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## EXERCISE INDUCED CHANGES OF GASTROESOPHAGEAL ACIDITY IN CHILDREN

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**Background:** Gastroesophageal reflux (GER) is often related to recurrent respiratory symptoms. Whether GER accounty for exercise-induced bronchoconstriction remains underdebate.

**Aims:** To compare the gastroesophageal acidity (GE pH) with lung function during exercise in children with recurrent respiratory symptoms.

**Methods:** In 12 asthmatic and 9 non-asthmatic (aged 5.9 -15.8 yr, M/F 14/7) we assessed spirometry, then started a 24-h GE pH monitoring (GE $pH_{24}$). In a second session, they did a 6-minutes treadmil-exercise testing followed one hour later by gastroesophageal catheter removal. Prick test and blood samples for IgE and leukocytes were also measured, the sum of allergen-skin wheals was termed "prick index".

**Results:** Median (IQR) GE $pH_{24}$ values were found unrelated to post-exercise $FEV_1$ decrease. GE $pH_{24}$ correlated with prick index ($r=0.58$), percent blood eosinophils ($r=0.58$) only in asthmatic children ($p< 0.05$); they also yielded higher GE $pH_{24}$ than non-asthmatic children (7.25, IQR 0.18 vs 7.0, IQR 0.50; $p< 0.05$). GE pH recorded 6 minutes before exercise decreased during exercise testing from 7.85 (IQR 0.73) to 7.30 (IQR 1.05) in asthmatic ($p=0.059$) while increased from 7.20 (IQR 0.90) to 7.90 (IQR 0.85) in non-asthmatic children ($p=0.043$). One-hour post-exercise GE pH increased only in asthmatic children ( 7.80, IQR 0.68; $p< 0.05$).

**Conclusion:** Exercise-induced changes of GE pH in asmathic children are presumably related to vagal-induced mechanisms. These mechanisms seems to be enhanced by atopic inflammation.