

Table 1. Study Population Demographics

	Mean ± S.D. [Range]	Study Population (n = 88)	
Demographic Characteristics	Sex (% female)	45.5%	
	Gestational age (weeks)	26.8 ± 2.9 [22.9, 36.0]	
	Race/ethnicity (% non-white)	63.6%	
	Median household income (\$'000s)	63.0 ± 18.8 [29.1, 108.1]	
	Public insurance (% yes)	62.5%	
	Secondhand smoke exposure (% yes; n = 83)	14.5%	
	Family history of asthma (% yes; n = 76)	64.5%	
Clinical Characteristics	Supplemental oxygen at NICU discharge (% yes)	43.2%	
	Oxygen amount at NICU discharge (LPM; n = 38)	0.35 ± 0.27 [0.06, 1.00] (n = 38)	
	Severity of BPD (n = 78)	None	11.5%
		Mild	7.7%
		Moderate	33.3%
		Severe	47.4%
	Gastrostomy tube (% yes)	34.1%	
	Nissen fundoplication (% yes)	22.7%	
	Pulmonary hypertension (% yes)	18.2%	
	Personal diagnosis of RAD/asthma (%yes)	84.1%	
	Daily inhaled corticosteroid use (% yes)	79.6%	
	Growth Measures at Birth	Weight (grams; n = 86)	980 ± 518 [380, 3150]
		Weight percentile (%; n = 86)	41 ± 25 [3, 90]
Length (cm; n = 50)		34.3 ± 6.4 [19.5, 51.5]	
Weight percentile (%; n = 79)		30 ± 31 [0.3, 100]	
Growth Measures at 2yo	Height percentile (%; n = 78)	24 ± 26 [0.1, 98]	
	BMI percentile (%; n = 78)	49 ± 31 [1, 100]	
	Forced Expiratory Volume in 1 second (FEV ₁ % predicted)	84.5 ± 22.7 [44, 164]	
Lung Function	Forced Volume Capacity (FVC % predicted)	94.2 ± 26.5 [40, 198]	

Table 2. Predictors of FEV₁*

	Coefficient ± S.E.	Univariate Model (n = 71)	Coefficient P value	Multivariate Model (n = 71)	Coefficient P value	
Demographic Characteristics	Sex (male=0; female=1)	-3.2 ± 5.3	0.55	-	-	
	Gestational age (weeks)	0.5 ± 0.9	0.54	-	-	
	Race/ethnicity (white=0; non-white=1)	-9.1 ± 5.5	0.10	-	-	
	Median household income (\$10,000s)	2.9 ± 1.4	0.044	2.6 ± 1.3	0.040	
	Public insurance (no=0; yes=1)	-5.0 ± 5.5	0.36	-	-	
	Secondhand smoke exposure (no=0; yes=1; n=67)	2.5 ± 7.4	0.74	-	-	
	Family history of asthma (no=0; yes=1; n=63)	-0.1 ± 5.9	0.99	-	-	
Clinical Characteristics	Supplemental oxygen at NICU discharge (no=0; yes=1)	-11.0 ± 5.1	0.035	-	-	
	Oxygen amount at NICU discharge (LPM)	-23.7 ± 9.9	0.020	-	-	
	Severe BPD (no=0; yes=1)	-10.2 ± 5.1	0.051	-5.3 ± 5.5	0.34	
	Gastrostomy tube (no=0; yes=1)	-14.5 ± 5.2	0.007	-	-	
	Nissen fundoplication (no=0; yes=1)	-19.6 ± 5.6	0.001	-17.9 ± 6.2	0.005	
	Pulmonary hypertension (no=0; yes=1)	-5.1 ± 6.6	0.44	-	-	
	Personal diagnosis of RAD/asthma (no=0; yes=1)	3.4 ± 6.6	0.61	-	-	
	Inhaled corticosteroid use (no=0; yes=1)	-0.7 ± 6.5	0.92	-	-	
	Growth Measures	Birth weight percentile (%; n=70)	-0.1 ± 0.1	0.63	-	-
		Weight percentile at 2yo (%)	-0.2 ± 0.1	0.026	-0.2 ± 0.1	0.011
Height percentile at 2yo (%; n=70)		-0.2 ± 0.1	0.07	-	-	
BMI percentile at 2yo (%; n=70)		-0.1 ± 0.1	0.10	-	-	

*Linear regression models employ FEV₁ as the dependent variable and individual predictors as independent variables in the univariate models. Multivariate model was generated by dropping non-significant predictors identified as significant in univariate models in a stepwise fashion. Severe BPD was retained as covariate in the final model to adjust for initial lung disease severity.

