

## ONLINE SUPPLEMENT

### Increased airway wall thickness is associated with adverse longitudinal expiratory flow trajectories of former World Trade Center workers

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Table S1. Characteristics of the WTC workers with chest CT imaging included and excluded in this study, who had complete data on covariates under study (90 subjects had missing values for one or more of those covariates). Compared to the 752 subjects who did not meet study criteria, but had complete data on covariates under study, the study group was slightly but significantly older, less overweight, more likely to have arrived at the WTC site after the first 48 hours of the terrorist attack, and to include more laborers and building cleaners, and less law enforcement workers.

	Included (n=799)		Excluded (n=752)		p value
	Mean	SD	Mean	SD	
Age, years	42.6	8.8	41.6	9.2	<b>0.0396</b>
Height, cm	171.5	10.0	172.1	9.5	0.2551
Baseline BMI, kg/m <sup>2</sup>	29.0	4.8	29.7	5.3	<b>0.0055</b>
FEV <sub>1</sub> %predicted	87.1	16.9	86.5	17.9	0.4919
WTC exposure duration	93.9	74.1	89.2	72.8	0.2086
	N	%	N	%	p value
Baseline smoking status					
Never	407	50.9	426	56.7	0.0618
Former	235	29.4	187	24.9	
Current	157	19.7	139	18.5	
Pre-WTC exposure					
No	370	46.3	345	45.9	0.8651
Yes	429	53.7	407	54.1	
Gender					
Male	653	81.7	631	83.9	0.2552
Female	146	18.3	121	16.1	
WTC arrival < 48 hours					
No	413	51.7	346	46.0	<b>0.0254</b>
Yes	386	48.3	406	54.0	
Race/ethnicity					
Latino	276	34.5	259	34.4	0.9978
Non-Latino White	425	53.2	400	53.2	
Non-Latino Other	98	12.3	93	12.4	
Any BDR					
No	618	77.4	596	79.3	0.3623
Yes	181	22.7	156	20.7	
Pattern					
Normal	483	60.5	442	58.8	0.0925
Low FVC	233	29.2	205	27.3	
Obstruction	83	10.4	105	14.0	
COPD					
No	688	88.4	605	87.4	0.5263
Yes	44	5.7	34	4.9	
Occupation					

Management/services	141	17.7	133	17.7	<b>0.0390</b>
Construction trades	150	18.8	127	16.9	
Laborers/cleaners	269	33.7	214	28.5	
Transportation	41	5.1	52	6.9	
Law enforcement	171	21.4	204	27.1	
Retired/unemployed	27	3.4	22	2.9	

Table S2. Characteristics of the entire study group, and the stable, decliner, and gainer subgroups, with WAP measured with the CIP software, and unadjusted comparisons of the decliner and gainer subgroups, with the stable subgroup.

	Entire group (n=457)		Stable (n=51)		Decliner (n=52)			Gainer (n=15)		
	Mean	SD	Mean	SD	Mean	SD	p*	Mean	SD	p*
Wall Area Percent	65.0	6.0	63.0	6.0	67.0	5.0	<b>0.0002</b>	70.0	8.0	<b>0.0001</b>
Age, years	42.5	8.8	41.3	7.5	44.2	9.4	0.0912	40.3	8.31	0.6286
Height, cm	171.5	9.9	171.4	9.5	171.2	8.9	0.9206	174.8	8.53	0.2075
Baseline BMI, kg/m <sup>2</sup>	29.3	5.2	29.0	4.1	31.0	5.5	0.0409	30.4	5.44	0.3204
BMI slope, kg/m <sup>2</sup> /year	0.1	0.4	-0.01	0.31	0.16	0.46	<b>0.0315</b>	-0.1	0.63	0.6863
Baseline FEV <sub>1</sub> %predicted	87.5	17.0	94.4	11.4	85.7	15.7	<b>0.0017</b>	57.5	18.9	<b>&lt;0.0001</b>
WTC exposure duration, days	97.0	76.1	83.2	75.4	100.0	81.3	0.2791	127.8	80.1	0.0511
	No.	%	No.	%	No.	%	p	No.	%	p
Baseline smoking status										
Never	223	48.8	24	47.1	20	38.5	0.5382	7	46.7	0.0820
Former	142	31.1	19	37.3	25	48.1		2	13.3	
Current	92	20.1	8	15.7	7	13.5		6	40.0	
Pre-911 exposure										
No	197	43.1	20	39.2	27	51.9	0.1955	5	33.3	0.6797
Yes	260	56.9	31	60.8	25	48.1		10	66.7	
Gender										
Male	377	82.5	42	82.4	41	78.9	0.6528	14	93.3	0.4334
Female	80	17.5	9	17.7	11	21.2		1	6.7	
WTC arrival < 48 hours										
No	248	54.3	25	49.0	17	32.7	0.0918	6	40.0	0.5384
Yes	209	45.7	26	51.0	35	67.3		9	60.0	
Race/ethnicity										
Latino	152	33.3	16	31.4	13	25.0	0.7563	6	40.0	<b>0.0136</b>
Non-Latino White	250	54.7	29	56.9	33	63.5		3	20.0	
Non-Latino Other	55	12.0	6	11.8	6	11.5		6	40.0	
Any BDR										

No	360	78.8	45	88.2	31	58.6	<b>0.0010</b>	7	46.7	<b>0.0017</b>
Yes	97	21.2	6	11.8	21	40.4		8	53.3	

\*p values for continuous measures from t test, P-value for categorical measures from Chi square or Fisher's exact test as appropriate, for comparisons between the stable vs. the decliner or the gainer subgroups.

# root mean squared error, instead of SD.

Table S3. Logistic regression model for the comparison of decliner (n=52) and stable subgroups (n=51), with WAP measured with the CIP software, adjusted additionally for age on 9/11/2001, baseline smoking status, WTC exposure duration, and pre-WTC occupational exposures

	Adjusted comparison			
	OR	95% CI		p value
Wall Area Percent*, <i>5% units</i>	2.08	1.203	3.605	<b>0.0088</b>
BMI slope, <i>0.2 kg/m<sup>2</sup>/year units</i>	1.48	1.086	2.012	<b>0.0130</b>
FEV <sub>1</sub> %predicted	0.96	0.919	0.998	<b>0.0413</b>
Any BDR				
No	1	--	--	<b>0.0067</b>
Yes	5.20	1.577	17.127	

Table S4. Logistic regression model for the comparison of gainers (n=15) vs. stable subgroups (n=51). WAP was measured with the CIP software. Model was adjusted additionally for baseline smoking status and FEV<sub>1</sub>.

	Adjusted comparison			
	OR	95% CI		p
Wall Area Percent	5.073	1.193	21.579	<b>0.0279</b>
Any BDR				
No	1	--	--	<b>0.0194</b>
Yes	198.350	2.348	>999.999	