

Table S1. Stratified subgroup analyses of crude and adjusted odds ratios of asthma and COPD for COVID-19 infection in total participants by covariates

Characteristics	COVID-19 (exposure/total, %)	Control (exposure/total, %)	ORs (95% confidence interval) for COVID-19					
			Crude†	P-value	Model 1†‡	P-value	Model 2†§	P-value
Age < 60 years old	n = 2486	n = 9944						
Asthma								
Non-asthma	2,317/2,486 (93.2%)	9,363/9,944 (94.2%)	1		1		1	
Mild-asthma	151/2,486 (6.1%)	521/9,944 (5.2%)	1.17 (0.97-1.41)	0.096	1.12 (0.93-1.36)	0.242	1.11 (0.91-1.35)	0.299
Severe-asthma	18/2,486 (0.7%)	60/9,944 (0.6%)	1.21 (0.72-2.06)	0.475	1.18 (0.69-2.01)	0.558	1.12 (0.65-1.93)	0.682
COPD								
Non-COPD	2,424/2,486 (97.5%)	9,762/9,944 (98.2%)	1		1		1	
Mild- COPD	34/2,486 (1.4%)	110/9,944 (1.1%)	1.25 (0.85-1.83)	0.267	1.26 (0.85-1.88)	0.251	1.23 (0.83-1.84)	0.303
Severe- COPD	28/2,486 (1.1%)	72/9,944 (0.7%)	1.57 (1.01-2.43)	0.045*	1.49 (0.95-2.33)	0.083	1.47 (0.94-2.30)	0.094
Age ≥ 60 years old	n =1580	n =6320						
Asthma								
Non-asthma	1,387/1,580 (87.8%)	5,604/6,320 (88.7%)	1		1		1	
Mild-asthma	171/1,580 (10.8%)	640/6,320 (10.1%)	1.08 (0.90-1.29)	0.399	1.08 (0.89-1.30)	0.437	1.06 (0.88-1.29)	0.536
Severe-asthma	22/1,580 (1.4%)	76/6,320 (1.2%)	1.17 (0.73-1.89)	0.520	1.21 (0.73-1.98)	0.461	1.17 (0.70-1.93)	0.553
COPD								
Non-COPD	1478/1,580 (93.5%)	5,963/6,320 (94.4%)	1		1		1	
Mild- COPD	67/1,580 (4.2%)	249/6,320 (3.9%)	1.09 (0.83-1.43)	0.554	1.07 (0.80-1.43)	0.640	1.04 (0.78-1.40)	0.784
Severe- COPD	35/1,580 (2.2%)	108/6,320 (1.7%)	1.31 (0.89-1.93)	0.171	1.20 (0.80-1.80)	0.389	1.16 (0.76-1.75)	0.497
Men (n = 7,630)								
Asthma								
Non-asthma	1,406/1,526 (92.1%)	5,722/6,104 (93.7%)	1		1		1	
Mild-asthma	106/1,526 (6.9%)	325/6,104 (5.3%)	1.34 (1.06-1.68)	0.013*	1.29 (1.01-1.64)	0.038*	1.30 (1.01-1.66)	0.039*
Severe-asthma	14/1,526 (0.9%)	57/6,104 (0.9%)	1.01 (0.56-1.81)	0.986	0.93 (0.50-1.72)	0.812	0.93 (0.50-1.74)	0.815
COPD								
Non-COPD	1,457/1,526 (95.5%)	5,864/6,104 (96.1%)	1		1		1	

Mild- COPD	39/1,526 (2.6%)	162/6,104 (2.7%)	0.97 (0.68-1.39)	0.878	0.93 (0.64-1.35)	0.701	0.87 (0.59-1.28)	0.482
Severe- COPD	30/1,526 (2.0%)	78/6,104 (1.3%)	1.55 (1.01-2.38)	0.044*	1.23 (0.78-1.94)	0.375	1.16 (0.73-1.85)	0.528
Women (n = 12,700)								
Asthma								
Non-asthma	2,298/2,540 (90.5%)	9,245/10,160 (91.0%)	1		1		1	
Mild-asthma	216/2,540 (8.5%)	836/10,160 (8.2%)	1.04 (0.89-1.22)	0.624	1.03 (0.88-1.21)	0.704	1.01 (0.86-1.19)	0.899
Severe-asthma	26/2,540 (1.0%)	79/10,160 (0.8%)	1.33 (0.85-2.07)	0.216	1.41 (0.89-2.22)	0.140	1.33 (0.84-2.10)	0.229
COPD								
Non-COPD	2,445/2,540 (96.3%)	9,861/10,160 (97.1%)	1		1		1	
Mild- COPD	62/2,540 (2.4%)	197/10,160 (1.9%)	1.27 (0.95-1.70)	0.103	1.29 (0.96-1.74)	0.093	1.27 (0.94-1.71)	0.127
Severe- COPD	33/2,540 (1.3%)	102/10,160 (1.0%)	1.31 (0.88-1.94)	0.184	1.39 (0.93-2.08)	0.111	1.36 (0.91-2.05)	0.134
Low income (n = 7,360)								
Asthma								
Non-asthma	1,343/1,472 (91.2%)	5,396/5,888 (91.6%)	1		1		1	
Mild-asthma	116/1,472 (7.9%)	436/5,888 (7.4%)	1.07 (0.86-1.33)	0.538	1.05 (0.84-1.32)	0.662	1.03 (0.82-1.29)	0.800
Severe-asthma	13/1,472 (0.9%)	56/5,888 (1.0%)	0.93 (0.51-1.71)	0.823	1.01 (0.54-1.88)	0.981	0.95 (0.51-1.79)	0.877
COPD								
Non-COPD	1,415/1,472 (96.1%)	5,690/5,888 (96.6%)	1		1		1	
Mild- COPD	36/1,472 (2.4%)	134/5,888 (2.3%)	1.08 (0.75-1.58)	0.677	1.20 (0.81-1.76)	0.362	1.19 (0.80-1.77)	0.381
Severe- COPD	21/1,472 (1.4%)	64/5,888 (1.1%)	1.32 (0.80-2.17)	0.272	1.28 (0.76-2.16)	0.349	1.28 (0.76-2.16)	0.353
Middle income (n = 6,245)								
Asthma								
Non-asthma	1,142/1,249 (91.4%)	4,652/4,996 (93.1%)	1		1		1	
Mild-asthma	94/1,249 (7.5%)	315/4,996 (6.3%)	1.22 (0.96-1.55)	0.106	1.21 (0.95-1.55)	0.130	1.21 (0.94-1.55)	0.137
Severe-asthma	13/1,249 (1.0%)	29/4,996 (0.6%)	1.83 (0.95-3.53)	0.071	1.52 (0.77-3.02)	0.230	1.55 (0.77-3.10)	0.216
COPD								
Non-COPD	1,206/1,249 (96.6%)	4,843/4,996 (96.9%)	1		1		1	
Mild- COPD	26/1,249 (2.1%)	101/4,996 (2.0%)	1.04 (0.67-1.61)	0.876	0.96 (0.61-1.52)	0.863	0.90 (0.56-1.44)	0.657
Severe- COPD	17/1,249 (1.4%)	52/4,996 (1.0%)	1.31 (0.76-2.28)	0.332	1.26 (0.72-2.22)	0.424	1.20 (0.68-2.13)	0.524
High income (n = 6,725)								

Asthma

Non-asthma	1,219/1,345 (90.6%)	4,919/5,380 (91.4%)	1		1		1	
Mild-asthma	112/1,345 (8.3%)	410/5,380 (7.6%)	1.11 (0.89-1.38)	0.376	1.07 (0.85-1.34)	0.561	1.04 (0.82-1.31)	0.771
Severe-asthma	14/1,345 (1.0%)	51/5,380 (0.9%)	1.11 (0.61-2.01)	0.733	1.17 (0.64-2.14)	0.617	1.06 (0.57-1.98)	0.851

COPD

Non-COPD	1,281/1,345 (95.2%)	5,192/5,380 (96.5%)	1		1		1	
Mild- COPD	39/1,345 (2.9%)	124/5,380 (2.3%)	1.28 (0.89-1.85)	0.184	1.19 (0.82-1.74)	0.365	1.18 (0.80-1.73)	0.402
Severe- COPD	25/1,345 (1.9%)	64/5,380 (1.2%)	1.59 (1.00-2.54)	0.051	1.44 (0.88-2.35)	0.146	1.41 (0.85-2.34)	0.179

Underweight (n = 700)**Asthma**

Non-asthma	119/129 (92.2%)	532/571 (93.2%)	1		1		1	
Mild-asthma	8/129 (6.2%)	36/571 (6.3%)	0.99 (0.45-2.19)	0.987	1.03 (0.44-2.43)	0.939	0.56 (0.20-1.55)	0.265
Severe-asthma	2/129 (1.6%)	3/571 (0.5%)	2.98 (0.49-18.03)	0.234	3.27 (0.49-21.72)	0.220	3.65 (0.54-24.58)	0.184

COPD

Non-COPD	119/129 (92.2%)	558/571 (97.7%)	1		1		1	
Mild- COPD	8/129 (6.2%)	8/571 (1.4%)	4.69 (1.73-12.74)	0.003*	9.58 (2.96-31.03)	0.001*	12.56 (3.62-43.59)	<0.001*
Severe- COPD	2/129 (1.6%)	5/571 (0.9%)	1.88 (0.36-9.78)	0.456	2.63 (0.36-19.03)	0.338	2.72 (0.39-19.01)	0.314

Normal weight (n =7,819)**Asthma**

Non-asthma	1,339/1,458 (91.8%)	5,901/6,361 (92.8%)	1		1		1	
Mild-asthma	106/1,458 (7.3%)	413/6,361 (6.5%)	1.13 (0.91-1.41)	0.276	1.17 (0.93-1.47)	0.181	1.13 (0.89-1.42)	0.312
Severe-asthma	13/1,458 (0.9%)	47/6,361 (0.7%)	1.22 (0.66-2.26)	0.529	1.33 (0.70-2.53)	0.383	1.22 (0.63-2.34)	0.557

COPD

Non-COPD	1,397/1,458 (95.8%)	6,171/6,361 (97.0%)	1		1		1	
Mild- COPD	34/1,458 (2.3%)	127/6,361 (2.0%)	1.18 (0.81-1.73)	0.391	1.16 (0.77-1.73)	0.477	1.11 (0.74-1.67)	0.617
Severe- COPD	27/1,458 (1.9%)	63/6,361 (1.0%)	1.89 (1.20-2.98)	0.006*	1.95 (1.22-3.13)	0.006*	1.88 (1.17-3.03)	0.010*

Overweight (n = 4,868)**Asthma**

Non-asthma	923/1,010 (91.4%)	3,569/3,858 (92.5%)	1		1		1	
Mild-asthma	77/1,010 (7.6%)	263/3,858 (6.8%)	1.13 (0.87-1.47)	0.357	1.11 (0.85-1.47)	0.442	1.11 (0.84-1.47)	0.458

