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Title: Interpreting spirometry data from South Asian children using the GLI-2012 equations: The SLIC study

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Body: The Global Lung Function Initiative (GLI), recently published the first all-age, multi-ethnic reference equations for spirometry.¹ These equations represent huge progress, but specific reference equations for the South-Asian population have yet to be developed. This study aims to derive GLI-2012 coefficients for S.Asian (Indian sub-continent) children in London, UK. Methods: Anthropometry and spirometry were undertaken in healthy S.Asian children. Coefficients for the “new” ethnic group (S.Asians) were calculated using GLI software (www.lungfunction.org). Results: Spirometry data from 378 (47% boys) healthy S.Asian children aged 5-11y were available. Compared to White children, FEV₁ was lower by a mean (95%CI) of 10% (9%;12%) in S.Asians. A proportional reduction in FVC was observed such that FEV₁/FVC was constant between groups. When expressed according to GLI-2012 coefficients for S.Asians, the mean (SD) for FVC, FEV₁ and FEV₁/FVC z-scores for the S.Asian children approximated 0 (1) suggesting the amended GLI equations are appropriate for use in this population (figure).

Conclusion: GLI-coefficients can be derived for ‘new’ populations, aiding interpretation of spirometry in a multi-ethnic society. Confirmation is needed in larger UK or South Asian based populations spanning the entire age range.