Supplemental Digital Content 6. Regression of PFT parameters on exposure and confounders and observed and predicted for clinical sample

Table A1 Spirometry: FEV_1, FVC & FEV_1/FVC First assessment since deployed (any source) N=582

	FEV_1			FVC			FEV_1/FVC		
	β	95% CI	P=	β	95% CI	P=	β	95% CI	P=
Testing done by									
External agency	-0.00	-0.10 to 0.09	0.957	-0.12	-0.23 to -0.00	0.041	1.52	0.44 to 2.60	0.006
Sex									
Male	0.50	0.31 to 0.69	<0.001	0.70	0.48 to 0.93	<0.001	-1.09	-3.27 to 1.09	0.328
Age (continuous)	-0.03	-0.04 to -0.03	<0.001	-0.03	-0.04 to -0.03	<0.001	-0.11	-0.17 to -0.06	<0.001
Height (continuous)	0.03	0.03 to 0.04	<0.001	0.05	0.04 to 0.05	<0.001	-0.06	-0.12 to -0.00	0.034
Smoker									
Ever	-0.19	-0.29 to -0.08	0.001	-0.17	-0.30 to -0.04	0.011	-1.10	-2.36 to 0.16	0.086
History of asthma/COPD									
Yes	-0.15	-0.26 to -0.04	0.007	-0.04	-0.17 to 0.09	0.524	-2.11	-3.35 to -0.86	0.001
Weeks since deployed (continuous)	0.00	-0.00 to 0.00	0.304	0.00	-0.00 to 0.00	0.413	0.00	-0.01 to 0.02	0.607
Log exposure (PM 2.5) (continuous)	-0.04	-0.07 to -0.01	0.003	-0.06	-0.09 to -0.02	<0.001	0.08	-0.24 to 0.39	0.628
Constant	-0.25	-1.17 to 0.67	0.599	-1.38	-2.47 to -0.29	0.013	93.43	82.85 to 104.01	<0.001

Table A2 Relation of exposure to spirometry parameters: linear regression. Firefighters with external tests before and after the fire (N=237)

Factor	FEV_1			FVC			FEV_1/FVC		
	β	95% CI	P=	β	95% CI	P=	β	95% CI	P=
PFT value before the fire	0.91	0.85 to 0.97	<0.001	0.88	0.82 to 0.93	<0.001	0.83	0.77 to 0.90	<0.001
Age at PFT post fire	-0.00	-0.01 to 0.00	0.053	-0.01	-0.01 to -0.00	0.002	-0.02	-0.06 to 0.03	0.442
Height	0.00	-0.00 to 0.01	0.138	0.01	0.00 to 0.01	0.011	-0.01	-0.05 to 0.03	0.600
Sex (male)	0.02	-0.17 to 0.20	0.850	-0.07	-0.29 to 0.14	0.505	1.86	-0.58 to 4.29	0.135
Weeks between tests	-0.00	-0.00 to 0.00	0.462	-0.00	-0.00 to 0.00	0.263	-0.01	-0.01 to -0.00	0.048
Exposure (log $PM_{2.5}$µg/m3)	-0.02	-0.04 to -0.00	0.039	-0.03	-0.05 to -0.01	0.010	0.02	-0.24 to 0.28	0.888
Constant	0.23	-0.35 to 0.81	0.438	0.28	-0.38 to 0.95	0.402	13.69	3.41 to 23.97	0.009

Table A3: Regression analyses to estimated predicted values of lung function parameters obtained from clinical sample (N=153)

	FEV_1				FVC				FEV1/FVC%			
	ß	95% CI		P=	ß	95% CI		P=	ß	95% CI		P=
Age (years) at testing (continuous)	-0.03	-0.04	-0.02	<0.001	-0.03	-0.04	-0.01	<0.001	-0.19	-0.29	-0.08	0.001
Sex (male)	0.67	0.35	1.00	<0.001	0.98	0.59	1.36	<0.001	-1.47	-4.94	2.00	0.404
Height (cm) continuous	0.02	0.01	0.03	<0.001	0.03	0.02	0.04	<0.001	-0.04	-0.14	0.06	0.418
Body mass index	-0.02	-0.03	0.00	0.065	-0.02	-0.04	0.00	0.048	-0.04	-0.21	0.14	0.664
Constant	1.18	-0.56	2.91	0.182	0.30	-1.77	2.36	0.778	93.62	75.03	112.22	<0.001

	DLCO				VA				DLCO/VA			
	ß	95% CI		P=	ß	95% CI		P=	ß	95% CI		P=
Age (years) at testing (continuous)	-0.23	-0.31	-0.14	<0.001	-0.01	-0.02	0.01	0.374	-0.03	-0.04	-0.02	<0.001
Sex (male)	8.43	5.60	11.26	<0.001	1.21	0.72	1.69	<0.001	0.26	-0.16	0.67	0.228
Height (cm) continuous	0.20	0.11	0.28	<0.001	0.04	0.03	0.05	<0.001	-0.00	-0.01	0.01	0.681
Body mass index	0.04	-0.10	0.19	0.549	-0.02	-0.05	0.00	0.047	0.03	0.01	0.05	0.003
Constant	1.58	-13.57	16.73	0.837	-0.66	-3.15	2.03	0.670	5.82	3.59	8.05	<0.001

Table A4: Means of observed and predicted lung function parameters for clinical sample by exposure quartile

Exposure quartiles	N	**FEV_1**			**FVC**			**FEV_1/FVC%**		
		O	**P**	**O/P %**	**O**	**P**	**O/P %**	**O**	**P**	**O/P%**
Low	39	4.08	4.15	98.18	5.43	5.44	99.82	75.25	76.45	98.44
Below median	38	3.96	3.95	100.02	5.16	5.21	98.73	76.95	75.82	101.48
Above median	40	4.03	3.99	100.85	5.37	5.31	101.10	75.11	75.15	99.91
High	36	4.18	4.16	101.14	5.48	5.47	100.50	76.25	76.09	100.23
Overall	153	4.06	4.06	100.03	5.36	5.36	100.04	75.87	75.87	100.00
Difference between means p=		0.657	0.142	0.809	0.460	0.235	0.871	0.551	0.233	0.429
Linearity p=		0.542	0.926	0.356	0.360	0.721	0.640	0.814	0.476	0.506

Exposure quartiles	N	**DLCO**			**VA**			**DLCO/VA**		
		O	**P**	**O/P %**	**O**	**P**	**O/P %**	**O**	**P**	**O/P %**
Low	39	37.04	35.21	105.02	6.78	6.66	99.82	5.47	5.32	102.99
Below median	38	33.83	33.65	100.77	6.42	6.47	98.73	5.33	5.23	101.74
Above median	40	34.82	34.76	100.07	6.54	6.63	101.10	5.35	5.29	101.34
High	36	33.40	35.64	94.01	6.73	6.71	100.50	4.99	5.34	93.39
Overall	153	34.81	34.81	100.08	6.62	6.62	100.04	5.29	5.29	99.99
Difference between means p=		0.073	0.142	0.010	0.447	0.440	0.871	0.048	0.415	0.009
Linearity p=		0.038	0.926	0.001	0.940	0.515	0.640	0.013	0.576	0.004

O=observed, P=predicted