Severe-asthma	10/1,010 (1.0%)	26/3,858 (0.7%)	1.49 (0.72-3.10)	0.288	1.25 (0.59-2.68)	0.564	1.24 (0.57-2.71)	0.583
COPD								
Non-COPD	970/1,010 (96.0%)	3,725/3,858 (96.6%)	1		1		1	
Mild- COPD	27/1,010 (2.7%)	94/3,858 (2.4%)	1.10 (0.72-1.70)	0.658	1.08 (0.69-1.71)	0.731	1.05 (0.66-1.66)	0.844
Severe- COPD	13/1,010 (1.3%)	39/3,858 (1.0%)	1.28 (0.68-2.41)	0.443	1.05 (0.54-2.02)	0.896	0.99 (0.50-1.94)	0.964
Obese (n = 6,943)								
Asthma								
Non-asthma	1,323/1,469 (90.1%)	4,965/5,474 (90.7%)	1		1		1	
Mild-asthma	131/1,469 (8.9%)	449/5,474 (8.2%)	1.10 (0.89-1.34)	0.383	1.03 (0.83-1.27)	0.804	1.04 (0.83-1.29)	0.747
Severe-asthma	15/1,469 (1.0%)	60/5,474 (1.1%)	0.94 (0.53-1.66)	0.826	0.96 (0.54-1.71)	0.886	0.98 (0.55-1.76)	0.940
COPD								
Non-COPD	1,416/1,469 (96.4%)	5,271/5,474 (96.3%)	1		1		1	
Mild- COPD	32/1,469 (2.2%)	130/5,474 (2.4%)	0.92 (0.62-1.36)	0.661	0.91 (0.61-1.36)	0.635	0.90 (0.60-1.36)	0.617
Severe- COPD	21/1,469 (1.4%)	73/5,474 (1.3%)	1.07 (0.66-1.75)	0.784	0.96 (0.58-1.60)	0.881	0.96 (0.57-1.60)	0.869
Non-smoker (n = 14,753)								
Asthma								
Non-asthma	2,906/3,181 (91.4%)	10,609/11,572 (91.7%)	1		1		1	
Mild-asthma	247/3,181 (7.8%)	880/11,572 (7.6%)	1.03 (0.89-1.19)	0.745	1.04 (0.89-1.21)	0.604	1.02 (0.88-1.19)	0.796
Severe-asthma	28/3,181 (0.9%)	83/11,572 (0.7%)	1.23 (0.80-1.89)	0.343	1.28 (0.82-2.00)	0.270	1.22 (0.78-1.90)	0.393
COPD								
Non-COPD	3,062/3,181 (96.3%)	11,225/11,572 (97.0%)	1		1		1	
Mild- COPD	72/3,181 (2.3%)	223/11,572 (1.9%)	1.18 (0.91-1.55)	0.219	1.17 (0.89-1.55)	0.263	1.16 (0.87-1.53)	0.316
Severe- COPD	47/3,181 (1.5%)	124/11,572 (1.1%)	1.39 (0.99-1.95)	0.056	1.39 (0.98-1.97)	0.063	1.37 (0.96-1.94)	0.080
Past or current smoker (n = 5,577)								
Asthma								
Non-asthma	798/885 (90.2%)	4,358/4,692 (92.9%)	1		1		1	
Mild-asthma	75/885 (8.5%)	281/4,692 (6.0%)	1.46 (1.12-1.90)	0.005*	1.36 (1.03-1.79)	0.032*	1.37 (1.03-1.83)	0.031*
Severe-asthma	12/885 (1.4%)	53/4,692 (1.1%)	1.24 (0.66-2.32)	0.510	1.21 (0.63-2.32)	0.565	1.23 (0.63-2.41)	0.537
COPD								

Non-COPD	840/885 (94.9%)	4,500/4,692 (95.9%)	1		1		1	
Mild-COPD	29/885 (3.3%)	136/4,692 (2.9%)	1.14 (0.76-1.72)	0.522	1.00 (0.65-1.53)	0.999	0.90 (0.58-1.39)	0.623
Severe-COPD	16/885 (1.8%)	56/4,692 (1.2%)	1.53 (0.88-2.68)	0.136	1.17 (0.64-2.11)	0.616	1.04 (0.56-1.92)	0.907
Alcohol consumption < 1 time a week (n = 13,465)								
Asthma								
Non-asthma	2,676/2,968 (90.2%)	9,534/10,497 (90.8%)	1		1		1	
Mild-asthma	259/2,968 (8.7%)	855/10,497 (8.1%)	1.08 (0.93-1.25)	0.304	1.10 (0.95-1.28)	0.217	1.09 (0.93-1.27)	0.298
Severe-asthma	33/2,968 (1.1%)	108/10,497 (1.0%)	1.09 (0.74-1.61)	0.671	1.17 (0.78-1.75)	0.441	1.13 (0.75-1.70)	0.563
COPD								
Non-COPD	2,842/2,968 (95.8%)	10,107/10,497 (96.3%)	1		1		1	
Mild- COPD	78/2,968 (2.6%)	263/10,497 (2.5%)	1.06 (0.82-1.36)	0.684	1.10 (0.84-1.43)	0.500	1.07 (0.81-1.40)	0.637
Severe-COPD	48/2,968 (1.6%)	127/10,497 (1.2%)	1.34 (0.96-1.88)	0.083	1.30 (0.92-1.85)	0.137	1.27 (0.89-1.80)	0.187
Alcohol consumption ≥1 time a week (n = 6,865)								
Asthma								
Non-asthma	1,028/1,098 (93.6%)	5,433/5,767 (94.2%)	1		1		1	
Mild-asthma	63/1,098 (5.7%)	306/5,767 (5.3%)	1.09 (0.82-1.44)	0.554	1.09 (0.82-1.45)	0.562	1.06 (0.79-1.42)	0.695
Severe-asthma	7/1,098 (0.6%)	28/5,767 (0.5%)	1.32 (0.58-3.03)	0.511	1.31 (0.55-3.13)	0.547	1.20 (0.50-2.91)	0.682
COPD								
Non-COPD	1,060/1,098 (96.5%)	5,618/5,767 (97.4%)	1		1		1	
Mild- COPD	23/1,098 (2.1%)	96/5,767 (1.7%)	1.27 (0.80-2.01)	0.308	1.21 (0.75-1.95)	0.444	1.18 (0.72-1.92)	0.514
Severe-COPD	15/1,098 (1.4%)	53/5,767 (0.9%)	1.50 (0.84-2.67)	0.167	1.42 (0.78-2.59)	0.256	1.38 (0.75-2.54)	0.297
Systolic blood pressure < 140 mmHg and diastolic blood pressure < 90 mmHg (n = 17,427)								
Asthma								
Non-asthma	3,218/3,530 (91.2%)	12,834/13,897 (92.4%)	1		1		1	
Mild-asthma	280/3,530 (7.9%)	948/13,897 (6.8%)	1.18 (1.03-1.35)	0.021*	1.15 (1.00-1.33)	0.056	1.13 (0.98-1.31)	0.099
Severe-asthma	32/3,530 (0.9%)	115/13,897 (0.8%)	1.11 (0.75-1.65)	0.604	1.10 (0.74-1.66)	0.632	1.05 (0.70-1.58)	0.817
COPD								
Non-COPD	3,395/3,530 (96.2%)	13,466/13,897 (96.9%)	1		1		1	
Mild-COPD	81/3,530 (2.3%)	279/13,897 (2.0%)	1.15 (0.90-1.48)	0.269	1.13 (0.87-1.46)	0.365	1.10 (0.84-1.43)	0.500
Severe-COPD	54/3,530 (1.5%)	152/13,897 (1.1%)	1.41 (1.03-1.93)	0.032*	1.37 (0.99-1.90)	0.058	1.33 (0.96-1.85)	0.092

Systolic blood pressure \geq 140 mmHg or diastolic blood pressure \geq 90 mmHg (n = 2,903)**Asthma**

Non-asthma	486/536 (90.7%)	2,133/2,367 (90.1%)	1		1		1	
Mild-asthma	42/536 (7.8%)	213/2,367 (9.0%)	0.87 (0.61-1.22)	0.412	0.79 (0.55-1.15)	0.216	0.79 (0.54-1.14)	0.203
Severe-asthma	8/536 (1.5%)	21/2,367 (0.9%)	1.68 (0.74-3.80)	0.218	1.73 (0.74-4.04)	0.209	1.68 (0.70-4.00)	0.245

COPD

Non-COPD	507/536 (94.6%)	2,259/2,367 (95.4%)	1		1		1	
Mild-COPD	20/536 (3.7%)	80/2,367 (3.4%)	1.11 (0.68-1.84)	0.672	1.07 (0.63-1.82)	0.791	1.08 (0.62-1.86)	0.792
Severe-COPD	9/536 (1.7%)	28/2,367 (1.2%)	1.43 (0.67-3.06)	0.352	1.07 (0.48-2.40)	0.866	1.08 (0.48-2.43)	0.851

Fasting blood glucose < 100 mg/dL (n = 12,806)**Asthma**

Non-asthma	2,309/2,522 (91.6%)	9,465/10,284 (92.0%)	1		1		1	
Mild-asthma	192/2,522 (7.6%)	730/10,284 (7.1%)	1.08 (0.91-1.27)	0.373	1.04 (0.88-1.24)	0.635	1.02 (0.85-1.21)	0.870
Severe-asthma	21/2,522 (0.8%)	89/10,284 (0.9%)	0.97 (0.60-1.56)	0.891	0.93 (0.57-1.52)	0.773	0.87 (0.53-1.42)	0.578

COPD

Non-COPD	2,424/2,522 (96.1%)	9,967/10,284 (96.9%)	1		1		1	
Mild-COPD	58/2,522 (2.3%)	201/10,284 (2.0%)	1.19 (0.88-1.59)	0.257	1.20 (0.88-1.62)	0.250	1.20 (0.88-1.64)	0.243
Severe-COPD	40/2,522 (1.6%)	116/10,284 (1.1%)	1.42 (0.99-2.04)	0.059	1.40 (0.96-2.04)	0.078	1.41 (0.97-2.07)	0.075

Fasting blood glucose \geq 100 mg/dL (n =7,524)**Asthma**

Non-asthma	1,395/1,544 (90.3%)	5,502/5,980 (92.0%)	1		1		1	
Mild-asthma	130/1,544 (8.4%)	431/5,980 (7.2%)	1.19 (0.97-1.46)	0.096	1.19 (0.96-1.48)	0.107	1.20 (0.96-1.49)	0.106
Severe-asthma	19/1,544 (1.2%)	47/5,980 (0.8%)	1.60 (0.93-2.73)	0.088	1.67 (0.95-2.93)	0.077	1.68 (0.94-2.99)	0.078

COPD

Non-COPD	1,478/1,544 (95.7%)	5,758/5,980 (96.3%)	1		1		1	
Mild-COPD	43/1,544 (2.8%)	158/5,980 (2.6%)	1.06 (0.75-1.49)	0.737	1.03 (0.72-1.48)	0.866	0.94 (0.65-1.36)	0.733
Severe-COPD	23/1,544 (1.5%)	64/5,980 (1.1%)	1.40 (0.87-2.26)	0.169	1.17 (0.71-1.94)	0.541	1.09 (0.65-1.82)	0.741

Total cholesterol < 200 mg/dL (n = 11,393)**Asthma**

Non-asthma	2,109/2,325 (90.7%)	8,324/9,068 (91.8%)	1		1		1	
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Mild-asthma	190/2,325 (8.2%)	661/9,068 (7.3%)	1.14 (0.96-1.34)	0.142	1.14 (0.96-1.36)	0.145	1.12 (0.93-1.34)	0.227
Severe-asthma	26/2,325 (1.1%)	83/9,068 (0.9%)	1.24 (0.79-1.93)	0.348	1.26 (0.80-1.99)	0.327	1.19 (0.75-1.89)	0.469
COPD								
Non-COPD	2,224/2,325 (95.7%)	8,744/9,068 (96.4%)	1		1		1	
Mild-COPD	63/2,325 (2.7%)	228/9,068 (2.5%)	1.09 (0.82-1.44)	0.566	1.12 (0.83-1.51)	0.458	1.02 (0.83-1.26)	0.841
Severe-COPD	38/2,325 (1.6%)	96/9,068 (1.1%)	1.56 (1.07-2.27)	0.022*	1.46 (0.98-2.17)	0.061	1.03 (0.55-1.90)	0.938
Total cholesterol ≥ 200 mg/dL (n = 8,937)								
Asthma								
Non-asthma	1,595/1,741 (91.6%)	6,643/7,196 (92.3%)	1		1		1	
Mild-asthma	132/1,741 (7.6%)	500/7,196 (6.9%)	1.10 (0.90-1.34)	0.351	1.04 (0.84-1.28)	0.733	1.08 (0.80-1.46)	0.622
Severe-asthma	14/1,741 (0.8%)	53/7,196 (0.7%)	1.10 (0.61-1.99)	0.752	1.07 (0.58-1.96)	0.830	1.40 (0.94-2.09)	0.101
COPD								
Non-COPD	1,678/1,741 (96.4%)	6,981/7,196 (97.0%)	1		1		1	
Mild-COPD	38/1,741 (2.2%)	131/7,196 (1.8%)	1.21 (0.84-1.74)	0.313	1.17 (0.80-1.71)	0.410	1.17 (0.79-1.71)	0.436
Severe-COPD	25/1,741 (1.4%)	84/7,196 (1.2%)	1.24 (0.79-1.94)	0.352	1.16 (0.73-1.85)	0.537	1.15 (0.72-1.85)	0.554
CCI scores = 0 (n = 17,698)								
Asthma								
Non-asthma	2,840/3,089 (91.9%)	13,489/14,609 (92.3%)	1		1		1	
Mild-asthma	219/3,089 (7.1%)	1004/14,609 (6.9%)	1.04 (0.89-1.21)	0.647	1.05 (0.90-1.23)	0.543	1.04 (0.89-1.22)	0.634
Severe-asthma	30/3,089 (1.0%)	116/14,609 (0.8%)	1.23 (0.82-1.84)	0.318	1.20 (0.79-1.81)	0.387	1.16 (0.76-1.75)	0.497
COPD								
Non-COPD	2,990/3,089 (96.8%)	14,172/14,609 (97.0%)	1		1		1	
Mild-COPD	58/3,089 (1.9%)	298/14,609 (2.0%)	0.92 (0.69-1.23)	0.578	1.03 (0.77-1.37)	0.855	1.01 (0.76-1.36)	0.939
Severe-COPD	41/3,089 (1.3%)	139/14,609 (1.0%)	1.40 (0.99-1.99)	0.061	1.37 (0.96-1.97)	0.083	1.35 (0.94-1.93)	0.108
CCI scores = 1 (n = 1,454)								
Asthma								
Non-asthma	524/588 (89.1%)	782/866 (90.3%)	1		1		1	
Mild-asthma	57/588 (9.7%)	74/866 (8.5%)	1.15 (0.80-1.65)	0.451	1.37 (0.93-2.01)	0.401	1.28 (0.86-1.90)	0.398
Severe-asthma	7/588 (1.2%)	10/866 (1.2%)	1.05 (0.40-2.76)	0.930	1.32 (0.48-3.69)	0.109	1.14 (0.40-3.29)	0.226

