



**Supplementary Figure S1:** The prevalence of (A) anxiety and (B) depression among asthmatic compared to non-asthmatic individuals.

**Supplementary Table S1:** Mean scores ( $\pm$  SD) of anxiety, depression, and cognition using study questionnaires and ANOVA p-values without controlling for covariates.

Variables	Asthmatic (n=84)	Non-asthmatic (n=159)	Total (n=243)	P-value <sup>b</sup>
Anxiety	6.2 $\pm$ 4.7	4.7 $\pm$ 3.5	5.2 $\pm$ 4.0	0.004
Depression	5.2 $\pm$ 3.9	4.1 $\pm$ 3.3	4.5 $\pm$ 3.6	0.01
MoCA Test <sup>a</sup>	23.7 $\pm$ 5.0	25.5 $\pm$ 3.7	24.9 $\pm$ 4.2	0.004

**Supplementary Table S2:** Multinomial logistic regression on the association between asthma and categories of anxiety and depression, while controlling for covariates.

Variables	Anxiety				Depression			
	Borderline		Case		Borderline		Case	
	OR (CI 95%)	P- value	OR (CI 95%)	P- value	OR (CI 95%)	P- value	OR (CI 95%)	P- value
Age	0.99 (0.95-1.03)	0.7	0.97 (0.93-1.02)	0.3	0.99 (0.95-1.03)	0.6	0.98 (0.92-1.05)	0.6
Gender (Female) <sup>a</sup>	1.39 (0.52-3.73)	0.5	3.57 (0.79-16.1)	0.1	-	-	-	-
BMI	1.02 (0.95-1.09)	0.6	1.05 (0.99-1.13)	0.09	1.01 (0.95-1.07)	0.7	<b>1.09</b> <b>(1.00-1.20)</b>	<b>0.05</b>
Asthma	1.46 (0.65-3.27)	0.3	2.02 (0.87-4.68)	0.1	<b>2.10</b> <b>(1.00-4.43)</b>	<b>0.05</b>	1.72 (0.50-5.93)	0.4

<sup>a</sup> Gender was removed from the model for depression because some categories had only one gender

**Supplementary Table S3:** Binomial logistic regression on the association between asthma and anxiety and depression

Variables	Anxiety <sup>a</sup>		Depression <sup>a</sup>	
	OR (CI 95%)	P-value	OR (CI 95%)	P-value
<b>Age</b>	0.98 (0.95-1.02)	0.3	0.99 (0.95- 1.03)	0.5
<b>Gender (Female)</b>	1.39 (0.83-4.51)	0.1	1.12 (0.49-2.61)	0.8
<b>BMI</b>	1.03 (0.98-1.09)	0.2	1.03 (0.98-1.09)	0.2
<b>Asthma</b>	1.70 (0.90- 3.19)	0.1	<b>1.99</b> <b>(1.02- 3.90)</b>	<b>0.05</b>

<sup>a</sup> Borderline and cases were combined into one category.

**Supplementary Table S4:** Multinomial logistic regression on the association between asthma severity and anxiety and depression and MCI while controlling for covariates.

Variables	Anxiety/Depression				Cognition	
	Anxiety or Depression		Anxiety & Depression		Mild cognitive impairment	
	OR (CI 95%)	P-value	OR (CI 95%)	P-value	OR (CI 95%)	P-value
<b>Gender (Female)</b>	0.46 (0.10-2.04)	0.3	1.35 (0.21- 8.65)	0.7	0.40 (0.09- 1.74)	0.2
<b>BMI</b>	0.98 (0.88-1.07)	0.6	1.03 (0.94-1.13)	0.4	1.03 (0.95-1.12)	0.4
<b>Age</b>	0.94 (0.88-1.01)	0.1	0.97 (0.91-1.03)	0.4	<b>1.07</b> <b>(1.01-1.13)</b>	<b>0.02</b>
<b>Asthma severity (Mild)</b>						
<b>Sever</b>	2.41 (0.38-15.8)	0.3	<b>10.8</b> <b>(1.81-64.6)</b>	<b>0.009</b>	2.24 (0.42-11.8)	0.3
<b>Moderate</b>	0.89 (0.23-3.40)	0.9	1.63 (0.37-7.21)	0.5	1.02 (0.35-3.00)	0.9