

Supplementary Table 1: Comparison between asthmatic and non-asthmatic demographic, functional and inflammatory characteristics in the validation cohort

	Validation cohort (N=137)	
	Non-Asthmatic (n=57)	Asthmatic (n=80)
Age (years)	53 ± 14	50 ± 16
Gender (male)	39% (22)	35% (28)
BMI (kg/m ²)	26 ± 4.5	26 ± 5.2
Non-Smoker	58% (33)	46% (37)
Ex-Smoker	31% (18)	30% (24)
Smoker	11% (6)	24% (19)
Atopy	39% (22)	48% (38)
FEV1 % pred.	101 ± 2.31	89.3 ± 1.62
FEV1 < 80 % pred.	11% (6)	20% (16)
FEV1/FVC %	81.3 ± 0.92	76.9 ± 0.09
FEV1/FVC < 75 %	17% (10)	34% (27)
FeNO (ppb)	19 (13.2-27.8)	19 (12-32)
FeNO (ppb) > 25	31% (18)	33% (26)
Sputum eosinophils % &	1.1 (0.4-2.1)	0.8 (0.2-4.4)
Blood eosinophils %	1.9 (1.02-3.2)	2.2 (1.3-2.9)
Blood eosinophils (1/μL)	160 (60-240)	160 (90-250)
Blood eosinophils (1/μL) > 300	12% (7)	18% (14)
Total serum IgE (KU/L)	75 (26.8-118)	89 (29.6-205)
Wheezing intensity score	0.82 ± 0.14	1.45 ± 0.12
Dyspnea intensity score	1.54 ± 0.15	2.24 ± 0.13
Chest tightness intensity score	1.4 ± 0.15	1.79 ± 0.12
Airway secretion intensity score	1.25 ± 0.14	1.42 ± 0.14
Cough intensity score	1.60 ± 0.15	2.04 ± 0.11

Results are expressed as percentage (n), mean (±SD) or median (IQR).

& n=57 in asthmatics and n=38 in non-asthmatics

Abbreviations: FEV1, forced expiratory volume in 1 second; FVC, forced vital capacity; FeNO, fraction of exhaled nitric oxide.

Table S2. Multivariate logistic regression on Training data (n=166)
OR (95% CI)

Model 1	Cough	0.747(0.49-1.13)
	Secretion	1.354(0.92-2.02)
	Oppression	0.76(0.52-1.10)
	Dyspnea	1.19(0.80-1.78)
	Wheezing	1.78**(1.23-2.63)
	FeNO	1.02(0.99-1.04)
Model 2	Cough	0.71(0.45-1.10)
	Secretion	1.36(0.91-2.06)
	Oppression	0.82(0.55-1.21)
	Dyspnea	0.99(0.64-1.52)
	Wheezing	1.77**(1.21-2.66)
	FEV1(%)	0.95***(0.93-0.98)
Model 3	FeNO	1.02*(1.00-1.04)
	Cough	0.78(0.50-1.19)
	Secretion	1.34(0.89-2.04)
	Oppression	0.82(0.55-1.19)
	Dyspnea	1.15(0.76-1.73)
	Wheezing	1.62*(1.11-2.43)
Model 4	FEV1/FVC (%)	0.91**(0.86-0.96)
	FeNO	1.01(0.99-1.04)
	Cough	0.74(0.47-1.15)
	Secretion	1.34(0.89-2.06)
	Oppression	0.85(0.57-1.24)
	Dyspnea	1.02(0.66-1.56)
Model 4	Wheezing	1.68*(1.14-2.53)
	FEV1(%)	0.96*(0.93-0.99)
	FEV1/FVC (%)	0.95(0.89-1.01)
	FeNO	1.02(0.99-1.04)