COPD

Non-COPD	555/588 (94.4%)	824/866 (95.2%)	1		1		1	
Mild-COPD	22/588 (3.7%)	24/866 (2.8%)	1.36 (0.76-2.45)	0.305	1.69 (0.91-3.12)	0.399	1.52 (0.80-2.89)	0.803
Severe-COPD	11/588 (1.9%)	18/866 (2.1%)	0.91 (0.43-1.94)	0.801	1.21 (0.54-2.69)	0.095	1.14 (0.51-2.57)	0.204

CCI scores ≥ 2 (n = 1,178)**Asthma**

Non-asthma	340/389 (87.4%)	696/789 (88.2%)	1		1		1	
Mild-asthma	46/389 (11.8%)	83/789 (10.5%)	1.14 (0.77-1.66)	0.518	1.16 (0.77-1.73)	0.114	1.13 (0.74-1.72)	0.114
Severe-asthma	3/389 (0.8%)	10/789 (1.3%)	0.61 (0.17-2.25)	0.462	0.55 (0.15-2.09)	0.424	0.52 (0.13-2.02)	0.411

COPD

Non-COPD	357/389 (91.8%)	729/789 (92.4%)	1		1		1	
Mild-COPD	21/389 (5.4%)	37/789 (4.7%)	1.16 (0.67-2.01)	0.599	1.12 (0.63-1.98)	0.146	1.15 (0.64-2.08)	0.566
Severe-COPD	11/389 (2.8%)	23/789 (2.9%)	0.98 (0.47-2.03)	0.949	1.07 (0.50-2.30)	0.416	1.05 (0.48-2.32)	0.344

NSAID used < 6 times (n = 10,717)**Asthma**

Non-asthma	1,871/1,972 (94.9%)	8,318/8,745 (95.1%)	1		1		1	
Mild-asthma	96/1,972 (4.9%)	376/8,745 (4.3%)	1.14 (0.90-1.43)	0.280	1.16 (0.91-1.47)	0.232	1.12 (0.88-1.43)	0.364
Severe-asthma	05/1,972 (0.3%)	51/8,745 (0.6%)	0.44 (0.17-1.09)	0.077	0.51 (0.20-1.30)	0.161	0.48 (0.19-1.24)	0.128

COPD

Non-COPD	1,912/1,972 (97.0%)	8,547/8,745 (97.7%)	1		1		1	
Mild-COPD	35/1,972 (1.8%)	136/8,745 (1.6%)	1.15 (0.79-1.67)	0.464	1.10 (0.74-1.63)	0.641	1.04 (0.89-1.23)	0.611
Severe-COPD	25/1,972 (1.3%)	62/8,745 (0.7%)	1.80 (1.13-2.88)	0.013*	1.66 (1.02-2.71)	0.040*	1.43 (0.94-2.18)	0.092

NSAID used ≥ 6 times (n = 9,613)**Asthma**

Non-asthma	1,833/2,094 (87.5%)	6,649/7,519 (88.4%)	1		1		1	
Mild-asthma	226/2,094 (10.8%)	785/7,519 (10.4%)	1.04 (0.89-1.22)	0.588	1.05 (0.89-1.24)	0.543	1.10 (0.73-1.64)	0.655
Severe-asthma	35/2,094 (1.7%)	85/7,519 (1.1%)	1.49 (1.01-2.22)	0.047*	1.47 (0.98-2.21)	0.066	1.66 (1.02-2.72)	0.042*

COPD

Non-COPD	1,990/2,094 (95.0%)	7,178/7,519 (95.5%)	1		1		1	
Mild-COPD	66/2,094 (3.2%)	223/7,519 (3.0%)	1.07 (0.81-1.41)	0.646	1.12 (0.84-1.49)	0.455	1.07 (0.80-1.44)	0.644

Severe-COPD	38/2,094 (1.8%)	118/7,519 (1.6%)	1.16 (0.80-1.68)	0.426	1.14 (0.78-1.68)	0.496	1.09 (0.74-1.61)	0.674
Steroid used < 3 times (n = 11,308)								
Asthma								
Non-asthma	2,101/2,206 (95.2%)	8,676/9,102 (95.3%)	1		1		1	
Mild-asthma	98/2,206 (4.4%)	405/9,102 (4.4%)	1.00 (0.80-1.25)	0.995	0.97 (0.77-1.23)	0.816	0.98 (0.78-1.24)	0.879
Severe-asthma	7/2,206 (0.3%)	21/9,102 (0.2%)	1.38 (0.59-3.24)	0.464	1.41 (0.59-3.37)	0.439	1.45 (0.60-3.46)	0.409
COPD								
Non-COPD	2,164/2,206 (98.1%)	8,927/9,102 (98.1%)	1		1		1	
Mild-COPD	31/2,206 (1.4%)	143/9,102 (1.6%)	0.89 (0.61-1.32)	0.576	0.85 (0.57-1.28)	0.445	0.85 (0.56-1.28)	0.434
Severe-COPD	11/2,206 (0.5%)	32/9,102 (0.4%)	1.42 (0.71-2.82)	0.318	1.26 (0.62-2.55)	0.522	1.26 (0.62-2.56)	0.515
Steroid used ≥ 3 times (n = 9,022)								
Asthma								
Non-asthma	1,603/1,860 (86.2%)	6,291/7,162 (87.8%)	1		1		1	
Mild-asthma	224/1,860 (12.0%)	756/7,162 (10.6%)	1.16 (0.99-1.36)	0.063	1.14 (0.96-1.34)	0.131	1.10 (0.93-1.30)	0.253
Severe-asthma	33/1,860 (1.8%)	115/7,162 (1.6%)	1.13 (0.76-1.67)	0.551	1.12 (0.75-1.68)	0.570	1.04 (0.69-1.57)	0.858
COPD								
Non-COPD	1,738/1,860 (93.4%)	6,798/7,162 (94.9%)	1		1		1	
Mild-COPD	70/1,860 (3.8%)	216/7,162 (3.0%)	1.27 (0.96-1.67)	0.091	1.28 (0.96-1.70)	0.096	1.25 (0.93-1.67)	0.140
Severe-COPD	52/1,860 (2.8%)	148/7,162 (2.1%)	1.38 (1.00-1.89)	0.052	1.34 (0.96-1.87)	0.086	1.31 (0.93-1.83)	0.122
Non-hypertension (n = 14,543)								
Asthma								
Non-asthma	2,662/2,878 (92.5%)	10,868/11,665 (93.2%)	1		1		1	
Mild-asthma	194/2,878 (6.7%)	711/11,665 (6.1%)	1.11 (0.95-1.31)	0.198	1.12 (0.94-1.32)	0.200	1.09 (0.92-1.30)	0.313
Severe-asthma	22/2,878 (0.8%)	86/11,665 (0.7%)	1.04 (0.65-1.67)	0.856	1.11 (0.69-1.81)	0.660	1.05 (0.65-1.71)	0.832
COPD								
Non-COPD	2,784/2,878 (96.7%)	11,367/11,665 (97.4%)	1		1		1	
Mild-COPD	55/2,878 (1.9%)	187/11,665 (1.6%)	1.20 (0.89-1.63)	0.237	1.21 (0.88-1.65)	0.245	1.18 (0.86-1.63)	0.297
Severe-COPD	39/2,878 (1.4%)	111/11,665 (1.0%)	1.44 (0.99-2.07)	0.054	1.48 (1.01-2.16)	0.043*	1.45 (0.99-2.12)	0.058
Hypertension (n = 5,787)								
Asthma								

Non-asthma	1,042/1,188 (87.7%)	4,099/4,599 (89.1%)	1		1		1	
Mild-asthma	128/1,188 (10.8%)	450/4,599 (9.8%)	1.12 (0.91-1.38)	0.289	1.08 (0.86-1.34)	0.516	1.08 (0.86-1.35)	0.520
Severe-asthma	18/1,188 (1.5%)	50/4,599 (1.1%)	1.42 (0.82-2.44)	0.209	1.33 (0.76-2.34)	0.321	1.33 (0.75-2.39)	0.333
COPD								
Non-COPD	1,118/1,188 (94.1%)	4,358/4,599 (94.8%)	1		1		1	
Mild-COPD	46/1,188 (3.9%)	172/4,599 (3.7%)	1.04 (0.75-1.45)	0.806	1.02 (0.72-1.45)	0.898	0.97 (0.68-1.39)	0.876
Severe-COPD	24/1,188 (2.0%)	69/4,599 (1.5%)	1.36 (0.85-2.17)	0.203	1.11 (0.67-1.82)	0.691	1.06 (0.64-1.75)	0.832

* Conditional or unconditional logistic regression model, Significance at P < 0.05

† Stratified model for age, sex and income.

‡ Model 1 was adjusted for obesity, smoking, alcohol consumption, systolic blood pressure, diastolic blood pressure, fasting blood glucose, total cholesterol, CCI scores, number of NSAID used, number of steroid used, and hypertension.

§ Model 2 was adjusted for model 1 plus asthma and COPD.

Table S2. Subgroup analyses of crude and adjusted odds ratios of asthma and COPD for morbidity in COVID-19 participants by covariates

Characteristics	Severe participants	Mild participants	ORs (95% confidence interval) for morbidity					
	(exposure/total, %)	(exposure/total, %)	Crude	P-value	Model 1†	P-value	Model 2‡	P-value
Age < 60 years old (n = 2,486)								
Asthma								
Non-asthma	82/92 (89.1%)	2,235/2,394 (93.4%)	1		1		1	
Mild-asthma	10/92 (10.9%)	141/2,394 (5.9%)	1.93 (0.98-3.81)	0.057	2.05 (1.01-4.18)	0.047*	2.18 (1.06-4.50)	0.035*
Severe-asthma	0/92 (0.0%)	18/2,394 (0.8%)	N/A		N/A		N/A	
COPD								
Non-COPD	89/92 (96.7%)	2,335/2,394 (97.5%)	1		1		1	
Mild-COPD	1/92 (1.1%)	33/2,394 (1.4%)	0.80 (0.11-5.88)	0.822	0.76 (0.10-5.74)	0.788	0.53 (0.07-4.26)	0.552
Severe-COPD	2/92 (2.2%)	26/2,394 (1.1%)	2.02 (0.47-8.64)	0.344	1.98 (0.44-8.99)	0.376	2.09 (0.46-9.53)	0.341
Age ≥ 60 years old (n = 1,580)								
Asthma								
Non-asthma	214/251 (85.3%)	1,173/1,329 (88.3%)	1		1		1	
Mild-asthma	33/251 (13.1%)	138/1,329 (10.4%)	1.31 (0.87-1.97)	0.192	0.92 (0.58-1.47)	0.723	0.83 (0.51-1.35)	0.445
Severe-asthma	4/251 (1.6%)	18/1,329 (1.4%)	1.22 (0.41-3.63)	0.724	0.61 (0.16-2.29)	0.468	0.46 (0.11-1.87)	0.278
COPD								
Non-COPD	224/251 (89.2%)	1,254/1,329 (94.4%)	1		1		1	
Mild-COPD	14/251 (5.6%)	53/1,329 (4.0%)	1.48 (0.81-2.71)	0.206	1.01 (0.50-2.04)	0.982	1.16 (0.56-2.41)	0.689
Severe-COPD	13/251 (5.2%)	22/1,329 (1.7%)	3.31 (1.64-6.66)	0.001*	2.35 (1.02-5.41)	0.045*	2.70 (1.14-6.42)	0.024*
Men (n = 1,526)								
Asthma								
Non-asthma	181/204 (88.7%)	1,225/1,322 (92.7%)	1		1		1	
Mild-asthma	21/204 (10.3%)	85/1,322 (6.4%)	1.67 (1.01-2.76)	0.045*	0.83 (0.46-1.49)	0.531	0.70 (0.37-1.30)	0.253

