

Peak expiratory flow rate variability in apparently healthy school children aged 10-15 years in Oredo, Nigeria

To the Editor

I read the interesting article by Osarogiagbon et al¹ on the peak expiratory flow rate variability in apparently healthy school children aged 10-15 years in Oredo, Nigeria. Peak expiratory flow rate (PEFR) monitoring is recommended in obstructive air ways diseases guidelines particularly asthma as a tool for assessing severity, monitoring response to treatment, detecting exacerbations, identifying triggers, and providing objective justification for treatment to the patient. It was identified a 7-fold variation in the scale of existing PEFR charts, with resulting wide variation in the appearance of the same PEFR date on different charts. There is an obvious need for standardization of these charts to avoid confusion for patients and to allow development of pattern recognition skills by clinicians. The authors in the aforementioned study demonstrated a good correlation of weight, height, and age with PEFR variability in a form of inverse relationship and, therefore, they recommended using of any one of these indices in predicting PEFR in children aged 10-15 years in Benin City. Such conclusion and recommendation might be applicable in the studied children within that specific locality. It seems questionable as they contradict with other studies that showed such correlation but in a different grade. In an Omani study,² all measured spirometric parameters including PEFR increased with age and height and were significantly higher in boys than girls. Height explained the maximum variance for all parameters. After accounting for height in the prediction equations, the contribution of age and weight was minimal. In a Greek study,³ the mean value of PEFR was higher in boys than in girls at all ages, except the age of 12-13 years. A very strong relationship was found between PEFR and age up to the age of 11 years but no such a relationship was found in older children as regards PEFR and height. No positive correlation between PEFR and weight was found. Moreover; a considerable difference in PEFR values was found in the various groups of every age and gender according to height.

They concluded that height should always be considered in estimating PEFR value. In an Iranian study,⁴ a high correlation between PEFR with all anthropometrics variants was demonstrated. Correlation between PEFR and height was more significant and between PEFR and weight was lower. In a more recent Chinese study,⁵ PEFR values increased with the increase of age, height, and weight and correlated significantly with age, height, weight, and gender. The variation in these studies can be explained on the observation that normal lung function tends to be genetically, physiologically, nutritionally, environmentally, psychologically, socioeconomically, and ethnically determined. Hence, the importance of using population-specific prediction equations to establish pediatric pulmonary function reference values including PEFR through consideration of the already mentioned determinants.

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Reply from the Author

No reply was received from the Author.

References

1. Osarogiagbon WO, Ibadin MO, Oviawe OS. Peak expiratory flow rate variability in apparently healthy school children aged 10-15 years in Oredo, Nigeria. *Saudi Med J* 2008; 29: 1616-1620.
2. Al-Riyami BM, Al-Rawas OA, Hassan MO. Normal spirometric reference values for Omani children and adolescents. *Respirology* 2004; 9: 387-391.
3. Aivazis V, Hatzimichail A, Stavridis J, Bourli E, Konstantinidis TH, Katsougiannopoulos V. Growth and other factors affecting peak expiratory flow in Greek children. *Minerva Pediatr* 2005; 57: 83-89.
4. Mohammadzadeh I, Gharagozlou M, Fatemi SA. Normal values of peak expiratory flow rate in children from the town of Babol, Iran. *Iran J Allergy Asthma Immunol* 2006; 5: 195-198.
5. Chen HH, Muzhapaer D. [Detection of peak expiratory flow in healthy children in Xinjiang]. *Zhongguo Dang Dai Er Ke Za Zhi* 2007; 9: 419-421. Chinese.