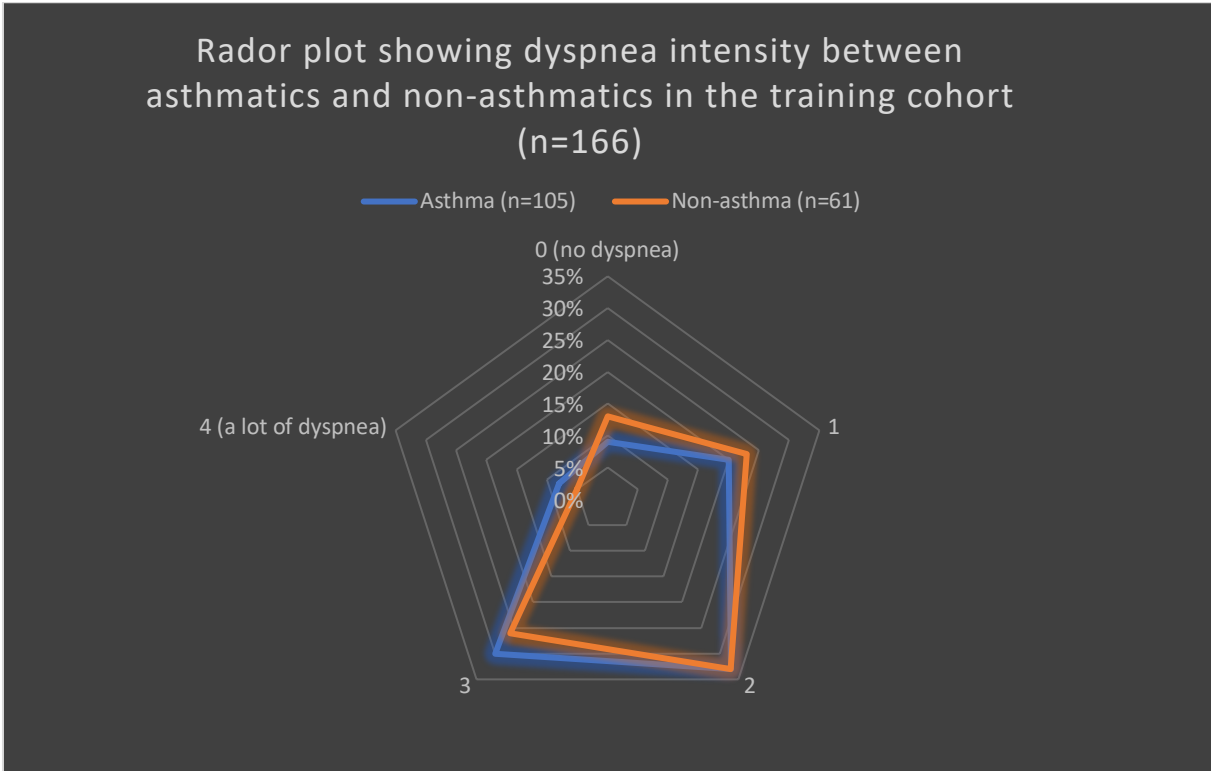
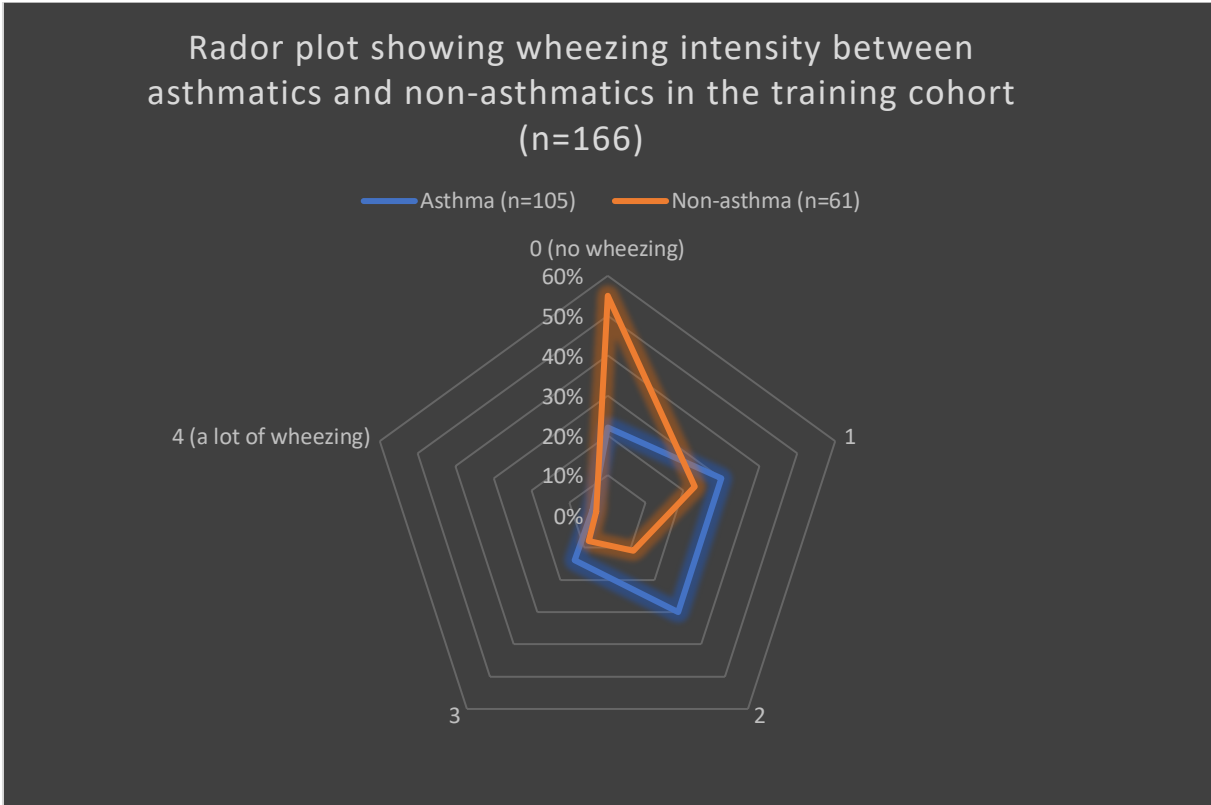
** significant at 0.01 * significant at 0.05

Abbreviations: FEV1, forced expiratory volume in 1 second; FVC, forced vital capacity; FeNO, fraction of exhaled nitric oxide.