Severe-asthma	2/204 (1.0%)	12/1,322 (0.9%)	1.13 (0.25-5.08)	0.875	0.31 (0.04-2.34)	0.259	0.18 (0.02-1.53)	0.116
COPD								
Non-COPD	183/204 (89.7%)	1,274/1,322 (96.4%)	1		1		1	
Mild-COPD	12/204 (5.9%)	27/1,322 (2.0%)	3.09 (1.54-6.22)	0.002*	1.78 (0.76-4.15)	0.181	2.30 (0.95-5.58)	0.066
Severe-COPD	9/204 (4.4%)	21/1,322 (1.6%)	2.98 (1.35-6.62)	0.007*	1.63 (0.62-4.26)	0.322	2.03 (0.76-5.44)	0.159
Women (n = 2,540)								
Asthma								
Non-asthma	115/139 (82.7%)	2,183/2,401 (90.9%)	1		1		1	
Mild-asthma	22/139 (15.8%)	194/2,401 (8.1%)	2.15 (1.33-3.48)	0.002*	1.49 (0.87-2.54)	0.149	0.00 (0.00-0.00)	0.000
Severe-asthma	2/139 (1.4%)	24/2,401 (1.0%)	1.58 (0.37-6.78)	0.537	0.93 (0.19-4.57)	0.923	1.46 (0.84-2.56)	0.184
COPD								
Non-COPD	130/139 (93.5%)	2,315/2,401 (96.4%)	1		1		1	
Mild-COPD	3/139 (2.2%)	59/2,401 (2.5%)	0.91 (0.28-2.93)	0.868	0.42 (0.12-1.46)	0.171	0.37 (0.10-1.35)	0.133
Severe-COPD	6/139 (4.3%)	27/2,401 (1.1%)	3.96 (1.61-9.75)	0.003*	3.11 (1.10-8.78)	0.032*	2.71 (0.93-7.96)	0.069
Low income (n = 1,472)								
Asthma								
Non-asthma	76/88 (86.4%)	1,267/1,384 (91.5%)	1		1		1	
Mild-asthma	11/88 (12.5%)	105/1,384 (7.6%)	1.75 (0.90-3.39)	0.099	1.10 (0.51-2.39)	0.810	1.28 (0.58-2.83)	0.550
Severe-asthma	1/88 (0.0%)	12/1,384 (0.0%)	1.39 (0.18-10.83)	0.754	1.98 (0.23-17.14)	0.535	2.75 (0.27-28.34)	0.396
COPD								
Non-COPD	82/88 (93.2%)	1,333/1,384 (96.3%)	1		1		1	
Mild-COPD	1/88 (1.1%)	35/1,384 (2.5%)	0.46 (0.06-3.43)	0.452	0.16 (0.02-1.47)	0.106	0.13 (0.01-1.25)	0.078
Severe-COPD	5/88 (5.7%)	16/1,384 (1.2%)	5.08 (1.82-14.21)	0.002*	2.51 (0.69-9.10)	0.162	2.16 (0.57-8.09)	0.255
Middle income (n = 1,249)								
Asthma								
Non-asthma	93/110 (84.5%)	1,049/1,139 (92.1%)	1		1		1	
Mild-asthma	15/110 (13.6%)	79/1,139 (6.9%)	2.14 (1.19-3.87)	0.012*	1.56 (0.77-3.13)	0.215	1.47 (0.72-3.00)	0.291

Severe-asthma	2/110 (1.8%)	11/1,139 (1.0%)	2.05 (0.45-9.39)	0.355	0.30 (0.04-2.42)	0.255	0.18 (0.02-1.99)	0.161
COPD								
Non-COPD	101/110 (91.8%)	1,105/1,139 (97.0%)	1		1		1	
Mild-COPD	6/110 (5.5%)	20/1,139 (1.8%)	3.28 (1.29-8.36)	0.013*	1.75 (0.50-6.14)	0.381	2.16 (0.62-7.49)	0.224
Severe-COPD	3/110 (2.7%)	14/1,139 (1.2%)	2.34 (0.66-8.29)	0.186	1.07 (0.20-5.73)	0.941	1.10 (0.20-6.16)	0.916
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High income (n = 1,345)								
Asthma								
Non-asthma	127/145 (87.6%)	1,092/1,200 (91.0%)	1		1		1	
Mild-asthma	17/145 (11.7%)	95/1,200 (7.9%)	1.54 (0.89-2.66)	0.123	1.02 (0.54-1.92)	0.961	0.90 (0.47-1.76)	0.766
Severe-asthma	1/145 (0.7%)	13/1,200 (1.1%)	0.66 (0.09-5.10)	0.692	0.49 (0.05-4.40)	0.523	0.32 (0.03-3.47)	0.348
COPD								
Non-COPD	130/145 (89.7%)	1,151/1,200 (95.9%)	1		1		1	
Mild-COPD	8/145 (5.5%)	31/1,200 (2.6%)	2.29 (1.03-5.08)	0.042*	1.28 (0.51-3.22)	0.594	1.37 (0.53-3.52)	0.518
Severe-COPD	7/145 (4.8%)	18/1,200 (1.5%)	3.45 (1.41-8.40)	0.007*	2.88 (0.96-8.63)	0.058	3.23 (1.06-9.88)	0.040*
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Underweight (n = 129)								
Asthma								
Non-asthma	5/5 (100.0%)	114/124 (91.9%)	1		1		1	
Mild-asthma	0/5 (0.0%)	8/124 (6.5%)	N/A		N/A		N/A	
Severe-asthma	0/5 (0.0%)	2/124 (1.6%)	N/A		N/A		N/A	
COPD								
Non-COPD	4/05 (80.0%)	115/124 (92.7%)	1		1		1	
Mild-COPD	0/05 (0.0%)	8/124 (6.5%)	N/A		N/A		N/A	
Severe-COPD	1/05 (20.0%)	1/124 (0.8%)	28.75 (1.51-546.90)	0.025*	N/A		N/A	
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Normal weight (n = 1,458)								
Asthma								
Non-asthma	90/103 (87.4%)	1,249/1,355 (92.2%)	1		1		1	
Mild-asthma	12/103 (11.7%)	94/1,355 (6.9%)	1.77 (0.94-3.35)	0.079	1.62 (0.78-3.38)	0.197	1.78 (0.83-3.84)	0.142

Severe-asthma	1/103 (1.0%)	12/1,355 (0.9%)	1.16 (0.15-8.99)	0.890	0.28 (0.02-3.18)	0.302	0.33 (0.03-3.84)	0.372
COPD								
Non-COPD	95/103 (92.2%)	1,302/1,355 (96.1%)	1		1		1	
Mild-COPD	4/103 (3.9%)	30/1,355 (2.2%)	1.83 (0.63-5.30)	0.267	0.64 (0.18-2.25)	0.482	0.56 (0.15-2.05)	0.379
Severe-COPD	4/103 (3.9%)	23/1,355 (1.7%)	2.39 (0.81-7.04)	0.115	1.05 (0.28-3.98)	0.948	1.07 (0.27-4.26)	0.927
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Overweight (n = 1,010)								
Asthma								
Non-asthma	66/70 (94.3%)	857/940 (91.2%)	1		1		1	
Mild-asthma	3/70 (4.3%)	74/940 (7.9%)	0.53 (0.16-1.72)	0.287	0.28 (0.08-1.02)	0.054	0.26 (0.07-1.03)	0.055
Severe-asthma	1/70 (1.4%)	9/940 (1.0%)	1.44 (0.18-11.56)	0.730	0.94 (0.09-10.11)	0.961	0.91 (0.06-13.77)	0.944
COPD								
Non-COPD	66/70 (94.3%)	904/940 (96.2%)	1		1		1	
Mild-COPD	2/70 (2.9%)	25/940 (2.7%)	1.10 (0.25-4.73)	0.902	0.60 (0.12-2.96)	0.527	0.67 (0.12-3.66)	0.647
Severe-COPD	2/70 (2.9%)	11/940 (1.2%)	2.49 (0.54-11.47)	0.241	0.95 (0.14-6.35)	0.960	1.53 (0.18-13.13)	0.699
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Obese (n = 1,469)								
Asthma								
Non-asthma	135/165 (81.8%)	1,188/1,304 (91.1%)	1		1		1	
Mild-asthma	28/165 (17.0%)	103/1,304 (7.9%)	2.39 (1.52-3.77)	<0.001*	1.68 (0.99-2.84)	0.056	1.56 (0.90-2.69)	0.115
Severe-asthma	2/165 (1.2%)	13/1,304 (1.0%)	1.35 (0.30-6.06)	0.692	0.97 (0.17-5.56)	0.971	0.84 (0.13-5.37)	0.857
COPD								
Non-COPD	148/165 (89.7%)	1268/1,304 (97.2%)	1		1		1	
Mild-COPD	9/165 (5.5%)	23/1,304 (1.8%)	3.35 (1.52-7.38)	0.003*	1.87 (0.72-4.83)	0.199	1.66 (0.62-4.45)	0.317
Severe-COPD	8/165 (4.8%)	13/1,304 (1.0%)	5.28 (2.15-12.94)	<0.001*	4.98 (1.66-14.93)	0.004*	4.79 (1.57-14.62)	0.006*
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Non-smoker (n = 3,181)								
Asthma								
Non-asthma	203/233 (87.1%)	2,703/2,948 (91.7%)	1		1		1	
Mild-asthma	27/233 (11.6%)	220/2,948 (7.5%)	1.63 (1.07-2.50)	0.023*	1.17 (0.73-1.89)	0.511	1.14 (0.69-1.87)	0.612

Severe-asthma	3/233 (1.3%)	25/2,948 (0.8%)	1.60 (0.48-5.34)	0.446	1.08 (0.27-4.37)	0.919	1.19 (0.30-4.78)	0.803
COPD								
Non-COPD	215/233 (92.3%)	2,847/2,948 (96.6%)	1		1		1	
Mild-COPD	7/233 (3.0%)	65/2,948 (2.2%)	1.43 (0.65-3.15)	0.380	0.69 (0.29-1.69)	0.421	0.66 (0.26-1.65)	0.370
Severe-COPD	11/233 (4.7%)	36/2,948 (1.2%)	4.05 (2.03-8.06)	<0.001*	2.55 (1.12-5.85)	0.027*	2.46 (1.06-5.70)	0.037*
Past or current smoker (n = 885)								
Asthma								
Non-asthma	93/110 (84.5%)	705/775 (91.0%)	1		1		1	
Mild-asthma	16/110 (14.5%)	59/775 (7.6%)	2.06 (1.14-3.72)	0.017*	0.98 (0.47-2.04)	0.958	0.83 (0.38-1.82)	0.649
Severe-asthma	1/110 (0.9%)	11/775 (1.4%)	0.69 (0.09-5.40)	0.723	0.17 (0.02-1.93)	0.154	0.10 (0.01-1.34)	0.082
COPD								
Non-COPD	98/110 (89.1%)	742/775 (95.7%)	1		1		1	
Mild-COPD	8/110 (7.3%)	21/775 (2.7%)	2.89 (1.24-6.69)	0.014*	1.66 (0.57-4.83)	0.352	2.06 (0.66-6.37)	0.211
Severe-COPD	4/110 (3.6%)	12/775 (1.5%)	2.52 (0.80-7.98)	0.115	1.21 (0.29-5.08)	0.796	2.06 (0.46-9.35)	0.348
Alcohol consumption < 1 time a week (n = 2,968)								
Asthma								
Non-asthma	217/258 (84.1%)	2,459/2,710 (90.7%)	1		1		1	
Mild-asthma	38/258 (14.7%)	221/2,710 (8.2%)	1.95 (1.34-2.82)	<0.001*	1.25 (0.81-1.93)	0.321	1.19 (0.76-1.88)	0.447
Severe-asthma	3/258 (1.2%)	30/2,710 (1.1%)	1.13 (0.34-3.74)	0.838	0.42 (0.10-1.73)	0.230	0.38 (0.09-1.64)	0.193
COPD								
Non-COPD	234/258 (90.7%)	2,608/2,710 (96.2%)	1		1		1	
Mild-COPD	11/258 (4.3%)	67/2,710 (2.5%)	1.83 (0.95-3.51)	0.069	0.85 (0.39-1.83)	0.671	0.91 (0.41-2.01)	0.817
Severe-COPD	13/258 (5.0%)	35/2,710 (1.3%)	4.14 (2.16-7.93)	<0.001*	2.32 (1.04-5.18)	0.040*	2.38 (1.05-5.38)	0.037*
Alcohol consumption ≥1 time a week (n = 1,098)								
Asthma								
Non-asthma	79/85 (92.9%)	949/1,013 (93.7%)	1		1		1	
Mild-asthma	5/85 (5.9%)	58/1,013 (5.7%)	1.04 (0.40-2.66)	0.942	0.63 (0.22-1.78)	0.380	0.51 (0.17-1.54)	0.233