Table 3. Predictors of FVC*

	Coefficient ± S.E.	Univariate Model (n = 71)	Coefficient P value	Multivariate Model (n = 71)	Coefficient P value
Demographic Characteristics	Sex (male=0; female=1)	4.0 ± 5.7	0.48	-	-
	Gestational age (weeks)	1.3 ± 0.9	0.17	-	-
	Race/ethnicity (white=0; non-white=1)	-10.2 ± 5.9	0.09	-	-
	Median household income (\$10,000s)	1.8 ± 1.5	0.25	-	-
	Public insurance (no=0; yes=1)	-6.6 ± 5.8	0.26	-	-
	Secondhand smoke exposure (no=0; yes=1; n=67)	-5.8 ± 8.0	0.47	-	-
	Family history of asthma (no=0; yes=1; n=63)	-1.9 ± 6.4	0.77	-	-
Clinical Characteristics	Supplemental oxygen at NICU discharge (no=0; yes=1)	-14.0 ± 5.4	0.012	-	-
	Oxygen amount at NICU discharge (LPM)	-36.7 ± 10.2	0.001	-26.7 ± 10.8	0.016
	Severe BPD (no=0; yes=1)	-9.8 ± 5.5	0.08	0.2 ± 6.1	0.98
	Gastrostomy tube (no=0; yes=1)	-12.5 ± 5.7	0.031	-	-
	Nissen fundoplication (no=0; yes=1)	-19.7 ± 6.1	0.002	-14.9 ± 6.8	0.031
	Pulmonary hypertension (no=0; yes=1)	-9.8 ± 7.0	0.17	-	-
	Personal diagnosis of RAD/asthma (no=0; yes=1)	7.7 ± 7.1	0.28	-	-
	Inhaled corticosteroid use (no=0; yes=1)	3.9 ± 6.9	0.57	-	-
Growth Measures	Birth weight percentile (%; n=70)	0.0 ± 0.1	0.86	-	-
	Weight percentile at 2yo (%)	-0.2 ± 0.1	0.016	-0.2 ± 0.1	0.005
	Height percentile at 2yo (%; n=70)	-0.2 ± 0.1	0.11	-	-
	BMI percentile at 2yo (%; n=70)	-0.1 ± 0.1	0.12	-	-

*Linear regression models employ FVC as the dependent variable and individual predictors as independent variables in the univariate models. Multivariate model was generated by dropping non-significant predictors identified as significant in univariate models in a stepwise fashion. Severe BPD was retained as covariate in the final model to adjust for initial lung disease severity.

Supplemental Table 1. Included versus Excluded Population

Mean ± S.D. [Range]		Study Population (n = 88)	Excluded Registry Subjects (n = 510)	P value	
Demographic Characteristics	Sex (% female)	45.5%	38.2%	0.20	
	Gestational age (weeks)	26.8 ± 2.9 [22.9, 36.0]	27.1 ± 2.9 [22.7, 36.0]	0.45	
	Race/ethnicity (% non-white)	63.6%	64.3%	0.90	
	Median household income (\$'000s)	63.0 ± 18.8 [29.1, 108.1]	64.1 ± 22.8 [15.6, 156.6]	0.67	
	Public insurance (% yes)	62.5%	58.0%	0.43	
	Supplemental oxygen at NICU discharge (% yes)	43.2%	34.5%	0.12	
Clinical Characteristics	Oxygen amount at NICU discharge (LPM)	0.35 ± 0.27 [0.06, 1.00] (n = 38)	0.39 ± 0.42 [0.03, 2.00] (n = 176)	0.58	
	Severity of BPD	None	11.5%	9.5%	0.13
		Mild	7.7%	15.6%	
		Moderate	33.3%	38.4%	
		Severe	47.4% (n = 78)	36.5% (n = 463)	
	Gastrostomy tube (% yes)	34.1%	26.5%	0.14	
	Nissen fundoplication (% yes)	22.7%	17.5%	0.24	
Pulmonary hypertension (% yes)	18.2%	14.9%	0.43		
Growth Measures	Birth weight (grams)	980 ± 518 [380, 3150] (n = 86)	979 ± 461 [380, 3181] (n = 496)	1.00	
	Birth weight percentile (%)	41 ± 25 [3, 90] (n = 86)	40 ± 23 [1, 95] (n = 496)	0.63	