Introduction The natural course of COPD is characterised by progressive airflow limitation and complicated by the development of systemic consequences and co-morbidities. Daily physical inactivity (DPA) is believed to mediate those systemic consequences or co-morbidities. Recent research demonstrates that even in the early stages of COPD, DPA plays a role in developing systemic consequences and co-morbidities. Hence, interventions that enhance or maintain DPA in this population, such as pulmonary rehabilitation (PR), should be considered. Due to the low accessibility and high cost of PR in a specialised care setting, rehabilitation in primary care could be an added value for patients with less advanced COPD. related problems. Despite the widespread believe in the benefits of PR in a primary care setting, it remains unclear if such PR programmes are (cost) effective for patients with less advanced COPD
Objective To evaluate data from clinical trials assessing the effect of PR in primary care for patients with less advanced COPD on DPA, exercise capacity (EC) and quality-of-life (QoL).
Methods The electronic databases PEDro, CENTRAL, Pubmed and EMBASE were searched. Only randomised and controlled clinical trials were eligible for inclusion, provided they investigated the effects of interdisciplinary PR in primary care for patients with less advanced COPD (GOLD I-II). Independent data extraction was performed by two authors. Risk of bias was rated using the Cochrane Collaboration 'Risk of bias' tool. Primary outcome is the level of DPA, secondary outcomes are EC and QoL.
Results Eight studies were found and methodological quality is displayed in table 1. One study objectively measured DPA by a pedometer and showed a significant improvement in DPA. EC was significantly improved in 7/8 studies. QoL is measured in all 8 studies, 3/8 had a significant improvement and two revealed to have clinical relevant effect on QoL.
Conclusions PR in primary care for patients with less advanced COPD improves EC and QoL and could be beneficial in improving DPA. Since recent insights in the systemic burden of COPD and the role of DPA in this matter, future research must focus on the transfer of PR benefits to DPA, including a cost-effective analysis.

Abstract S108 Table 1

Table 1: Cochrane Collaboration 'risk of bias' summary

	Chavannes et al. 2009	Effing et al. 2010	Hoogendoorn et al. 2010	Monninkhof et al. 2003	Monninkhof et al. 2004	Rea et al. 2004	Van wetering et al. 2010a	Van wetering et al. 2010b
Random sequence generation	-	+	+	+	+	+	+	+
Allocation concealment	-	+	+	+	+	?	+	+
Blinding of participants	?	?	+	-	-	?	+	+
Blinding of personnel	?	?	?	-	-	?	?	?
Blinding of outcome data	?	?	?	?	?	?	?	?
Selective reporting	+	+	+	+	+	+	+	+
Other bias	+	+	?	+	+	+	+	+

Legend: -: high risk of bias / ?: unclear risk / +: low risk of bias

S109 FIVE-REPETITION SIT-TO-STAND TEST: RELIABILITY, VALIDITY AND RESPONSE TO PULMONARY REHABILITATION IN COPD

doi:10.1136/thoraxjnl-2012-202678.114

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Background Validated field exercise tests, such as the six minute walk test and incremental/endurance shuttle walks, require space and may be time-consuming as repeat walks are needed due to learning effect. Hence they are rarely used outside the research or pulmonary rehabilitation (PR) setting. The five-repetition Sit to Stand test (STS) is a simple test that is feasible in most settings. It measures the quickest time taken to stand and sit five times from a chair, with arms folded. We hypothesized that the STS would be reliable, correlate with the incremental shuttle walk (ISW), and be responsive to PR.
Methods The STS was measured in 80 COPD patients on two occasions 24–48 hours apart. Test-retest reliability was calculated using ICCs. STS and ISW were measured in a convenience sample of 396 COPD patients (Mean (SD) age 69 (10); FEV1%predicted 47 (20); ISW 202 (141)) recruited from hospital outpatient clinics. Spearman rank correlation was used to evaluate the relationship between STS and ISW. The STS was measured before and after an 8-week outpatient PR programme in 168 COPD patients. Paired t-tests were used to compare pre- and post-PR outcomes.
Results The STS demonstrated excellent test-retest reliability with an ICC value of 0.99 with no learning effect. A significant correlation was seen between STS and ISW (rho = –0.68; $p<0.001$). The STS improved significantly following PR (Pre: 20.91 (16.23) versus Post: 17.87 (14.93) seconds; 95% confidence interval –1.5 to –4.6 seconds; $p<0.001$).
Conclusions The STS is reliable, correlates with the incremental shuttle walk, and is responsive to PR in patients with COPD. The STS is a practical functional outcome measure suitable for use in most healthcare settings.

