SUPPLEMENT

Supplemental Table 1. Characteristics of participants in the Keokuk County Rural Health Study (KCRHS) and the Multi-Ethnic Study of Atherosclerosis (MESA) at the time of enrollment

Characteristic	KCRHS	MESA
N	1699	3667
Age, mean (SEM)	51.2 (0.41)	61.1 (0.16)
Sex, %		
Female	56.6	48.8
Male	43.4	51.2
Smoking status, %		
Never smoker	61.1	45.1
Former smoker	23.7	45.2
Current smoker	15.2	9.8
Cigarette pack-years for all participants, mean (SEM)	8.6 (0.41)	12.5 (0.37)
Body mass index, %		
<25	25.8	30.2
25 to <30	36.7	39.5
30 to <35	23.7	20.3
≥35	13.8	10.0
Education, %		
Less than high school diploma	7.8	15.4
High school diploma	51.3	17.9
Some college/tech school	24.5	28.3
Bachelor's degree or higher	16.4	38.4
Occupational group, % [1]		
Management/professional	32.7	44.3
Service	14.9	15.5
Sales/office	22.4	20.8
Blue-collar	25.8	19.3
Other	4.1	0
Airflow obstruction, %	6.5	5.7

[1] Groups based on Census 2000 occupational categories. Management/professional includes management; business & financial; computer & math; architecture & engineering; physical, life & social science; community & social service; legal; education; training & library; arts, design, entertainment, sports & media; healthcare practitioner & technicians. Service includes healthcare support; protective services, food prep & serving; building, grounds & maintenance; personal care & services. Sales/office includes sales and office & administrative support. Blue-collar includes farm, fishing & forestry; construction & extraction; installation, maintenance &

repair; production; transportation & material moving. Other includes military, homemaker, volunteer, and student.

Supplemental Table 2. Distribution of 1699 participants by occupational VGDF exposure, and frequency of airflow obstruction by exposure status

Occupational exposure	N (% of 1699)	Airflow obstruction n (%)	Cochran-Armitage test of linear trend	p
Total VGDF				
No-low	965 (56.8)	51 (5.3)		
Medium	298 (17.5)	20 (6.7)		
High	436 (25.7)	39 (8.9)	2.57	0.01
Vapor-gas				
No-low	1079 (63.5)	63 (5.8)		
Medium	240 (14.1)	15 (6.3)		
High	380 (22.4)	32 (8.4)	1.69	0.09
Total dust				
No-low	1175 (69.2)	69 (5.9)		
Medium	164 (9.7)	9 (5.5)		
High	360 (21.2)	32 (8.9)	1.89	0.06
Mineral dust				
No-low	1415 (83.3)	85 (6.0)		
Medium	62 (3.7)	6 (9.7)		
High	222 (13.1)	19 (8.6)	1.62	0.11
Organic dust				
No-low	1270 (74.7)	78 (6.1)		
Medium	100 (5.9)	4 (4.0)		
High	329 (19.4)	28 (8.5)	1.35	0.18
Fumes				
No-low	1613 (94.9)	102 (6.3%)		
Medium	46 (2.7)	3 (6.5%)		
High	40 (2.4)	5 (12.5%)	1.40	0.19

Supplemental Table 3. Odds ratios from regression models of airflow obstruction for cigarette smoking, high occupational VGDF exposure, and the interaction of these two covariates[1]

Cigarette smoking and high VGDF exposure	OR	Lower 95% CI	Upper 95% CI	p
Total VGDF				
Ever smoke	**2.95**	1.72	5.08	<.0001
High total VGDF	0.82	0.32	2.12	0.69
Ever smoke x High total VGDF	2.2	0.80	6.00	0.12
Vapor-gas				
Ever smoke	**3.3**	1.94	5.60	<.0001
High vapor-gas	0.91	0.34	2.38	0.84
Ever smoke x High vapor-gas	1.59	0.57	4.43	0.37
Total dust				
Ever smoke	**3.05**	1.80	5.17	<.0001
High total dust	0.76	0.28	2.12	0.60
Ever smoke x High total dust	2.27	0.79	6.57	0.13
Mineral dust				
Ever smoke	**3.18**	1.94	5.20	<.0001
High mineral dust	NR	NR	NR	NR
Ever smoke x High mineral dust	3.38	0.69	16.5	0.13
Organic dust				
Ever smoke	**3.21**	1.91	5.40	<.0001
High organic dust	0.78	0.28	2.20	0.64
Ever smoke x High organic dust	1.92	0.65	5.61	0.24

NR = OR and confidence intervals not reported because <3 participants with airflow obstruction; **Bolded OR** indicates $p \leq 0.05$

[1] A separate regression model of airflow obstruction was fit for each VGDF exposure. Each model included covariates for age, sex, logarithm of BMI, highest level of education, ever asthma, farm work status, and the smoking and VGDF exposures indicated in the table.