



## Systemic levels of IgE as a determinant of self-rated health in patients with asthma

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### Background

Allergic asthma is a chronic inflammatory disorder with both local and systemic inflammation and is associated with elevated levels of IgE. Poor self-rated health has repeatedly been associated to inflammatory markers, but the nature of this relationship in states of chronic inflammatory disease is not known. Likewise, such findings largely rely on cross-sectional investigations. Here, we investigated the associations between self-rated health and levels of IgE over time in patients with asthma.

### Methods

Self-rated health and levels of IgE were assessed in 181 (87 women) non-smoking patients with allergic asthma aged 18-64 years in a one-year longitudinal study with two repeated measurements. All patients had a confirmed IgE sensitization to at least one airborne perennial allergen. Analyses of associations between repeated measurements were performed using mixed regression models and Spearman's correlations.

### Results

Poor self-rated health was associated with higher levels of seasonal IgE ( $p < 0.05$ ) and food IgE ( $p < 0.05$ ) in both men and women. Furthermore, a worsening of self-rated health between measurements was associated with an increase in perennial IgE levels over time (Spearman's rho: 0.16,  $p < 0.05$ ).

### Conclusion

In conclusion, systemic levels of IgE in response to seasonal-, food and perennial allergens is a possible determinant of self-rated health in individuals with asthma.

**Table 1.**

**Demographic Factors, Self-Rated Health, and IgE in men and women at baseline**

	Women				Men			
	n	range	mean	SD	n	range	mean	SD
<b>Age</b>	87	19-63	41.4	11.9	94	18-64	40.6	12.8
<b>BMI</b>	83	17.6-45.2	26.7	6.0	93	18.7-39.4	26.5	3.8
<b>Education</b>	82	1-3	2.4	0.7	89	1-3	2.4	0.7
<b>SRH</b>	86	1-5	2.1	0.8	93	1-4	2.0	0.8
<b>perennial IgE (kU/l)</b>	76	0.1-478.1	41.4	76.2	82	0.1-182.2	24.4	31.9
<b>seasonal IgE (kU/l)</b>	76	0.0-107.9	13.5	20.9	82	0.0-180.3	18.1	34.1
<b>food IgE (kU/l)</b>	76	0.0-173.2	11.3	26.9	82	0.1-105.0	10.5	21.0
<b>total IgE (kU/l)</b>	76	0.2-504.2	66.1	99.9	82	0.2-411.7	52.9	71.0

**Table 2.**

**Associations between IgE and Self-Rated Health**

	number of observations	coef IgE	CI	coef interaction IgE* women	CI
<b>perennial IgE</b>	309	-0.08	-0.26;0.11	0.10	-0.10;0.30
<b>season IgE</b>	309	0.07*	0.00;0.15	-0.07	-0.23;0.10
<b>food IgE</b>	309	0.18*	0.01;0.35	-0.18	-0.36;0.01
<b>total IgE</b>	309	0.07	-0.06;0.21	-0.05	

\* $p < 0.05$