S110 PULMONARY REHABILITATION OUTCOMES IN CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD) VS MATCHED PATIENTS WITH INTERSTITIAL LUNG DISEASE (ILD)

doi:10.1136/thoraxjnl-2012-202678.115

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Introduction Pulmonary rehabilitation is an effective intervention for patients with COPD. There is now also good evidence of benefit for patients with ILD We have compared the outcome of the same PR programme in patients with COPD and ILD.
Methods Patients with various forms of ILD (predominantly IPF or UIP) were matched with the same number of COPD patients for baseline MRC grade and for age. All patients had completed the same 7 week, 14 visit hospital based out patient PR program.

Outcome Measures and desaturation during exercise were compared between the two groups.
Results 51 ILD patients, age range 34–85, mean initial MRC grade 3.5(0.94), 30 male were compared with 51 COPD patients, age range 47–85, mean baseline MRC grade 3.5(0.94), 31 male.
Discussion Our PR program produced clinically important improvements in ISWT and all domains of the CRDQ for COPD patients. ILD patients produced a smaller mean change in ISWT although this was not statistically significant between the groups. ILD patients also showed smaller changes in all domains of the CRDQ although again this was not statistically significant between the groups. The improvement in ESWT was similar in both groups. Desaturation during the baseline ISWT was more severe in the ILD group regardless of oxygen usage and despite a marginally higher pre-exercise value. This may account for the lower ISWT value seen in these patients. PR produces measurable improvements in both groups of patients. Interpretation is hampered by a lack of defined MCID values for ILD patients.

Abstract S110 Table 1 Effect of PR in COPD vs. ILD

Outcome Measure (SD)	COPD	ILD	p-value (two tailed) Difference between groups
ΔISWT metres (n=46)	49.4 (59.6)	27.4 (58.8)	ns
ΔESWT seconds (n=30)	464 (360)	365 (342)	ns
HAD (n=51)			
ΔAnxiety	–1.02 (2.34)	–1.08 (2.73)	ns
ΔDepression	–1.45 (2.40)	–1.37 (2.38)	ns
CRDQ (n=51)			
ΔDyspnoea	5.1 (6.45)	3.3 (4.79)	ns
ΔMastery	3.3 (3.92)	1.6 (4.10)	ns
ΔEmotion	4.9 (6.21)	3.1 (5.40)	ns
ΔFatigue	3.8 (5.19)	2.7 (4.57)	ns
Pre-exercise SaO_2	93.9 (3.3)	94.9 (2.8)	ns
Δ SaO_2 during baseline ISWT (n=51)	–2.7 (4.6)	–7.1 (6.75)	<0.0001

Results are presented as group means (SD). ISWT = incremental shuttle walk test, EWST = endurance shuttle walk test, HAD = hospital anxiety and depression questionnaire and CRDQ = chronic respiratory disease questionnaire.

S111 UNDERSTANDING REASONS FOR PATIENT ATTENDANCE AND NON-ATTENDANCE IN PULMONARY REHABILITATION AND COPD SELF-MANAGEMENT PROGRAMMES. A QUALITATIVE SYNTHESIS AND APPLICATION OF THEORY

doi:10.1136/thoraxjnl-2012-202678.116

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Introduction and Objectives Reviews have suggested that demographic and clinical factors are insufficient to understand poor attendance at interventions that promote self-management. An adapted version of the Attitude-Social Influence-Self-efficacy (ASE) health behaviour model has been used previously to explain participation in asthma self-management (Lemaigre, 2005). In this model, *'attitude'* refers to the sum of positive and negative beliefs and evaluation of the behaviour; *'social influence'* refers to the perceived social pressure an individual may feel to perform a particular behaviour; and *'external barriers'* are structural or physical barriers.

