

## **Online Supplement**

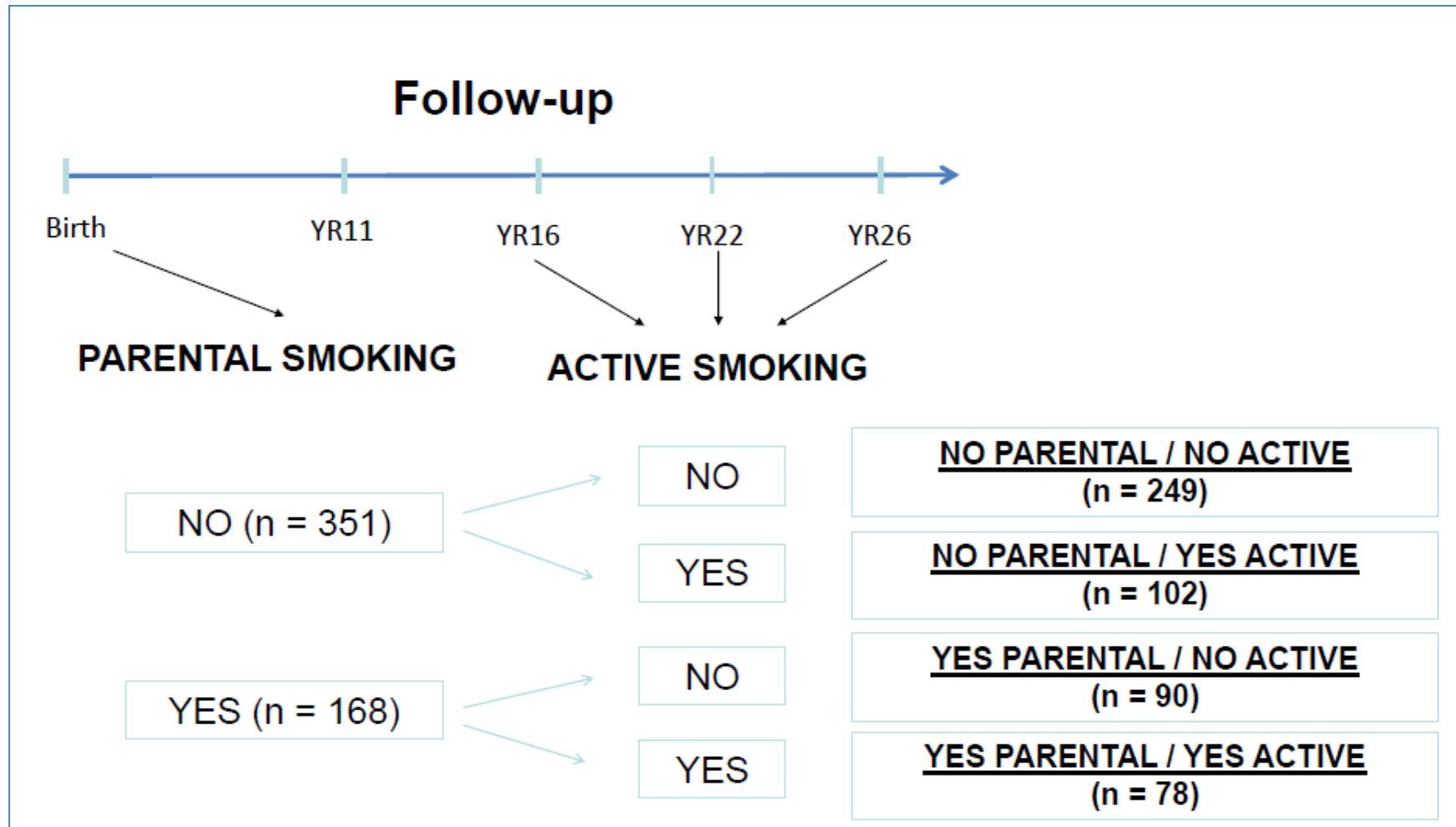
**Combined effects of parental and active smoking on early lung function deficits: a prospective study from birth to age 26 years.**

