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**Title:** Chest expansion in school-age children with mild bronchial asthma

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**Body:** Introduction The presence of persistent bronchial asthma (BA) is usually connected with limited chest expansion (CE) [1], but there are no reference values to express if there is a serious limitation. Aims To evaluate an effect of a 4-week pulmonary rehabilitation programme (PRP) on CE in school-age children with mild BA. Methods One-hundred-and-fourteen children with BA (aged 12.0±2.6 years) were examined and recruited for the intervention group (I), which attended a 4-week PRP including respiratory physiotherapy, inhalation, physical activity training in group sessions. Two-hundred-and-eight healthy children (aged 11.9±2.0 years) were examined and assigned to the control group (C). Both groups underwent a CE assessment, which was performed with a tape cloth measure at the level of 4<sup>th</sup> intercostal space (IC) and at the level of xiphoid process (XP). Results CE of the I group was significantly lower at baseline compared to the C group. After the 4-week PRP a significant improvement was achieved that resulted in a presence of not significant difference between the I and C group in almost all subgroups.

CE of BA and healthy children

	CE (cm)	I baseline	C	p (t-test)	I follow-up	C	p (t-test)
girls	IC	5.4±1.5	6.9±1.7	0.000	6.9±2.0	6.9±1.7	NS
girls	XP	4.6±2.0	6.4±1.6	0.000	5.8±1.8	6.4±1.6	0.03
boys	IC	6.0±2.4	7.4±1.7	0.000	7.8±2.3	7.4±1.7	NS
boys	XP	5.7±2.3	6.5±1.8	0.02	7.1±2.2	6.5±1.8	NS

Conclusion The PRP led to a significant improvement of chest expansion in BA children, who had CE previously decreased. Reference: 1. Lopes, E. A. et al. Assessment of muscle shortening and static posture in children with persistent asthma. Eur J Pediatr 2007; 166: 715-721. Study was supported by grants of the Palacky University – FTK\_2011\_010; FTK\_2012:023.

