

**COUGH REFLEX SENSITIVITY IN HEALTHY CHILDREN AND ADOLESCENTS:
DEPENDENCE ON GENDER AND PUBERTAL STAGE**

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Studies of healthy adult volunteers and patients with chronic cough have shown that women are more sensitive to inhaled tussigenic stimuli, including capsaicin. The explanation for this phenomenon remains unknown, although the influence of sex hormones may play the role. **AIM:** Our purpose was to examine the effect of pubertal status on cough reflex sensitivity parameters in a population of male and female children and adolescents. **DESIGN:** The study comprised of cough reflex sensitivity (CRS) testing, spirometry, and a children-completed pubertal status questionnaire. The inclusion criteria to enter the study were no current symptoms of respiratory disease, no respiratory infection in last 2 weeks, no allergic disease, and no other diseases, which could modulate CRS. For assessing CRS, each subject inhaled up to 12 capsaicin aerosol concentrations (0.61-1250 $\mu\text{mol/l}$) during 400 ms at 1 min intervals. CRS was defined as the lowest capsaicin concentration that evoked minimum of 2 coughs. **RESULTS:** The results of 226 children (median age 12 yr, IQR 12-16 yr, 100 girls/126 boys) that completed pubertal status questionnaire were divided into 3 subgroups according to pubertal status (prepubertal, early pubertal, late pubertal). CRS [median(interquartile range)] was similar in prepubertal girls (n=20) and boys (n=14) [39.1 (4.9-117.2) $\mu\text{mol/l}$ vs. 29.3(9.8-78.1) $\mu\text{mol/l}$; p=0.74], group of early pubertal girls had lower CRS compared to boys, but the difference was not significant [156.3(68.4-312.5) $\mu\text{mol/l}$ vs. 39.1(19.5-156.3) $\mu\text{mol/l}$; p=0.09]. However, CRS in late pubertal girls (p=63) was significantly higher compared to boys (n=31) [39.1(19.5-156.3) $\mu\text{mol/l}$ vs. 156.3(39.1-312.5) $\mu\text{mol/l}$; p=0.05]. **CONCLUSIONS:** Our results point out that start of menarche in girls (late puberty stage) is associated with significantly higher CRS compared to boys. Female sex hormones, therefore, could play the role in increased cough reflex sensitivity among females.

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