias: low	Retrospective audit report, no comparison/control group. All participants had oxygen therapy. All participants had oxygen therapy. All 20 ILD participants accounted for. Data were reported for all outcomes.
Douglas 2000	Selection bias: high Performance bias: low Detection bias: low Attrition bias: low Reporting bias: low	No random allocation to oxygen or no oxygen No blinding, but should not affect outcome (mortality) No blinding, but should not affect outcome (mortality) Followup data for all participants for primary outcome (mortality) No evidence of selective reporting
Tomioka 2007	Selection bias: high Performance bias: high Detection bias: high Attrition bias: low Reporting bias: low	No randomisation. No blinding of participants reported and could have affected outcome (health-related quality of life). No blinding of assessors reported and could have affected outcome (health-related quality of life ). 9 of 12 dropouts accounted for. All data were included.
<b>Short-term oxygen therapy</b>		
Anderson 1984, Bye 1982	Selection bias: low Performance bias: low  Detection bias: high Attrition bias: unclear Reporting bias: unclear	“Studies were performed in random order on the same morning” “The oxygen delivery system was set up for every study (including all air studies), so that for any test the subjects were unable to discern whether they were breathing room air or supplemental oxygen.” (Bye) No report of assessor blinding. 22 recruited, dropouts are not reported Complete data only reported for two participants.
Cao 2015	Selection bias: high  Performance bias: high  Detection bias: high Attrition bias: low Reporting bias: low	No randomisation occurred in this retrospective study, all participants used oxygen as part of usual care or not and were allocated as such. No blinding occurred, retrospective data used, patients had oxygen as part of usual care and researchers could not be blinded. No blinding of assessors occurred, retrospective data used. All 1326 participants had reported data throughout the study. Data were reported for all outcomes.

Frank 2012	<p>Selection bias: high Performance bias: high</p> <p>Detection bias: high Attrition bias: low Reporting bias: low</p>	<p>"...retrospective review of anonymised data..."</p> <p>"The study has several limitations, mostly due to its retrospective nature. Since patients did not perform a 6MWT on a placebo air cylinder, the benefits observed in subjective measures could, at least partially, be related to a placebo effect."</p> <p>No blinding occurred as this was a retrospective study.</p> <p>Data were provided for all 70 patients.</p> <p>Data were reported for all outcomes.</p>
Harris-Eze 1994	<p>Selection bias: low Performance bias: low Detection bias: unclear Attrition bias: low Reporting bias: low</p>	<p>"The studies were conducted in a randomized order."</p> <p>"Subjects were blinded to the composition of the inspired gas."</p> <p>Blinding of assessors was not reported.</p> <p>Data were available for all 7 participants.</p> <p>Data were reported for all outcomes (Borg reported instead of included in a table).</p>
Nishiyama 2013	<p>Selection bias: low Performance bias: low Detection bias: low</p> <p>Attrition bias: low Reporting bias: low</p>	<p>"This was a ... randomized crossover trial of ambulatory oxygen versus ambulatory air."</p> <p>"This was a double blind, placebo controlled..."</p> <p>"Allocation was concealed from both the patients and the physicians who supervised the walk tests. The order of pairs was randomly determined."</p> <p>Data available for all 20 included participants.</p> <p>Outcomes for all 20 patients were reported for both control and intervention.</p>
Pouwels-Fry 2008	<p>Selection bias: high Performance bias: high Detection bias: high Attrition bias: high Reporting bias: low</p>	<p>Randomisation not reported.</p> <p>No blinding of participants was reported.</p> <p>No blinding of assessors was reported.</p> <p>"Thus 3 of the 11 patients were excluded..." eight remaining patients had data provided.</p> <p>Data were reported for all outcomes.</p>
Swinburn 1991	<p>Selection bias: low Performance bias: low</p> <p>Detection bias: low</p> <p>Attrition bias: low Reporting bias: low</p>	<p>Study conducted "in a double-blind randomised fashion."</p> <p>"Neither the patient nor the principal investigator was aware of the gas breathed, the sequence of the study, or values of SaO2 or ventilatory indices, which were all recorded by an assistant behind a screen."</p> <p>"Neither the patient nor the principal investigator was aware of the gas breathed, the sequence of the study, or values of SaO2 or ventilator indices, which were all recorded by an assistant behind a screen."</p> <p>All 10 ILD participants accounted for.</p> <p>Data were reported for all outcomes.</p>
Visca 2011	<p>Selection bias: high</p> <p>Performance bias: high Detection bias: high Attrition bias: low Reporting bias: low</p>	<p>Retrospective. "A review of the clinical records of ILD patients seen at the Royal Brompton Hospital... identified 52 ILD patients..."</p> <p>No blinding occurred as this was a retrospective study.</p> <p>No blinding occurred as this was a retrospective study.</p> <p>Data were available for all 52 included participants.</p> <p>Data were reported for all outcomes.</p>

