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**Title:** Determinants of exhaled NO in a population of subjects with different respiratory symptoms – Results from the Swedish GA<sup>2</sup>LEN survey

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**Body:** Fraction of NO in exhaled air (FeNO) is a common method to assess airways inflammation. Determinants of FeNO have nevertheless mostly been studied in the healthy general population. Therefore, we studied determinants of FeNO in a large population of subjects with respiratory symptoms that may reflect the type of patients seen in clinical practice. FeNO was measured in 1018 subjects with asthma, sinusitis, asthma and sinusitis, or symptoms suggestive of asthma but without fulfilling the asthma diagnosis criteria, aged 17-76 years (median 45 yrs). Female gender, current smoking and having both parents smoking during childhood were related to lower FeNO while increased height, age, atopy and asthma diagnosis were related to higher FeNO, both before and after adjustments for variables given in Table.

	FeNO relative difference	Adjusted* FeNO relative difference
Female gender	- 24% (-30,-19)	-11% (-20, -1)
Height (per 10cm)	15% (10, 19)	7% (2, 13)
Age (per 10yrs)	4% (1, 7)	6% (4, 9)
Atopy	22% (14, 32)	16% (8, 26)
Smoking	-42%(-47, -35)	-41% (-47, -34)
Asthma	16% (7, 25)	19% (1, 40)
Both parents smoking during childhood	-18% (-25, -9)	-10% (-18, -1)

\* for variables in the Table plus study center, rhinitis, sinusitis, unspecific symptoms, inhaled corticosteroid use, passive smoking and lung function.

In conclusion, constitutional factors, such as male gender, increased height and age, are related to increased FeNO in subjects with respiratory symptoms. They should be accounted for in clinical practice as their effect size is comparable to the effect of diagnosed asthma. Parental smoking during childhood was related to decreased FeNO and this warrants further studies.