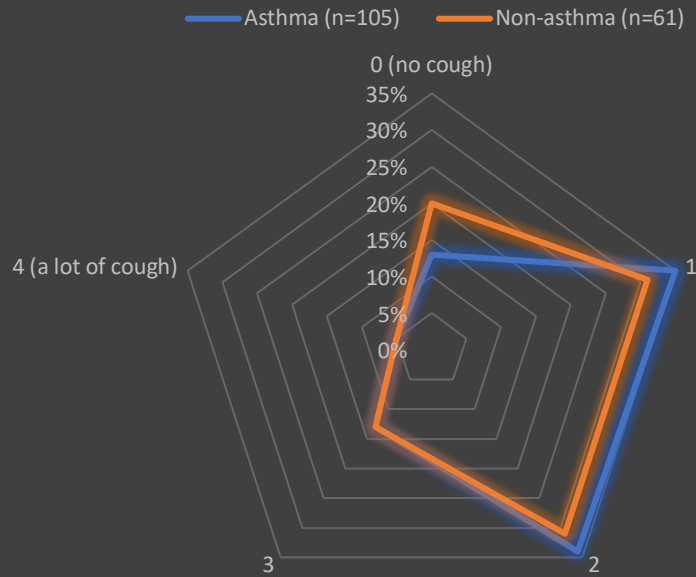
Table S3 Diagnostic performance of the models derived from the training cohort and applied to the validation cohort

	AUC (95% CI)	Threshold	Sensitivity (95% CI)	Specificity (95% CI)	NPV	PPV
Model 1	0.60(0.49-0.70)	0.48	0.72(0.50-0.85)	0.48(0.28-0.63)	0.56	0.65
Model 2	0.66(0.57-0.76)	0.51	0.69(0.40-0.82)	0.60(0.36-0.73)	0.59	0.69
Model 3	0.69(0.76-0.59)0.78	0.76	0.44(0.11-0.54)	0.92(0.63-0.98)	0.56	0.88
Model 4	0.69(0.60-0.79)	0.77	0.41(0.22-0.54)	0.92(0.71-0.98)	0.54	0.87

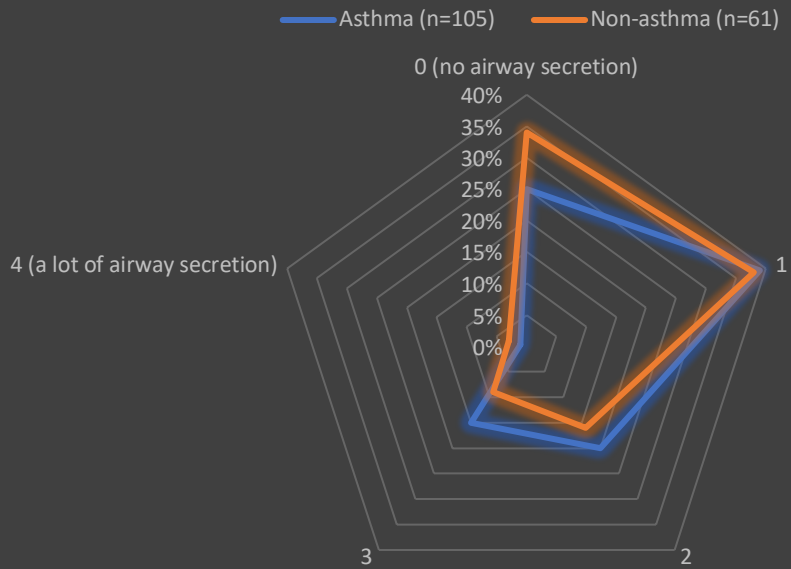
Supplementary Figure 1: Radar plots showing asthma symptom intensity scales between asthmatics and non-asthmatics in the training cohort (n=166)



Radar plot showing cough intensity between asthmatics and non-asthmatics in the training cohort (n=166)



Radar plot showing airway secretion intensity between asthmatics and non-asthmatics in the training cohort (n=166)



Radar plot showing chest tightness intensity between asthmatics and non-asthmatics in the training cohort (n=166)