S Guerra, DA Stern, M Zhou, DL Sherrill, AL Wright, WJ Morgan, FD Martinez

### *Lung function testing*

At YR11, spirometry was done with a custom-built, pneumotachometer-based system, running software on a portable computer(24), and at YR16, YR22, and YR26 with a portable Schiller Spirovit SP-1 (Schiller AG, Baar, Switzerland)(25). We calibrated these systems with a Jones flow-volume calibrator (Model FVC-3000; Jones Medical Instrumentation Company, Oakbrook, IL, USA). No subjects had used a bronchodilator within 6 hours of testing. Subsequent to baseline measurements, a fixed dose of 2 puffs of albuterol (180 µg) was administered from a metered-dose inhaler and aerochamber holding device (Monaghan Medical Corp, Plattsburgh, NY) and the post bronchodilator spirometry was obtained 15 minutes thereafter.

**Figure E1.** Categorization of subjects based on parental and active smoking



**Table E1.** Mean and 95% Confidence Intervals of baseline (before bronchodilator) FEV1/FVC residuals at age 11, 16, 22, and 26 years and of their linear trends between age 11 and 26 years across maternal smoking, paternal smoking, and their combinations with active smoking.

		FEV1/FVC residuals		FEV1/FVC residuals		FEV1/FVC residuals		FEV1/FVC residuals		Linear trend of FEV1/FVC residuals from YR11 to YR26		
		YR11		YR16		YR22		YR26		YR26		
		N	Mean (95%CI)	N	Mean (95%CI)	N	Mean (95%CI)	N	Mean (95%CI)	N	Mean (95%CI)	
<b>Maternal Smoking</b>												
	No	366	0.02 (-0.61, 0.65)	329	0.17 (-0.55, 0.89)	387	0.12 (-0.55, 0.78)	296	0.12 (-0.59, 0.84)	418	-0.02 (-0.08, 0.03)	
	Yes	60	-0.14 (-1.65, 1.37)	53	-1.04 (-2.84, 0.76)	66	-0.68 (-2.31, 0.96)	54	-0.67 (-2.46, 1.13)	70	-0.10 (-0.19, 0.00)	
	P-value		0.85		0.22		0.37		0.40		0.09	
<b>Maternal Active</b>												
	No	No	249	0.07 (-0.69, 0.83)	230	0.07 (-0.80, 0.93)	269	0.31 (-0.48, 1.11)	203	0.42 (-0.48, 1.32)	287	0.02 (-0.05, 0.08)
	No	Yes	117	-0.08 (-1.23, 1.06)	99	0.40 (-0.92, 1.73)	118	-0.34 (-1.57, 0.89)	93	-0.53 (-1.70, 0.65)	131	-0.11 (-0.22, 0.01)
	Yes	No	30	-0.95 (-3.01, 1.11)	25	-2.13 (-4.9, 0.54)	31	-1.18 (-3.37, 1.00)	27	-0.15 (-2.16, 2.45)	34	0.05 (-0.04, 0.14)
	Yes	Yes	30	0.67 (-1.63, 2.97)	28	-0.07 (-2.62, 2.48)	35	-0.23 (-2.72, 2.27)	27	-1.48 (-4.36, 1.39)	36	-0.24 (-0.39, -0.08)
	P-value		0.76		0.40		0.59		0.38		0.002	
<b>Paternal Smoking</b>												
	No	313	0.15 (-0.55, 0.85)	281	0.09 (-0.72, 0.89)	331	0.21 (-0.50, 0.93)	253	0.36 (-0.43, 1.15)	355	-0.02 (-0.08, 0.04)	
	Yes	113	-0.42 (-1.42, 0.59)	101	-0.24 (-1.44, 0.95)	122	-0.58 (-1.79, 0.63)	97	-0.94 (-2.17, 0.29)	133	-0.07 (-0.15, 0.01)	
	P-value		0.4		0.7		0.3		0.08		0.11	
<b>Paternal Active</b>												
	No	No	214	0.13 (-0.70, 0.96)	201	-0.16 (-1.12, 0.79)	234	0.24 (-0.60, 1.08)	179	0.42 (-0.54, 1.39)	246	0.03 (-0.04, 0.10)
	No	Yes	99	0.20 (-1.12, 1.52)	80	0.72 (-0.78, 2.23)	97	0.15 (-1.23, 1.53)	74	0.21 (-1.14, 1.56)	109	-0.12 (-0.25, 0.01)
	Yes	No	65	-0.58 (-1.95, 0.78)	54	-0.09 (-1.69, 1.51)	66	-0.12 (-1.76, 1.53)	51	0.27 (-1.38, 1.91)	75	0.00 (-0.11, 0.10)
	Yes	Yes	48	-0.20 (-1.74, 1.34)	47	-0.42 (-2.28, 1.44)	56	-1.12 (-2.95, 0.71)	46	-2.28 (-4.11, -0.44)	58	-0.15 (-0.29, -0.02)
	P-value		0.84		0.74		0.58		0.07		0.007	