Severe-asthma	1/85 (1.2%)	6/1,013 (0.6%)	2.00 (0.24-16.84)	0.523	2.72 (0.28-26.22)	0.387	1.71 (0.15-19.84)	0.668
COPD								
Non-COPD	79/85 (92.9%)	981/1,013 (96.8%)	1		1		1	
Mild-COPD	4/85 (4.7%)	19/1,013 (1.9%)	2.62 (0.87-7.88)	0.087	1.87 (0.56-6.28)	0.311	2.31 (0.63-8.52)	0.208
Severe-COPD	2/85 (2.4%)	13/1,013 (1.3%)	1.91 (0.42-8.62)	0.400	1.80 (0.34-9.36)	0.487	1.81 (0.33-9.91)	0.497
Systolic blood pressure < 140 mmHg and diastolic blood pressure < 90 mmHg (n = 3,530)								
Asthma								
Non-asthma	231/268 (86.2%)	2,987/3,262 (91.6%)	1		1		1	
Mild-asthma	34/268 (12.7%)	246/3,262 (7.5%)	1.79 (1.22-2.62)	0.003*	1.13 (0.73-1.76)	0.587	1.08 (0.68-1.72)	0.732
Severe-asthma	3/268 (1.1%)	29/3,262 (0.9%)	1.34 (0.40-4.42)	0.634	0.37 (0.08-1.68)	0.198	0.32 (0.07-1.56)	0.158
COPD								
Non-COPD	246/268 (91.8%)	3,149/3,262 (96.5%)	1		1		1	
Mild-COPD	12/268 (4.5%)	69/3,262 (2.1%)	2.23 (1.19-4.17)	0.012*	1.10 (0.52-2.30)	0.804	1.20 (0.56-2.56)	0.633
Severe-COPD	10/268 (3.7%)	44/3,262 (1.3%)	2.91 (1.45-5.85)	0.003*	1.24 (0.53-2.91)	0.615	1.34 (0.57-3.17)	0.506
Systolic blood pressure ≥ 140 mmHg or diastolic blood pressure ≥ 90 mmHg (n = 536)								
Asthma								
Non-asthma	65/75 (86.7%)	421/461 (91.3%)	1		1		1	
Mild-asthma	9/75 (12.0%)	33/461 (7.2%)	1.77 (0.81-3.86)	0.154	1.07 (0.42-2.77)	0.886	1.15 (0.42-3.16)	0.791
Severe-asthma	1/75 (1.3%)	7/461 (1.5%)	0.93 (0.11-7.64)	0.943	1.59 (0.15-17.24)	0.704	1.09 (0.09-13.52)	0.950
COPD								
Non-COPD	67/75 (89.3%)	440/461 (95.4%)	1		1		1	
Mild-COPD	3/75 (4.0%)	17/461 (3.7%)	1.16 (0.33-4.06)	0.818	0.72 (0.15-3.39)	0.681	0.68 (0.14-3.43)	0.642
Severe-COPD	5/75 (6.7%)	4/461 (0.9%)	8.21 (2.15-31.34)	0.002*	22.32 (3.28-152.00)	0.002*	22.24 (3.11-158.94)	0.002*
Fasting blood glucose < 100 mg/dL (n = 2,522)								
Asthma								
Non-asthma	130/153 (85.0%)	2,179/2,369 (92.0%)	1		1		1	
Mild-asthma	21/153 (13.7%)	171/2,369 (7.2%)	2.06 (1.27-3.35)	0.004*	1.18 (0.67-2.09)	0.561	1.09 (0.60-1.96)	0.785

Severe-asthma	2/153 (1.3%)	19/2,369 (0.8%)	1.76 (0.41-7.66)	0.448	1.01 (0.19-5.28)	0.990	0.76 (0.13-4.53)	0.765
COPD								
Non-COPD	139/153 (90.8%)	2,285/2,369 (96.5%)	1		1		1	
Mild-COPD	7/153 (4.6%)	51/2,369 (2.2%)	2.26 (1.01-5.06)	0.049*	1.32 (0.52-3.35)	0.564	1.29 (0.50-3.36)	0.596
Severe-COPD	7/153 (4.6%)	33/2,369 (1.4%)	3.49 (1.52-8.02)	0.003*	1.92 (0.68-5.41)	0.218	1.95 (0.66-5.78)	0.229
Fasting blood glucose ≥ 100 mg/dL (n = 1,544)								
Asthma								
Non-asthma	166/190 (87.4%)	1,229/1,354 (90.8%)	1		1		1	
Mild-asthma	22/190 (11.6%)	108/1,354 (8.0%)	1.51 (0.93-2.45)	0.098	1.03 (0.58-1.80)	0.931	1.01 (0.56-1.81)	0.977
Severe-asthma	2/190 (1.1%)	17/1,354 (1.3%)	0.87 (0.20-3.80)	0.854	0.30 (0.05-1.85)	0.194	0.30 (0.05-2.01)	0.215
COPD								
Non-COPD	174/190 (91.6%)	1,304/1,354 (96.3%)	1		1		1	
Mild-COPD	8/190 (4.2%)	35/1,354 (2.6%)	1.71 (0.78-3.75)	0.179	0.80 (0.32-1.99)	0.624	0.97 (0.37-2.53)	0.950
Severe-COPD	8/190 (4.2%)	15/1,354 (1.1%)	4.00 (1.67-9.57)	0.002*	2.15 (0.77-6.03)	0.146	2.23 (0.78-6.31)	0.133
Total cholesterol < 200 mg/dL (n = 2,325)								
Asthma								
Non-asthma	186/220 (84.5%)	1,923/2,105 (91.4%)	1		1		1	
Mild-asthma	32/220 (14.5%)	158/2,105 (7.5%)	2.09 (1.39-3.15)	<0.001*	1.40 (0.87-2.25)	0.169	1.34 (0.82-2.21)	0.245
Severe-asthma	2/220 (0.9%)	24/2,105 (1.1%)	0.86 (0.20-3.67)	0.840	0.32 (0.06-1.68)	0.177	0.27 (0.05-1.56)	0.142
COPD								
Non-COPD	198/220 (90.0%)	2,026/2,105 (96.2%)	1		1		1	
Mild-COPD	10/220 (4.5%)	53/2,105 (2.5%)	1.93 (0.97-3.85)	0.062	0.84 (0.37-1.88)	0.666	0.87 (0.38-2.03)	0.754
Severe-COPD	12/220 (5.5%)	26/2,105 (1.2%)	4.72 (2.35-9.51)	<0.001*	2.45 (1.02-5.85)	0.045*	2.53 (1.04-6.14)	0.040*
Total cholesterol ≥ 200 mg/dL (n = 1,741)								
Asthma								
Non-asthma	110/123 (89.4%)	1,485/1,618 (91.8%)	1		1		1	
Mild-asthma	11/123 (8.9%)	121/1,618 (7.5%)	1.23 (0.64-2.34)	0.535	0.76 (0.36-1.60)	0.465	0.72 (0.33-1.54)	0.393

Severe-asthma	2/123 (1.6%)	12/1,618 (0.7%)	2.25 (0.50-10.18)	0.292	1.59 (0.23-11.01)	0.637	1.36 (0.18-10.16)	0.765
COPD								
Non-COPD	115/123 (93.5%)	1,563/1,618 (96.6%)	1		1		1	
Mild-COPD	5/123 (4.1%)	33/1,618 (2.0%)	2.06 (0.79-5.38)	0.140	1.25 (0.39-3.95)	0.710	1.32 (0.41-4.28)	0.643
Severe-COPD	3/123 (2.4%)	22/1,618 (1.4%)	1.85 (0.55-6.28)	0.322	1.55 (0.40-5.96)	0.525	1.61 (0.41-6.36)	0.497
CCI scores = 0 (n = 3,089)								
Asthma								
Non-asthma	143/164 (87.2%)	2,697/2,925 (92.2%)	1		1		1	
Mild-asthma	21/164 (12.8%)	198/2,925 (6.8%)	2.00 (1.24-3.23)	0.005*	1.49 (0.87-2.56)	0.144	1.43 (0.82-2.49)	0.204
Severe-asthma	0/164 (0.0%)	30/2,925 (1.0%)	N/A		N/A		N/A	
COPD								
Non-COPD	153/164 (93.3%)	2,837/2,925 (97.0%)	1		1		1	
Mild-COPD	4/164 (2.4%)	54/2,925 (1.8%)	1.37 (0.49-3.84)	0.545	1.06 (0.34-3.24)	0.925	0.99 (0.32-3.12)	0.988
Severe-COPD	7/164 (4.3%)	34/2,925 (1.2%)	3.82 (1.67-8.75)	0.002*	2.17 (0.78-6.08)	0.140	2.74 (0.98-7.63)	0.054
CCI scores = 1 (n = 588)								
Asthma								
Non-asthma	77/91 (84.6%)	447/497 (89.9%)	1		1		1	
Mild-asthma	12/91 (13.2%)	45/497 (9.1%)	1.55 (0.78-3.06)	0.209	0.95 (0.45-2.03)	0.255	0.88 (0.39-1.97)	0.279
Severe-asthma	2/91 (2.2%)	5/497 (1.0%)	2.32 (0.44-12.18)	0.319	2.20 (0.35-13.76)	0.903	1.84 (0.28-12.23)	0.758
COPD								
Non-COPD	85/91 (93.4%)	470/497 (94.6%)	1		1		1	
Mild-COPD	3/91 (3.3%)	19/497 (3.8%)	0.87 (0.25-3.02)	0.830	0.80 (0.20-3.18)	0.255	0.77 (0.18-3.37)	0.528
Severe-COPD	3/91 (3.3%)	8/497 (1.6%)	2.07 (0.54-7.97)	0.289	4.06 (0.83-19.80)	0.750	3.89 (0.75-20.26)	0.733
CCI scores ≥ 2 (n = 389)								
Asthma								
Non-asthma	76/88 (86.4%)	264/301 (87.7%)	1		1		1	
Mild-asthma	10/88 (11.4%)	36/301 (12.0%)	0.97 (0.46-2.03)	0.925	0.48 (0.18-1.29)	0.933	0.46 (0.17-1.28)	0.997

Severe-asthma	2/88 (2.3%)	1/301 (0.3%)	6.94 (0.62-77.51)	0.116	1.17 (0.03-45.02)	0.015*	1.22 (0.03-56.33)	0.015*
COPD								
Non-COPD	125/135 (92.6%)	1,746/1,837 (95.0%)	1		1		1	
Mild-COPD	10/135 (7.4%)	86/1,837 (4.7%)	1.62 (0.82-3.20)	0.162	1.03 (0.47-2.27)	0.937	0.88 (0.37-2.07)	0.772
Severe-COPD	0/135 (0.0%)	5/1,837 (0.3%)	N/A		N/A		N/A	
NSAID used < 6 times (n = 1,972)								
Asthma								
Non-asthma	125/135 (92.6%)	1,746/1,837 (95.0%)	1		1		1	
Mild-asthma	10/135 (7.4%)	86/1,837 (4.7%)	1.62 (0.82-3.20)	0.162	1.03 (0.47-2.27)	0.937	0.88 (0.37-2.07)	0.772
Severe-asthma	0/135 (0.0%)	5/1,837 (0.3%)	N/A		N/A		N/A	
COPD								
Non-COPD	124/135 (91.9%)	1,788/1,837 (97.3%)	1		1		1	
Mild-COPD	4/135 (3.0%)	31/1,837 (1.7%)	1.86 (0.65-5.36)	0.250	0.90 (0.28-2.89)	0.860	0.99 (0.29-3.38)	0.990
Severe-COPD	7/135 (5.2%)	18/1,837 (1.0%)	5.61 (2.30-13.68)	<0.001*	4.93 (1.68-14.44)	0.004*	5.05 (1.71-14.95)	0.003*
NSAID used ≥ 6 times (n = 2,094)								
Asthma								
Non-asthma	171/208 (82.2%)	1,662/1,886 (88.1%)	1		1		1	
Mild-asthma	33/208 (15.9%)	193/1,886 (10.2%)	1.66 (1.11-2.48)	0.013*	1.11 (0.70-1.77)	0.660	1.11 (0.69-1.78)	0.683
Severe-asthma	4/208 (1.9%)	31/1,886 (1.6%)	1.25 (0.44-3.60)	0.674	0.56 (0.15-2.05)	0.379	0.54 (0.14-2.09)	0.375
COPD								
Non-COPD	189/208 (90.9%)	1,801/1,886 (95.5%)	1		1		1	
Mild-COPD	11/208 (5.3%)	55/1,886 (2.9%)	1.91 (0.98-3.70)	0.057	0.94 (0.41-2.12)	0.872	0.98 (0.42-2.27)	0.964
Severe-COPD	8/208 (3.8%)	30/1,886 (1.6%)	2.54 (1.15-5.62)	0.021*	1.11 (0.41-2.99)	0.831	1.18 (0.43-3.24)	0.745
Steroid used < 3 times (n = 2,206)								
Asthma								
Non-asthma	138/144 (95.8%)	1,963/2,062 (95.2%)	1		1		1	
Mild-asthma	6/144 (4.2%)	92/2,062 (4.5%)	0.93 (0.40-2.16)	0.862	0.67 (0.27-1.66)	0.391	0.62 (0.24-1.59)	0.319

