



## 47. New aspects of lung function testing in children

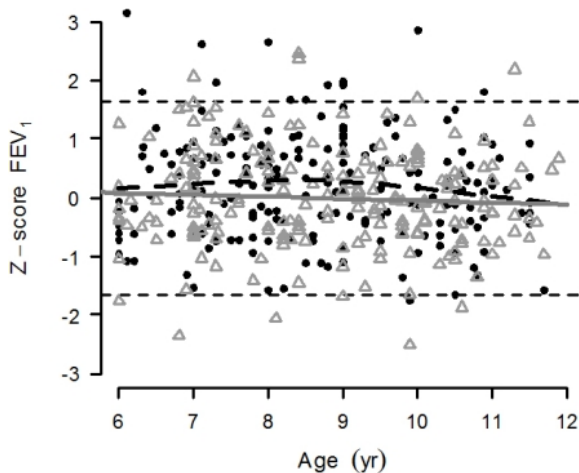
192

**Lung function and nutritional status in urban Malagasy children**

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**BACKGROUND:**Few data exist about lung function in African children. **AIMS:**Define spirometric reference values for urban Malagasy children and evaluate lung function in relation to nutritional status. **METHOD:**FEV<sub>1</sub>, FVC and FEV<sub>1</sub>/FVC were measured with a portable spirometer (Pony FX©,Cosmed) in 399 children(202 boys;197 girls) aged 6-12 years from two public and two private schools(Ambanja Madagascar).Exclusion criteria: acute or chronic disease, spirometry not repeatable or abnormally shaped flow-volume curves. Height and weight were recorded, malnourishment defined as z-score for BMI <-2. Spirometric data were converted to z-scores according to GLI equations, group differences assessed by t-tests. **RESULTS:**Mean age was 8.7 years(SD 1.5). Mean spirometry z-scores for girls were: FEV<sub>1</sub> -0.01(SD 0.87);FVC 0.06(0.82);FEV<sub>1</sub>/FVC -0.12(0.98), and for boys: FEV<sub>1</sub> 0.20(0.88);FVC 0.26(0.87);FEV<sub>1</sub>/FVC -0.08(0.92). There was no trend with age(figure, gray=female) but a significant association with the BMI (table).



	Subjects	Mean FEV <sub>1</sub>	Mean FVC	Mean FEV <sub>1</sub> /FVC
Low BMI	79	-0.41	-0.34	-0.13
Normal BMI	320	0.22	0.29	-0.09
p (t-test)		<0.0001	<0.0001	0.366

**CONCLUSIONS:**spirometric data fit the Global Lung Initiative equations for black people (Quanjer et al. 2012) well. For the same stature African children have lower lung volumes than Europeans but the same lung emptying rate(FEV<sub>1</sub>/FVC).FEV<sub>1</sub> and FVC are reduced in malnourished children with no evidence of airflow limitation, reflecting stunted growth.