Table 1: Summary of studies included in systematic review on the association between physical activity and cardio-respiratory function

	Geographical region, age in years	Gestational age, gender	Physical activity	FEV1	pVO2	Correlation physical activity and FEV1	Correlation physical activity and pVO2
Randomized controlled trial							
Barcelona(20)	Spain 2009-11 Age 5.1 (±0.4)		Duration 4 weeks 2x30-50 min./week	% predicted	ISWT (m)	ΔFEV1 did not differ significantly:	Cardiorespiratory fitness improved in the IG.
		IG: 10 EP		104 (17)	465 (58)	IG ΔFEV1=4±61ml versus	IG ΔISWT=217±221m versus
		CG: 10 EP No term control	none	98 (10)	387 (164)	CG ΔFEV1=80±94ml (p=0.187)	CG ΔISWT=17±58m (p=0.013)
Longitudinal cohorts							
ALSPAC(21)	UK 1990-2 Age: 11.6 (11.4-11.7)	(48% male) 48 VP 57 MP 197 LP 5025 FT	MPVA (3600/min) as min/day M:25 / F: 19 M: 34 / F: 22 M: 26 / F: 15 M: 26 / F: 16	Z-Scores FEV1(28) -0.46 (0.88) -0.50 (1.09) 0.01 (0.91) 0.01 (1.0)	Not reported	Reduced lung function at age 8 years was **not associated** with physical activity at age 11.	No data available
Cohorts with cross sectional data presentation							
DEX-Trial(16)	USA 1992-5 Age: 9 (8-11)	GA: 25 (23-30) 37 DEX (52%male) 28 Placebo (49%male) No term control	Vigorous PA h/week 0.5 (0-7) 0.8 (0-7)	% predicted 83 (48-107) 77 (52-115)	ml/kg/min 38 (22-53) 39 (14-52)	FEV1 % predicted was significantly correlated with average hours spent per year participating in vigorous physical activity (r = 0.30; p = 0.03)	Correlations between physical activity and pVO2 was not analysed
EPICURE(22)	UK 1995 Age: 11 (±0.4)	GA: 25 (±0) 38 EP (29% male) 38FT (39% male)	MPVA (3600/min) as min/day 9 (4-12) 11 (7-18)	Z-Score FEV1 -1.64 (1.32) 0.1 (0.9)	ml/kg/min 28 (6.6) 35 (6.5)	Correlation between FEV1 and physical activity was not analysed.	Analysis showed a weak within-subject correlation (R^2=0.07; p<0.03) between peakVO2 and activity counts/min.
NORWAY 91(17, 26)	Norway 1991 Age: 10 (±0.4) + Age 18	GA: 28 (±1) 35 EP (10Y) (37% male) 26 EP (18Y) (46% male) 35 FT (10Y) (37% male) 22 FT (18Y) (27% male)	Exercise> 1x/week 34% 34% 72% 72%	% predicted 88 (85-92) 92 (88-96) 98 (95-101) 100 (94-105)	ml/kg/min 44 (41-46) 42 (39-45) 46 (43-48) 45 (41-49)	FEV1 was **not associated** with the different levels of physical activity in preterm or term children age 10 or 18.	pVO2 was **not associated** with the different levels of physical activity in preterm or term children age 10. pVO2 was similarly and positively associated with physical activity in the preterm- and term-born groups at age 18.
NORWAY 82(25)	Norway 1982-5 Age 18 (±1.2) + Age 25 (±1.2)	GA: 27 (±1) 40 EP (18Y) (55% male) 34 EP (25Y) (53% male) 40 FT (18Y) (55% male) 33 FT (25Y) (52% male)	Exercise >1x/week 34% 37% 72% 46%	% predicted 89 (86-93) 93 (89-96) 100 (97-103) 102 (98-105)	ml/kg/min 47 (44-50) 41 (38-44) 50 (47-53) 44 (41-47)	FEV1 was **not associated** with the different levels of physical activity in preterm or term children age 18 or 25.	pVO2 was positively associated with level of physical activity (linear regression analyses, P<0.001) at age 18. pVO2 was similarly and positively associated with times per week of physical activity in the preterm- and term-born groups at age 25 (mixed

	Geographical region, age in years	Gestational age, gender	Physical activity	FEV1	pVO2	Correlation physical activity and FEV1	Correlation physical activity and pVO2
							linear model P = 0.053)
Cross sectional studies							
PILOT(31)	Netherland 1998 Age: 8 (±0.4)	GA: 30 (±2) 11 VP (64% male) No term control	EEE kcal/kg 47 (3)	% predicted (SD) 82 (16)	ml/kg/min 41 (28-54)	FEV1 was **not associated** with PA.	pVO2 was **not associated** with physical activity.
CARDIFF(30)	UK Age: 10 (±1.4)	GA: 28 (±2) 29 VP CLD (59% male) 33 VP (46% male) 30 FT (50% male)	PA h/week 2 (0-24) 3 (0-10) 4 (0-24)	% predicted 82 (77-87) 92 (87-97) 98 (93-102)	ml/kg/min 35 (33-38) 35 (32-38) 31 (28-35)	The lowest FEV1 value after exercise was moderately correlated with reported physical activity (R = 0.43; p < 0.001)	Correlations between physical activity and pVO2 was not analysed
SIENA(29)	Italy 1991-1997 Age: 16 (±2.2)	GA: 27 (±2) 3 VP (100% male) 3 VP (100% male) No term control	Sport club yes no	% predicted 96 (91-96) 106 (96-107)	Not reported	FEV1 was **not associated** with sport club participation	No data available

PT: preterm; FT: full term; EP: extremely preterm; VP: very preterm; MP: moderately preterm; LP: late preterm; VLBW: very low birth weight (<1500g); pVO2: peak oxygen consumption; FEV1: Forced expiratory volume in 1 second; GA: gestational age given as mean (±SD) or median (25^{th}-75^{th} centile). ISWT: incremental shuttle walk test, IG:intervention group with PA program, CG: control group. Nixon giving GA and age as median (5th-95th centile). PA: physical activity, MVPA: accelerometer data moderate to vigorous activity; EEE: estimated energy expenditure; DEX: treatment group receiving dexamethason postnataly