Severe-asthma	0/144 (0.0%)	07/2,062 (0.3%)	N/A		N/A		N/A	
COPD								
Non-COPD	139/144 (96.5%)	2,025/2,062 (98.2%)	1		1		1	
Mild-COPD	3/144 (2.1%)	28/2,062 (1.4%)	1.56 (0.47-5.20)	0.468	1.41 (0.38-5.17)	0.605	1.59 (0.42-5.99)	0.492
Severe-COPD	2/144 (1.4%)	9/2,062 (0.4%)	3.24 (0.69-15.13)	0.135	1.19 (0.19-7.40)	0.853	1.53 (0.23-9.99)	0.660
Steroid used ≥ 3 times (n = 1,860)								
Asthma								
Non-asthma	158/199 (79.4%)	1,445/1,661 (87.0%)	1		1		1	
Mild-asthma	37/199 (18.6%)	187/1,661 (11.3%)	1.81 (1.23-2.67)	0.003*	1.34 (0.85-2.13)	0.213	1.31 (0.82-2.11)	0.262
Severe-asthma	4/199 (2.0%)	29/1,661 (1.7%)	1.26 (0.44-3.64)	0.667	0.51 (0.14-1.83)	0.300	0.45 (0.12-1.70)	0.238
COPD								
Non-COPD	174/199 (87.4%)	1,564/1,661 (94.2%)	1		1		1	
Mild-COPD	12/199 (6.0%)	58/1,661 (3.5%)	1.86 (0.98-3.53)	0.619	0.82 (0.38-1.79)	0.376	0.84 (0.38-1.89)	0.678
Severe-COPD	13/199 (6.5%)	39/1,661 (2.3%)	3.00 (1.57-5.72)	0.001*	2.52 (1.14-5.54)	0.022*	2.61 (1.17-5.81)	0.019*
Non-hypertension (n = 2,878)								
Asthma								
Non-asthma	147/165 (89.1%)	2,515/2,713 (92.7%)	1		1		1	
Mild-asthma	18/165 (10.9%)	176/2,713 (6.5%)	1.75 (1.05-2.92)	0.033	1.23 (0.69-2.19)	0.492	1.26 (0.69-2.29)	0.447
Severe-asthma	0/165 (0.0%)	22/2,713 (0.8%)	N/A		N/A		N/A	
COPD								
Non-COPD	157/165 (95.2%)	2,627/2,713 (96.8%)	1		1		1	
Mild-COPD	5/165 (3.0%)	50/2,713 (1.8%)	1.67 (0.66-4.26)	0.280	1.04 (0.36-2.96)	0.946	0.95 (0.32-2.77)	0.919
Severe-COPD	3/165 (1.8%)	36/2,713 (1.3%)	1.39 (0.43-4.58)	0.584	0.59 (0.14-2.40)	0.459	0.65 (0.15-2.78)	0.556
Hypertension (n = 1,188)								
Asthma								
Non-asthma	149/178 (83.7%)	893/1,010 (88.4%)	1		1		1	
Mild-asthma	25/178 (14.0%)	103/1,010 (10.2%)	1.46 (0.91-2.33)	0.118	1.03 (0.60-1.76)	0.930	0.92 (0.52-1.62)	0.764

Severe- asthma	4/178 (2.2%)	14/1,010 (1.4%)	1.71 (0.56-5.27)	0.349	0.90 (0.24-3.40)	0.881	0.72 (0.17-2.99)	0.650
COPD								
Non-COPD	156/178 (87.6%)	962/1,010 (95.2%)	1		1		1	
Mild-COPD	10/178 (5.6%)	36/1,010 (3.6%)	1.71 (0.83-3.52)	0.143	0.87 (0.38-2.00)	0.746	0.95 (0.39-2.29)	0.904
Severe- COPD	12/178 (6.7%)	12/1,010 (1.2%)	6.17 (2.72-13.97)	<0.001*	4.36 (1.66-11.43)	0.003*	4.63 (1.71-12.54)	0.003*

* Unconditional logistic regression model, Significance at $P < 0.05$

† Model 1 was adjusted for age, sex, income, obesity, smoking, alcohol consumption, systolic blood pressure, diastolic blood pressure, fasting blood glucose, total cholesterol, CCI scores, number of NSAID used, number of steroid used and hypertension.

‡ Model 2 was adjusted for model 1 plus asthma and COPD.

Table S3. Subgroup analyses of crude and adjusted odd ratios of asthma and COPD for mortality in COVID-19 participants by covariates

Characteristics	Dead participants (exposure/total, %)	Survived participants (exposure/total, %)	ORs (95% confidence interval) for mortality					
			Crude	P-value	Model 1†	P-value	Model 2‡	P-value
Age < 60 years old (n = 2,486)								
Asthma								
Non-asthma	12/12 (100.0%)	2,305/2,474 (93.2%)	1		1		1	
Mild-asthma	0/12 (0.0%)	151/2,474 (6.1%)	N/A		N/A		N/A	
Severe-asthma	0/12 (0.0%)	18/2,474 (0.7%)	N/A		N/A		N/A	
COPD								
Non-COPD	11/12 (91.7%)	2,413/2,474 (97.5%)	1		1		1	
Mild-COPD	0/12 (0.0%)	34/2,474 (1.4%)	N/A		N/A		N/A	
Severe-COPD	1/12 (8.3%)	27/2,474 (1.1%)	8.13 (1.01-65.16)	0.049*	13.09 (0.87-196.11)	0.063	32.84 (2.43-444.17)	0.009*
Age ≥ 60 years old (n = 1,580)								
Asthma								
Non-asthma	96/120 (80.0%)	1,291/1,460 (88.4%)	1		1		1	
Mild-asthma	20/120 (16.7%)	151/1,460 (10.3%)	1.78 (1.07-2.97)	0.027*	1.07 (0.58-1.97)	0.837	0.93 (0.49-1.79)	0.838
Severe-asthma	4/120 (3.3%)	18/1,460 (1.2%)	2.99 (0.99-9.01)	0.052	1.10 (0.23-5.25)	0.910	0.73 (0.13-4.08)	0.722
COPD								
Non-COPD	102/120 (85.0%)	1,376/1,460 (94.2%)	1		1		1	
Mild-COPD	9/120 (7.5%)	58/1,460 (4.0%)	2.09 (1.01-4.35)	0.047*	1.13 (0.45-2.85)	0.794	1.20 (0.45-3.19)	0.710
Severe-COPD	9/120 (7.5%)	26/1,460 (1.8%)	4.67 (2.13-10.23)	0.001*	2.73 (1.01-7.41)	0.049*	2.90 (1.02-8.26)	0.047*
Men (n = 1,526)								
Asthma								
Non-asthma	74/91 (81.3%)	1,332/1,435 (92.8%)	1		1		1	
Mild-asthma	15/91 (16.5%)	91/1,435 (6.3%)	2.97 (1.64-5.38)	<0.001*	1.22 (0.58-2.56)	0.605	0.97 (0.44-2.15)	0.945

Severe-asthma	2/91 (2.2%)	12/1,435 (0.8%)	3.00 (0.66-13.65)	0.155	0.27 (0.03-2.90)	0.282	0.13 (0.01-1.71)	0.121
COPD								
Non-COPD	76/91 (83.5%)	1,381/1,435 (96.2%)	1		1		1	
Mild-COPD	9/91 (9.9%)	30/1,435 (2.1%)	5.45 (2.50-11.89)	<0.001*	2.30 (0.78-6.81)	0.133	2.67 (0.86-8.27)	0.090*
Severe-COPD	6/91 (6.6%)	24/1,435 (1.7%)	4.54 (1.80-11.44)	0.001*	1.57 (0.47-5.20)	0.461	2.14 (0.61-7.51)	0.237
Women (n = 2,540)								
Asthma								
Non-asthma	34/41 (82.9%)	2,264/2,499 (90.6%)	1		1		1	
Mild-asthma	5/41 (12.2%)	211/2,499 (8.4%)	1.58 (0.61-4.08)	0.346	0.52 (0.17-1.61)	0.258	0.39 (0.11-1.42)	0.155
Severe-asthma	2/41 (4.9%)	24/2,499 (1.0%)	5.55 (1.26-24.42)	0.023*	2.52 (0.40-15.97)	0.326	5.78 (0.82-40.67)	0.078
COPD								
Non-COPD	37/41 (90.2%)	2,408/2,499 (96.4%)	1		1		1	
Mild-COPD	0/41 (0.0%)	62/2,499 (2.5%)	N/A		N/A		N/A	
Severe-COPD	4/41 (9.8%)	29/2,499 (1.2%)	8.98 (3.00-26.82)	<0.001*	5.74 (1.34-24.63)	0.019*	8.26 (1.63-41.81)	0.011*
Low income (n = 1,472)								
Asthma								
Non-asthma	30/35 (85.7%)	1,313/1,437 (91.4%)	1		1		1	
Mild-asthma	4/35 (11.4%)	112/1,437 (7.8%)	1.56 (0.54-4.52)	0.409	0.56 (0.15-2.15)	0.397	0.61 (0.15-2.41)	0.479
Severe-asthma	1/35 (2.9%)	12/1,437 (0.8%)	3.65 (0.46-28.96)	0.221	11.09 (1.06-116.04)	0.045*	11.35 (0.69-187.10)	0.089
COPD								
Non-COPD	30/35 (85.7%)	1,385/1,437 (96.4%)	1		1		1	
Mild-COPD	1/35 (2.9%)	35/1,437 (2.4%)	1.32 (0.18-9.95)	0.788	0.24 (0.02-3.47)	0.297	0.23 (0.02-3.18)	0.272
Severe-COPD	4/35 (11.4%)	17/1,437 (1.2%)	10.87 (3.45-34.24)	<0.001*	6.75 (1.26-36.05)	0.026*	5.15 (0.90-29.67)	0.066
Middle income (n = 1,249)								
Asthma								
Non-asthma	31/40 (77.5%)	1,111/1,209 (91.9%)	1		1		1	
Mild-asthma	7/40 (17.5%)	87/1,209 (7.2%)	2.88 (1.23-6.74)	0.015*	1.15 (0.32-4.19)	0.834	1.22 (0.32-4.65)	0.771

Severe-asthma	2/40 (5.0%)	11/1,209 (0.9%)	6.52 (1.39-30.65)	0.017*	0.09 (0.01-1.46)	0.091	0.11 (0.00-3.49)	0.211
COPD								
Non-COPD	35/40 (87.5%)	1,171/1,209 (96.9%)	1		1		1	
Mild-COPD	3/40 (7.5%)	23/1,209 (1.9%)	4.36 (1.25-15.22)	0.021*	0.36 (0.03-3.88)	0.397	0.89 (0.07-11.12)	0.927
Severe-COPD	2/40 (5.0%)	15/1,209 (1.2%)	4.46 (0.98-20.26)	0.053	0.34 (0.02-5.40)	0.444	0.61 (0.03-12.08)	0.745
High income (n = 1,345)								
Asthma								
Non-asthma	47/57 (82.5%)	1,172/1,288 (91.0%)	1		1		1	
Mild-asthma	9/57 (15.8%)	103/1,288 (8.0%)	2.18 (1.04-4.57)	0.039*	1.19 (0.48-2.96)	0.705	0.97 (0.37-2.54)	0.944
Severe-asthma	1/57 (1.8%)	13/1,288 (1.0%)	1.92 (0.25-14.97)	0.534	1.05 (0.10-11.55)	0.968	0.60 (0.04-9.09)	0.711
COPD								
Non-COPD	48/57 (84.2%)	1,233/1,288 (95.7%)	1		1		1	
Mild-COPD	5/57 (8.8%)	34/1,288 (2.6%)	3.78 (1.42-10.09)	0.008*	1.80 (0.54-6.00)	0.337	1.85 (0.53-6.51)	0.335
Severe-COPD	4/57 (7.0%)	21/1,288 (1.6%)	4.89 (1.62-14.81)	0.005*	3.02 (0.70-13.01)	0.139	3.24 (0.71-14.73)	0.128
Underweight (n = 129)								
Asthma								
Non-asthma	3/3 (100.0%)	116/126 (92.1%)	1		1		1	
Mild-asthma	0/3 (0.0%)	8/126 (6.3%)	N/A		N/A		N/A	
Severe-asthma	0/3 (0.0%)	2/126 (1.6%)	N/A		N/A		N/A	
COPD								
Non-COPD	2/03 (66.7%)	117/126 (92.9%)	1		1		1	
Mild-COPD	0/03 (0.0%)	8/126 (6.3%)	N/A		N/A		N/A	
Severe-COPD	1/03 (33.3%)	1/126 (0.8%)	N/A		N/A		N/A	
Normal weight (n = 1,458)								
Asthma								
Non-asthma	33/37 (89.2%)	1,306/1,421 (91.9%)	1		1		1	
Mild-asthma	3/37 (8.1%)	103/1,421 (7.2%)	1.15 (0.35-3.82)	0.816	0.74 (0.16-3.38)	0.701	1.00 (0.19-5.27)	0.996