**Table E2.** Linear trends of baseline (before bronchodilator) residuals for FEV1, FVC, FEF<sub>25-75</sub>, and FEF<sub>25-75</sub>/FVC between year 11 and 26 across groups of combination of parental and active smoking.

Combined Smoking Groups			FEV1 residuals	FVC residuals	FEF <sub>25-75</sub> residuals	FEF <sub>25-75</sub> /FVC residuals
Parental	Active 16-26yr	N	Mean (95%CI)	Mean (95%CI)	Mean (95%CI)	Mean (95%CI)
No	No	233	-3.31 (-7.71, 1.09)	-6.77 (-11.28, -2.27)	-0.82 (-9.98, 8.34)	0.03 (-0.18, 0.25)
No	Yes	95	-2.48 (-9.35, 4.40)	1.68 (-5.55, 8.91)	-8.74 (-25.70, 8.22)	-0.28 (-0.72, 0.15)
Yes	No	88	0.99 (-5.04, 7.02)	2.60 (-4.37, 9.57)	0.41 (-11.22, 12.04)	0.06 (-0.22, 0.34)
Yes	Yes	72	-9.99 (-18.64, -1.35)	-3.23 (-12.41, 5.96)	-26.02 (-40.19, -11.85)	-0.51 (-0.84, -0.18)
P-value			0.03	0.03	<0.001	0.01

**Table E3.** Linear trends of post bronchodilator residuals for FEV1, FVC, FEF<sub>25-75</sub>, and FEF<sub>25-75</sub>/FVC between year 11 and 26 across groups of combination of parental and active smoking.

Combined Smoking Groups			FEV1 residuals	FVC residuals	FEF <sub>25-75</sub> residuals	FEF <sub>25-75</sub> /FVC residuals
Parental	Active 16-26yr	N	Mean (95%CI)	Mean (95%CI)	Mean (95%CI)	Mean (95%CI)
No	No	229	-4.38 (-9.61, 0.85)	-5.08 (-9.88, -0.28)	-3.35 (-15.37, 8.66)	-0.03 (-0.29, 0.24)
No	Yes	92	0.42 (-7.37, 8.22)	0.21 (-6.94, 7.36)	1.34 (-20.37, 23.04)	-0.05 (-0.54, 0.43)
Yes	No	85	0.78 (-5.17, 6.73)	3.20 (-3.76, 10.15)	-1.65 (-13.21, 9.91)	0.05 (-0.23, 0.32)
Yes	Yes	71	-7.14 (-15.09, 0.80)	-1.73 (-10.42, 6.95)	-17.07 (-34.26, 0.12)	-0.39 (-0.81, 0.02)
P-value			0.11	0.05	0.19	0.42