Table S3- Dyspnea

Study name	Randomised order	Assessment tool	Test condition	Time point	Supplemental oxygen		Air	P-value	Comments
					Participants (n)	Mean ( $\pm$ SD)*	Mean ( $\pm$ SD)*		
Cao 2015	No	Modified Borg Scale	6MWT	End	Nadir	4.3 (2.0)	3.4 (1.7)	<0.0001	Retrospective comparison of oxygen users and non-oxygen users during a 6MWT
					SpO <sub>2</sub> <89%: Oxygen users n=439 Non-oxygen users n=252				
					Nadir	3.4 (1.9)	2.4 (1.6)	<0.0001	
					SpO <sub>2</sub> ≥89% Oxygen users n=373 Non-oxygen users n=262				
Nishiyama 2013	Yes	Modified Borg Scale	6MWT	End	20	5.8 (2.2)	6.2 (2.2)	0.57	Standard 6MWT with ambulatory O <sub>2</sub> and placebo air
				1min recovery		3.9 (2.4)	3.9 (2.2)	0.66	
				2mins recovery		2.3 (1.8)	2.3 (2.1)	0.42	
				End	20	3.8 (2.6)	1.8 (1.6)	0.49	Modified 6MWT performed at usual walking pace with ambulatory O <sub>2</sub> and placebo air
				1min recovery		2.7 (2.5)		0.84	
				2mins recovery		1.6 (1.8)		0.65	
Frank 2012	No	Modified Borg Scale	6MWT	Pre- 6MWT	41	1.1 (1.3)	1.1 (1.5)	0.22	Group uses O <sub>2</sub> already before entering the study, 6MWT on normal O <sub>2</sub> level, then optimal
				Post- 6MWT			4.5 (2.2)	4.8 (2.1)	

				Pre- 6MWT	29	1.1 (1.7)	1.4 (1.8)	0.07	O <sub>2</sub> concentration
				Post- 6MWT		3.7 (2.0)	4.1 (1.7)	0.13	Group not on O <sub>2</sub> prior to study, or for baseline. Baseline 6MWT then 6MWT on optimal O <sub>2</sub> concentration
Visca 2011	No	Modified Borg Scale	6MWT	Post-6MWT	52	4.75 (4-5) [median(95%CI)]	3.75 (3-4.3)	<0.00001	6MWT on room air followed by test on ambulatory O <sub>2</sub>
Harris-Eze 1994	Yes	Modified Borg Scale	CPET	Post- CPET	7	4 (1)	4 (1)	No significant difference	Borg results only mentioned in text, first incremental cycling test on room air, second on O <sub>2</sub>
Swinburne 1991	Yes	VAS (0-100)	At rest only	At rest only	10	30.2 (5.1)	48.1 (4.4)	<0.05	0= not breathless at all 100= extremely breathless 4L/min 100% O <sub>2</sub> and air supplied through gas cylinders

Definition of abbreviations: Ordinary 6MWT- The aim of a 6MWT is to cover as much distance as possible in 6 minutes; Free 6MWT- A free 6MWT allows the participant to walk at their normal pace as opposed to walking as fast as they can; Optimal O<sub>2</sub>- Oxygen level individually determined for each patient that will keep oxygen saturation level above 90%; VAS- Visual Analogue Scale; O<sub>2</sub>= Oxygen; P-value= comparison between intervention and comparison groups; p<0.05= significant; N= number of participants; \*= mean unless otherwise stated.

