

## THE IMPACT OF REFERENCE VALUES ON THE INTERPRETATION OF LUNG FUNCTION IN CHILDREN - COMPARISON OF GLI 2012 AND POLISH 1998 REFERENCE VALUES.

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**Background:** Interpretation of spirometry strongly depends on applied predicted values. The use of inadequate values may lead to over- or underestimation of the abnormal results. New GLI2012 reference values have recently been published but their impact on lung function interpretation in children has not been evaluated. Thus, the aim of the study was to compare the interpretation of spirometry when GLI 2012 vs Polish (1998 Rabka) reference values were applied.

**Methods:** Spirometry results of 315 Caucasian children aged 4-18 years (129 girls, mean age  $12.29 \pm 3.28$ ) obtained at Lung Function Laboratory, Department of Pediatric Pneumology and Allergy were analyzed with the use of GLI and Rabka reference values. Airway obstruction was defined as  $FEV1/FVC < LLN$  (lower limit of normal), while restrictive ventilatory pattern as  $FVC < LLN$  and  $FEV1/FVC > LLN$ . LLN was 5th percentile (-1.64 standard deviation).

**Results:** FEV1 and FVC expressed as GLI and Rabka z-scores differed significantly ( $p < 0.05$ ). Mean of FEV1 was  $-0.68 \pm 1.25$  vs  $-0.13 \pm 1.7$ , while mean FVC was  $-0.34 \pm 1.08$  vs  $0.3 \pm 1.15$  when GLI and Rabka reference values were used, respectively. There was no difference for FEV1/FVC z-scores. In 20.3% and 7.6% children obstructive and restrictive ventilator pattern, respectively was diagnosed using GLI 2012 values as compared to 17.5% and 3.8% when using Rabka 1998 reference values.

**Conclusion:** The use of GLI 2012 reference values in population of Polish children increases the number of detected lung function abnormalities as compared to widely used Rabka 1998 reference values.