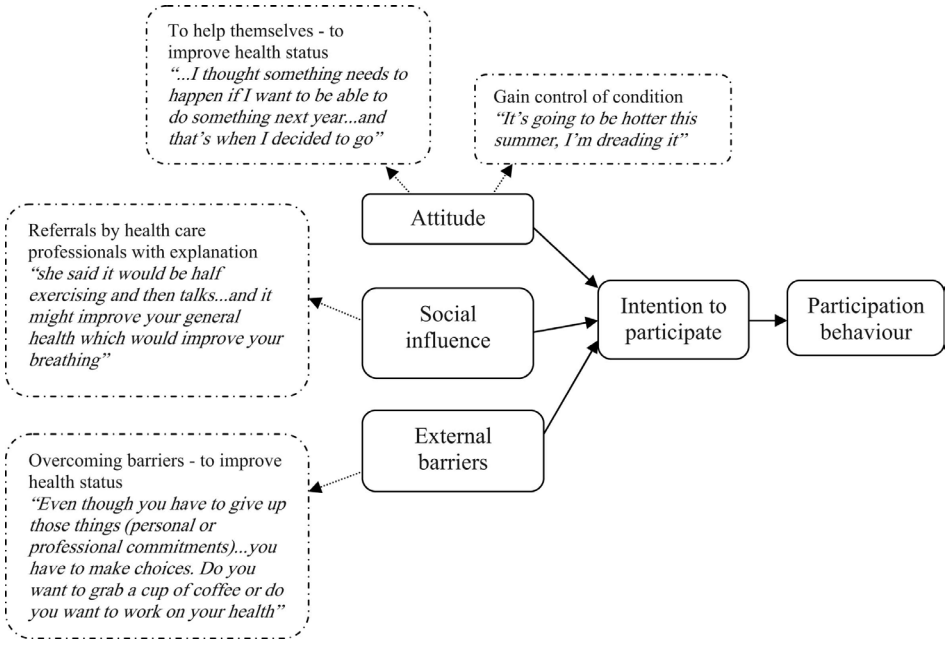
A systematic review of qualitative studies looking at factors influencing attendance, non-attendance and non-completion in pulmonary rehabilitation (PR) and self-management (SM) programmes amongst patients with chronic obstructive pulmonary disease (COPD) was conducted, and we examined if the adapted ASE model might explain participation behaviour.

Methods We searched eight electronic databases including MEDLINE (1984–2011). Thematic framework synthesis identified emergent themes and sub-themes which were then mapped, where applicable, onto each construct of the adapted ASE model.

Results Six studies were identified, PR (n=5), SM (n=1). Three main themes, 'reasons for attending', 'reasons for not attending' and 'reasons for dropping out' and 33 sub-themes (including psychological, social themes and practical barriers) emerged following data synthesis. Participants' reasons for attending mainly related to improving health or increasing sense of control, whilst reasons for not attending were commonly structural barriers perceived as difficult to overcome. Advice from health care professionals on whether the programme may or may not be beneficial was influential on attendance. Drop out was commonly explained by not seeing improvement in health.

Overall the subthemes identified under 'reasons for attending' and 'reasons for dropping out' commonly mapped onto the *'attitude'* construct of the adapted ASE model (see Figure) whilst subthemes identified under 'reasons for not attending' more commonly mapped onto the *'external barriers'* construct.

Conclusion Patients attitudes and structural barriers are important in explaining participation behaviour in PR and SM interventions and hence theory based interventions directed at these have potential to improve COPD outcomes.



Abstract S111 Figure 1 Figure Example of a few mapped subthemes onto constructs of the adapted ASE model that explain 'Reasons for attending'