Severe-asthma	1/37 (2.7%)	12/1,421 (0.8%)	3.30 (0.42-26.11)	0.258	0.06 (0.00-3.23)	0.169	0.10 (0.00-4.00)	0.220
COPD								
Non-COPD	33/37 (89.2%)	1,364/1,421 (96.0%)	1		1		1	
Mild-COPD	2/37 (5.4%)	32/1,421 (2.3%)	2.58 (0.59-11.23)	0.206	0.20 (0.02-2.07)	0.178	0.27 (0.03-2.61)	0.255
Severe-COPD	2/37 (5.4%)	25/1,421 (1.8%)	3.31 (0.75-14.54)	0.113	0.66 (0.10-4.49)	0.667	1.21 (0.15-9.96)	0.861
Overweight (n = 1,010)								
Asthma								
Non-asthma	27/28 (96.4%)	896/982 (91.2%)	1		1		1	
Mild-asthma	0/28 (0.0%)	77/982 (7.8%)	N/A		N/A		N/A	
Severe-asthma	1/28 (3.6%)	9/982 (0.9%)	3.69 (0.45-30.15)	0.224	2.93 (0.19-45.86)	0.444	N/A	
COPD								
Non-COPD	25/28 (89.3%)	945/982 (96.2%)	1		1		1	
Mild-COPD	1/28 (3.6%)	26/982 (2.6%)	1.45 (0.19-11.14)	0.719	0.61 (0.05-6.93)	0.692	0.99 (0.06-16.10)	0.997
Severe-COPD	2/28 (7.1%)	11/982 (1.1%)	6.87 (1.45-32.64)	0.015*	3.22 (0.36-29.19)	0.298	N/A	
Obese (n = 1,469)								
Asthma								
Non-asthma	45/64 (70.3%)	1,278/1,405 (91.0%)	1		1		1	
Mild-asthma	17/64 (26.6%)	114/1,405 (8.1%)	4.24 (2.35-7.64)	<0.001*	2.51 (1.20-5.28)	0.015*	2.24 (1.03-4.88)	0.042*
Severe-asthma	2/64 (3.1%)	13/1,405 (0.9%)	4.37 (0.96-19.94)	0.057	3.35 (0.37-30.04)	0.280	3.02 (0.30-31.00)	0.352
COPD								
Non-COPD	53/64 (82.8%)	1,363/1,405 (97.0%)	1		1		1	
Mild-COPD	6/64 (9.4%)	26/1,405 (1.9%)	5.94 (2.34-15.03)	<0.001*	2.37 (0.66-8.45)	0.185	1.62 (0.41-6.39)	0.492
Severe-COPD	5/64 (7.8%)	16/1,405 (1.1%)	8.04 (2.84-22.76)	<0.001*	7.07 (1.61-31.04)	0.010*	5.96 (1.31-27.02)	0.021*
Non-smoker (n = 3,181)								
Asthma								
Non-asthma	65/77 (84.4%)	2,841/3,104 (91.5%)	1		1		1	
Mild-asthma	9/77 (11.7%)	238/3,104 (7.7%)	1.65 (0.81-3.36)	0.165	0.74 (0.32-1.70)	0.475	0.70 (0.29-1.69)	0.427

Severe-asthma	3/77 (3.9%)	25/3,104 (0.8%)	5.25 (1.55-17.81)	0.008*	3.67 (0.68-19.96)	0.132	4.61 (0.84-25.15)	0.078
COPD								
Non-COPD	67/77 (87.0%)	2,995/3,104 (96.5%)	1		1		1	
Mild-COPD	3/77 (3.9%)	69/3,104 (2.2%)	1.95 (0.60-6.33)	0.269	0.48 (0.11-2.08)	0.329	0.38 (0.07-1.96)	0.246
Severe-COPD	7/77 (9.1%)	40/3,104 (1.3%)	7.82 (3.38-18.10)	<0.001*	3.32 (1.04-10.56)	0.042*	3.53 (1.06-11.76)	0.040*
Past or current smoker (n = 885)								
Asthma								
Non-asthma	43/55 (78.2%)	755/830 (91.0%)	1		1		1	
Mild-asthma	11/55 (20.0%)	64/830 (7.7%)	3.02 (1.48-6.14)	0.002*	1.14 (0.44-2.96)	0.783	0.83 (0.29-2.34)	0.717
Severe-asthma	1/55 (1.8%)	11/830 (1.3%)	1.60 (0.20-12.65)	0.658	0.10 (0.01-1.67)	0.108	0.04 (0.00-0.96)	0.047*
COPD								
Non-COPD	46/55 (83.6%)	794/830 (95.7%)	1		1		1	
Mild-COPD	6/55 (10.9%)	23/830 (2.8%)	4.50 (1.75-11.60)	0.002*	3.08 (0.76-12.59)	0.117	4.00 (0.90-17.78)	0.068
Severe-COPD	3/55 (5.5%)	13/830 (1.6%)	3.98 (1.10-14.47)	0.036*	0.98 (0.16-5.90)	0.984	2.40 (0.34-17.19)	0.383
Alcohol consumption < 1 time a week (n = 2,968)								
Asthma								
Non-asthma	92/112 (82.1%)	2,584/2,856 (90.5%)	1		1		1	
Mild-asthma	17/112 (15.2%)	242/2,856 (8.5%)	1.97 (1.16-3.37)	0.013*	0.86 (0.44-1.67)	0.659	0.79 (0.39-1.58)	0.496
Severe-asthma	3/112 (2.7%)	30/2,856 (1.1%)	2.81 (0.84-9.37)	0.093	0.61 (0.11-3.41)	0.572	0.45 (0.07-2.90)	0.404
COPD								
Non-COPD	97/112 (86.6%)	2,745/2,856 (96.1%)	1		1		1	
Mild-COPD	7/112 (6.3%)	71/2,856 (2.5%)	2.79 (1.25-6.22)	0.012*	0.87 (0.30-2.51)	0.798	1.06 (0.35-3.19)	0.917
Severe-COPD	8/112 (7.1%)	40/2,856 (1.4%)	5.66 (2.58-12.42)	<0.001*	2.16 (0.76-6.20)	0.151	2.54 (0.85-7.58)	0.096
Alcohol consumption ≥1 time a week (n = 1,098)								
Asthma								
Non-asthma	16/20 (80.0%)	1,012/1,078 (93.9%)	1		1		1	
Mild-asthma	3/20 (15.0%)	60/1,078 (5.6%)	3.16 (0.90-11.15)	0.073	1.60 (0.29-8.94)	0.590	1.22 (0.20-7.60)	0.832

Severe-asthma	1/20 (5.0%)	6/1,078 (0.6%)	10.54 (1.20-92.68)	0.034*	9.35 (0.43-201.98)	0.154	2.71 (0.08-96.04)	0.584
COPD								
Non-COPD	16/20 (80.0%)	1,044/1,078 (96.8%)	1		1		1	
Mild-COPD	2/20 (10.0%)	21/1,078 (1.9%)	6.22 (1.34-28.76)	0.019*	2.63 (0.30-23.21)	0.385	2.21 (0.23-21.62)	0.497
Severe-COPD	2/20 (10.0%)	13/1,078 (1.2%)	10.04 (2.09-48.18)	0.004*	10.24 (0.89-118.09)	0.062	7.35 (0.45-119.08)	0.160
Systolic blood pressure < 140 mmHg and diastolic blood pressure < 90 mmHg (n = 3,530)								
Asthma								
Non-asthma	82/101 (81.2%)	3,136/3,429 (91.5%)	1		1		1	
Mild-asthma	16/101 (15.8%)	264/3,429 (7.7%)	2.32 (1.34-4.02)	0.003*	0.93 (0.46-1.88)	0.848	0.82 (0.39-1.71)	0.593
Severe-asthma	3/101 (3.0%)	29/3,429 (0.8%)	3.96 (1.18-13.25)	0.026*	0.37 (0.06-2.39)	0.294	0.23 (0.03-1.78)	0.159
COPD								
Non-COPD	87/101 (86.1%)	3,308/3,429 (96.5%)	1		1		1	
Mild-COPD	7/101 (6.9%)	74/3,429 (2.2%)	3.60 (1.61-8.04)	0.002*	1.17 (0.39-3.51)	0.780	1.56 (0.50-4.87)	0.443
Severe-COPD	7/101 (6.9%)	47/3,429 (1.4%)	5.66 (2.49-12.89)	<0.001*	1.52 (0.51-4.55)	0.455	1.98 (0.63-6.23)	0.244
Systolic blood pressure ≥ 140 mmHg or diastolic blood pressure ≥90 mmHg (n = 536)								
Asthma								
Non-asthma	26/31 (83.9%)	460/505 (91.1%)	1		1		1	
Mild-asthma	4/31 (12.9%)	38/505 (7.5%)	1.86 (0.62-5.61)	0.269	1.05 (0.26-4.21)	0.946	1.07 (0.22-5.10)	0.937
Severe-asthma	1/31 (3.2%)	07/505 (1.4%)	2.53 (0.30-21.32)	0.394	5.82 (0.35-96.76)	0.220	4.49 (0.23-89.50)	0.325
COPD								
Non-COPD	26/31 (83.9%)	481/505 (95.2%)	1		1		1	
Mild-COPD	2/31 (6.5%)	18/505 (3.6%)	2.06 (0.45-9.34)	0.351	0.95 (0.11-8.13)	0.964	0.77 (0.07-8.19)	0.829
Severe-COPD	3/31 (9.7%)	6/505 (1.2%)	9.25 (2.19-39.08)	0.003*	33.28 (3.52-314.96)	0.002*	28.33 (3.13-256.62)	0.003*
Fasting blood glucose < 100 mg/dL (n = 2,522)								
Asthma								
Non-asthma	45/56 (80.4%)	2,264/2,466 (91.8%)	1		1		1	
Mild-asthma	9/56 (16.1%)	183/2,466 (7.4%)	2.47 (1.19-5.14)	0.015*	0.88 (0.35-2.20)	0.784	0.77 (0.29-2.04)	0.594