Table S4- Peak exercise capacity (watts)

Study name	Randomised order	Participants (n)	Supplemental oxygen Exercise Capacity Mean ( $\pm$ SD)	Air Exercise Capacity Mean ( $\pm$ SD)	P-value	Comments
Pouwels-Fry 2008	No	8	88*	78*	0.045	Incremental cycling test completed on air and O <sub>2</sub> where oxygen saturation was maintained at 94% or higher
Harris-Eze 1994	Yes	7	129 (6)	112 (6)	<0.005	Incremental cycling test completed on room air, and on O <sub>2</sub> in randomised order
Anderson 1984, Bye 1982	No	16	121 (43)	116 (45)	'not significant'	Incremental cycling tests completed on room air and 60% O <sub>2</sub> separately, order not randomised. Tested 60% WMAX

Definition of abbreviations:

O<sub>2</sub>= Oxygen; WMAX- Maximal work load; P-value= comparison between intervention and comparison groups; p<0.05= significant; N= number of participants; \*= no SD provided

Table S5-Peak oxygen uptake

Study name	Randomised order	Time point	Participants (n)	Supplemental oxygen Mean ( $\pm$ SD)	Air comparison Mean ( $\pm$ SD)	P-value	Comments
Harris-Eze 1994	Yes	Maximal exercise test	7	1.58(0.08) L/min	1.322(0.05) L/min	<0.005	First incremental cycling test on room air, second on O <sub>2</sub>
Bye 1982	No	Maximal exercise test	16	Not stated	1560 (545) ml/min	Not stated	Two incremental cycling tests, one on humidified air and the second on humidified O <sub>2</sub> at 60% concentration, order not randomised

Definition of abbreviations:

O<sub>2</sub>= Oxygen; P-value= comparison between intervention and comparison groups; p<0.05= significant; N= number of participants; VO<sub>2</sub>= Oxygen uptake

Table S6- Endurance time (minutes)

Study name	Randomised order	Participants (n)	Supplemental oxygen Time Mean (±SD) (mins)	Air Time Mean (±SD) (mins)	P-value	Comments
Anderson 1984, Bye 1982	Yes	16	13.9 (8.7)	8.0 (5.5)	<0.001	Two endurance cycling tests at 80% WMAX completed on room air and 60% O <sub>2</sub> separately, randomised order on same day

Definition of abbreviations:

O<sub>2</sub>= Oxygen; WMAX- Maximal work load; P-value= comparison between intervention and comparison groups; p<0.05= significant; N= number of participants

Table S7- 6-minute walk distance (meters)

Study name	Randomised order	Time point of oxygen administration	Supplemental oxygen		Air		P-value	Comments
			Participants (n)	6MWD (m) Mean ( $\pm$ SD)	6MWD (m) Mean ( $\pm$ SD)			
Cao 2015	No	During 6MWT	Nadir SpO <sub>2</sub> <89%: Oxygen users n=439	320 (117)	431 (113)	<0.0001	Retrospective comparison of oxygen users and non-oxygen users during 6MWT	
			Non-oxygen users n=252					
			Nadir SpO <sub>2</sub> ≥89% Oxygen users n=373	332 (102)	435 (96)	<0.0001		
			Non-oxygen users n=262					
Nishiyama 2013	Yes	Post- 6MWT	20	400 (80)	387 (80)	0.61	Ordinary 6MWT with ambulatory O <sub>2</sub> and placebo air	
		Post- 6MWT	20	328 (57)	322 (70)	0.78	Free 6MWT with ambulatory O <sub>2</sub> and placebo air	
Frank 2012	No	Post- 6MWT Group uses O <sub>2</sub> already before entering the study	41	93.4 (66.6)	76.5 (66.5)	0.02	6MWT on normal O <sub>2</sub> level, then optimal O <sub>2</sub> concentration	
		Post- 6MWT Group not on O <sub>2</sub> prior to study, or for baseline	29	216.2 (115.0)	135.0 (108.8)	<0.01	Baseline 6MWT then 6MWT on optimal O <sub>2</sub> concentration	