Severe-asthma	2/56 (3.6%)	19/2,466 (0.8%)	5.30 (1.20-23.42)	0.028*	2.69 (0.37-19.65)	0.328	1.60 (0.16-16.53)	0.692
COPD								
Non-COPD	48/56 (85.7%)	2376/2,466 (96.4%)	1		1		1	
Mild-COPD	3/56 (5.4%)	55/2,466 (2.2%)	2.70 (0.82-8.93)	0.104	1.00 (0.23-4.38)	0.998	1.06 (0.23-4.78)	0.943
Severe-COPD	5/56 (8.9%)	35/2,466 (1.4%)	7.07 (2.66-18.84)	<0.001*	2.84 (0.70-11.54)	0.146	2.80 (0.57-13.66)	0.203
Fasting blood glucose ≥ 100 mg/dL (n = 1,544)								
Asthma								
Non-asthma	63/76 (82.9%)	1,332/1,468 (90.7%)	1		1		1	
Mild-asthma	11/76 (14.5%)	119/1,468 (8.1%)	1.95 (1.00-3.81)	0.049*	1.02 (0.42-2.45)	0.967	0.90 (0.36-2.21)	0.809
Severe-asthma	2/76 (2.6%)	17/1,468 (1.2%)	2.49 (0.56-11.01)	0.229	0.36 (0.04-3.66)	0.390	0.27 (0.02-3.55)	0.316
COPD								
Non-COPD	65/76 (85.5%)	1,413/1,468 (96.3%)	1		1		1	
Mild-COPD	6/76 (7.9%)	37/1,468 (2.5%)	3.53 (1.44-8.65)	0.006*	1.12 (0.33-3.83)	0.855	1.53 (0.41-5.71)	0.531
Severe-COPD	5/76 (6.6%)	18/1,468 (1.2%)	6.04 (2.17-16.77)	0.001*	3.16 (0.85-11.73)	0.085	3.28 (0.86-12.50)	0.083
Total cholesterol < 200 mg/dL (n = 2,325)								
Asthma								
Non-asthma	72/91 (79.1%)	2,037/2,234 (91.2%)	1		1		1	
Mild-asthma	17/91 (18.7%)	173/2,234 (7.7%)	2.78 (1.60-4.82)	<0.001*	1.71 (0.84-3.50)	0.139	1.47 (0.68-3.15)	0.324
Severe-asthma	2/91 (2.2%)	24/2,234 (1.1%)	2.36 (0.55-10.17)	0.250	0.48 (0.06-3.75)	0.483	0.25 (0.03-2.34)	0.224
COPD								
Non-COPD	75/91 (82.4%)	2,149/2,234 (96.2%)	1		1		1	
Mild-COPD	7/91 (7.7%)	56/2,234 (2.5%)	3.58 (1.58-8.12)	0.002*	1.05 (0.35-3.15)	0.938	1.08 (0.34-3.44)	0.893
Severe-COPD	9/91 (9.9%)	29/2,234 (1.3%)	8.89 (4.07-19.45)	<0.001*	3.98 (1.29-12.29)	0.016*	4.34 (1.33-14.15)	0.015*
Total cholesterol ≥ 200 mg/dL (n = 1,741)								
Asthma								
Non-asthma	36/41 (87.8%)	1,559/1,700 (91.7%)	1		1		1	
Mild-asthma	3/41 (7.3%)	129/1,700 (7.6%)	1.01 (0.31-3.32)	0.991	0.25 (0.06-1.04)	0.056	0.25 (0.06-1.11)	0.069

Severe-asthma	2/41 (4.9%)	12/1,700 (0.7%)	7.22 (1.56-33.43)	0.012*	5.65 (0.60-53.49)	0.131	5.75 (0.54-61.00)	0.147
COPD								
Non-COPD	38/41 (92.7%)	1,640/1,700 (96.5%)	1		1		1	
Mild-COPD	2/41 (4.9%)	36/1,700 (2.1%)	2.40 (0.56-10.32)	0.240	0.66 (0.10-4.47)	0.666	0.64 (0.07-5.93)	0.697
Severe-COPD	1/41 (2.4%)	24/1,700 (1.4%)	1.80 (0.24-13.64)	0.570	0.91 (0.09-8.94)	0.938	1.04 (0.08-12.86)	0.975
CCI scores = 0 (n = 3,089)								
Asthma								
Non-asthma	36/41 (87.8%)	2,804/3,048 (92.0%)	1		1		1	
Mild-asthma	5/41 (12.2%)	214/3,048 (7.0%)	1.82 (0.71-4.69)	0.215	0.75 (0.24-2.35)	0.621	0.61 (0.17-2.15)	0.442
Severe-asthma	0/41 (0.0%)	30/3,048 (1.0%)	N/A		N/A		N/A	
COPD								
Non-COPD	36/41 (87.8%)	2,954/3,048 (96.9%)	1		1		1	
Mild-COPD	1/41 (2.4%)	57/3,048 (1.9%)	1.44 (0.19-10.68)	0.722	0.69 (0.06-8.17)	0.765	0.92 (0.08-10.54)	0.945
Severe-COPD	4/41 (9.8%)	37/3,048 (1.2%)	8.88 (3.01-26.20)	<0.001*	2.20 (0.41-11.87)	0.360	4.53 (0.74-27.70)	0.102
CCI scores = 1 (n = 588)								
Asthma								
Non-asthma	25/34 (73.5%)	499/554 (90.1%)	1		1		1	
Mild-asthma	7/34 (20.6%)	50/554 (9.0%)	2.79 (1.15-6.79)	0.023*	1.33 (0.49-3.66)	0.016*	1.45 (0.49-4.33)	0.028*
Severe-asthma	2/34 (5.9%)	5/554 (0.9%)	7.99 (1.48-43.20)	0.016*	8.00 (0.95-67.62)	0.576	16.26 (1.62-163.44)	0.506
COPD								
Non-COPD	32/34 (94.1%)	523/554 (94.4%)	1		1		1	
Mild-COPD	0/34 (0.0%)	22/554 (4.0%)	N/A		N/A		N/A	
Severe-COPD	2/34 (5.9%)	9/554 (1.6%)	3.63 (0.75-17.51)	0.108	3.31 (0.33-39.91)	0.971	4.11 (0.39-43.38)	0.965
CCI scores ≥ 2 (n = 389)								
Asthma								
Non-asthma	47/57 (82.5%)	293/332 (88.3%)	1		1		1	
Mild-asthma	8/57 (14.0%)	38/332 (11.4%)	1.31 (0.58-2.99)	0.517	0.48 (0.15-1.58)	0.095	0.42 (0.12-1.44)	0.055

Severe-asthma	2/57 (3.5%)	1/332 (0.3%)	12.46 (1.11-140.11)	0.041*	1.71 (0.04-82.12)	0.098	1.02 (0.02-58.25)	0.065
COPD								
Non-COPD	45/57 (78.9%)	312/332 (94.0%)	1		1		1	
Mild-COPD	8/57 (14.0%)	13/332 (3.9%)	4.27 (1.68-10.86)	0.002*	1.50 (0.39-5.79)	0.037*	1.84 (0.41-8.17)	0.170
Severe-COPD	4/57 (7.0%)	7/332 (2.1%)	3.96 (1.12-14.07)	0.038*	3.02 (0.47-19.44)	0.106	3.36 (0.48-23.51)	0.994
NSAID used < 6 times (n = 1,972)								
Asthma								
Non-asthma	46/48 (95.8%)	1,825/1,924 (94.9%)	1		1		1	
Mild-asthma	2/48 (4.2%)	94/1,924 (4.9%)	0.84 (0.20-3.53)	0.816	0.15 (0.02-1.10)	0.062	0.06 (0.01-0.54)	0.013*
Severe-asthma	0/48 (0.0%)	05/1,924 (0.3%)	N/A		N/A		N/A	
COPD								
Non-COPD	42/48 (87.5%)	1,870/1,924 (97.2%)	1		1		1	
Mild-COPD	2/48 (4.2%)	33/1,924 (1.7%)	2.70 (0.63-11.62)	0.183	0.67 (0.12-3.72)	0.648	1.16 (0.17-8.00)	0.879
Severe-COPD	4/48 (8.3%)	21/1,924 (1.1%)	8.48 (2.79-25.79)	<0.001*	6.88 (1.37-34.63)	0.019*	16.84 (3.23-87.87)	0.001*
NSAID used ≥ 6 times (n = 2,094)								
Asthma								
Non-asthma	62/84 (73.8%)	1,771/2,010 (88.1%)	1		1		1	
Mild-asthma	18/84 (21.4%)	208/2,010 (10.3%)	2.47 (1.44-4.26)	0.001*	1.35 (0.70-2.63)	0.375	1.35 (0.68-2.68)	0.396
Severe-asthma	4/84 (4.8%)	31/2,010 (1.5%)	3.69 (1.26-10.76)	0.017*	1.46 (0.32-6.68)	0.628	1.37 (0.27-6.94)	0.703
COPD								
Non-COPD	71/84 (84.5%)	1,919/2,010 (95.5%)	1		1		1	
Mild-COPD	7/84 (8.3%)	59/2,010 (2.9%)	3.21 (1.41-7.27)	0.005*	1.08 (0.36-3.26)	0.890	0.93 (0.29-3.02)	0.904
Severe-COPD	6/84 (7.1%)	32/2,010 (1.6%)	5.07 (2.05-12.51)	<0.001*	1.53 (0.42-5.66)	0.522	1.37 (0.36-5.27)	0.646
Steroid used < 3 times (n = 2,206)								
Asthma								
Non-asthma	36/36 (100.0%)	2,065/2,170 (95.2%)	1		1		1	
Mild-asthma	0/36 (0.0%)	98/2,170 (4.5%)	N/A		N/A		N/A	

Severe-asthma	0/36 (0.0%)	7/2,170 (0.3%)	N/A		N/A		N/A	
COPD								
Non-COPD	34/36 (94.4%)	2,130/2,170 (98.2%)	1		1		1	
Mild-COPD	1/36 (2.8%)	30/2,170 (1.4%)	2.09 (0.28-15.76)	0.475	1.78 (0.14-22.51)	0.657	2.05 (0.14-31.14)	0.604
Severe-COPD	1/36 (2.8%)	10/2,170 (0.5%)	6.27 (0.78-50.31)	0.084	0.55 (0.03-9.29)	0.678	10.53 (0.37-300.82)	0.169
Steroid used ≥ 3 times (n = 1,860)								
Asthma								
Non-asthma	72/96 (75.0%)	1,531/1,764 (86.8%)	1		1		1	
Mild-asthma	20/96 (20.8%)	204/1,764 (11.6%)	2.09 (1.24-3.49)	0.005*	1.23 (0.64-2.37)	0.543	1.20 (0.60-2.38)	0.606
Severe-asthma	4/96 (4.2%)	29/1,764 (1.6%)	2.93 (1.00-8.57)	0.049*	0.94 (0.21-4.15)	0.938	0.71 (0.14-3.64)	0.681
COPD								
Non-COPD	79/96 (82.3%)	1659/1,764 (94.0%)	1		1		1	
Mild-COPD	8/96 (8.3%)	62/1,764 (3.5%)	2.71 (1.25-5.85)	0.011*	0.76 (0.27-2.14)	0.602	0.77 (0.26-2.30)	0.635
Severe-COPD	9/96 (9.4%)	43/1,764 (2.4%)	4.40 (2.07-9.33)	<0.001*	3.91 (1.36-11.24)	0.011*	4.03 (1.36-11.98)	0.012*
Non-hypertension (n = 2,878)								
Asthma								
Non-asthma	34/40 (85.0%)	2,628/2,838 (92.6%)	1		1		1	
Mild-asthma	6/40 (15.0%)	188/2,838 (6.6%)	2.47 (1.02-5.95)	0.044	0.70 (0.22-2.23)	0.541	0.60 (0.18-2.04)	0.415
Severe-asthma	0/40 (0.0%)	22/2,838 (0.8%)	N/A		N/A		N/A	
COPD								
Non-COPD	36/40 (90.0%)	2,748/2,838 (96.8%)	1		1		1	
Mild-COPD	2/40 (5.0%)	53/2,838 (1.9%)	2.88 (0.68-12.28)	0.153	1.25 (0.19-8.14)	0.814	1.57 (0.22-11.03)	0.652
Severe-COPD	2/40 (5.0%)	37/2,838 (1.3%)	4.13 (0.96-17.77)	0.057	0.90 (0.13-6.27)	0.916	2.20 (0.29-16.81)	0.449
Hypertension (n = 1,188)								
Asthma								
Non-asthma	74/92 (80.4%)	968/1,096 (88.3%)	1		1		1	
Mild-asthma	14/92 (15.2%)	114/1,096 (10.4%)	1.61 (0.88-2.94)	0.124	1.01 (0.49-2.08)	0.972	0.93 (0.43-1.99)	0.846

Severe- asthma	4/92 (4.3%)	14/1,096 (1.3%)	3.74 (1.20-11.64)	0.023*	2.09 (0.45-9.65)	0.346	1.79 (0.33-9.65)	0.498
COPD								
Non-COPD	77/92 (83.7%)	1,041/1,096 (95.0%)	1		1		1	
Mild-COPD	7/92 (7.6%)	39/1,096 (3.6%)	2.43 (1.05-5.61)	0.038*	0.95 (0.34-2.70)	0.930	0.86 (0.27-2.73)	0.803
Severe- COPD	8/92 (8.7%)	16/1,096 (1.5%)	6.76 (2.81-16.29)	<0.001*	4.19 (1.39-12.58)	0.011*	4.04 (1.29-12.59)	0.016*

* Unconditional logistic regression model, Significance at $P < 0.05$

† Model 1 was adjusted for age, sex, income, obesity, smoking, alcohol consumption, systolic blood pressure, diastolic blood pressure, fasting blood glucose, total cholesterol, CCI scores, number of NSAID used, number of steroid used and hypertension.

‡ Model 2 was adjusted for model 1 plus asthma and COPD.