Visca 2011	No	Post- 6MWT	52	286.0 (14.9)	255.1 (16.8)	<0.0001	6MWT on room air followed by test on ambulatory O <sub>2</sub>
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Definition of abbreviations:

Ordinary 6MWT- The aim of a 6MWT is to cover as much distance as possible in 6 minutes. ; Free 6MWT- A free 6MWT allows the participant to walk at their normal pace as opposed to walking as fast as they can.; Optimal O<sub>2</sub>- Oxygen level individually determined for each patient that will keep oxygen saturation level above 90%; O<sub>2</sub>= Oxygen; P-value= comparison between intervention and comparison groups; p<0.05= significant; n= number of participants; m=metres

Table S8- Survival (months) with long term oxygen therapy

Study name	Participant diagnoses	Participants (n)	Median survival group (months)	Comments
Chailleux 1996	Pneumoconiosis group (96.3% O <sub>2</sub> treatment)	454	25	"Prognosis was found to be the worst in pneumoconiosis and fibrosis patients. 50% of those patients died in the year following the beginning of home oxygen treatment."
	Fibrosis group (97.7% O <sub>2</sub> treatment)	1663	15	
Crockett 1991	Males with ILD	10	6	Uncontrolled study where all participants undertook oxygen therapy for a minimum of 15 hours a day. As compared with COPD results, ILD patients had a much shorter median survival time (median 18 vs 6 months for males, p<0.01; median 46 vs 17months for females, p<0.01). Less than 20% survival in ILD group at 3 years.
	Females with ILD	10	17	

Definition of abbreviations:

O<sub>2</sub>= Oxygen; P-value= comparison between intervention and comparison groups; p<0.05= significant; n= number of participants

Table S9- Health Related Quality of Life (SF 36)

Study name:	Health concept	Subjects who developed the need for oxygen		Subjects who did not develop the need for supplemental oxygen		P-value	Comments
		Participants (n)	Mean SF36 domain score (±SD)	Participants (n)	Mean SF36 domain score (±SD)		
Tomioka 2007	Physical function	4	-36.1(9.6)	28	-11.5(3.6)	0.02	SF 36 was completed at baseline and 12 month follow up.
	Role physical	4	-18.8(22.1)	28	-3.6(8.4)	0.53	
	Bodily pain	4	-37.0(15.0)	28	-9.4(5.7)	0.10	
	General Health	4	-18.5(7.4)	28	-0.8(2.8)	0.03	
	Vitality	4	-35.0(9.3)	28	-1.4(3.5)	0.002	
	Social functioning	4	-37.5(10.5)	28	-4.0(4.0)	0.006	
	Role emotional	4	-25.0(28.6)	28	4.8(10.8)	0.34	
	Mental health	4	-23.0(8.1)	28	-3.4(3.1)	0.03	

## References

1. Chailleux E, Fauroux B, Binet F, Dautzenberg B, Polu JM. Predictors of survival in patients receiving domiciliary oxygen therapy or mechanical ventilation. A 10-year analysis of ANTADIR Observatory. *Chest*. 1996;109(3):741-749.
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3. Douglas WW, Ryu JH, Schroeder DR. Idiopathic pulmonary fibrosis: Impact of oxygen and colchicine, prednisone, or no therapy on survival. *American Journal of Respiratory and Critical Care Medicine*. 2000;161(4 Pt 1):1172-1178.
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