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Title: Exhaled nitric oxide reference values in healthy Tunisian adults

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Body: Nitric oxide (NO) can be detected in human exhaled air, and its endogenous production is increased in patients with asthma. The objectives of this study were: to determine, in healthy Tunisian adults aged 20 to 60 years, the factors influencing the exhaled fraction of NO (FeNO) values and to establish their reference equation or value table. Methods: It was a cross-sectional analytical study. Healthy Tunisian adults in the region of Sousse, aged 20 to 60 years were recruited. First subjects have responded to a questionnaire, then exhaled NO levels were measured by an online method with electrochemical analyzer. The anthropometric data and pulmonary function data were collected. Simples and a multiple linear regressions were determined. The upper limit of normal (ULN) was defined. Results: 257 subjects were retained. In the total sample, gender did not significantly affect the FeNO values. For practical and routine interpretation of FeNO, two methods were proposed: use of reference equation or use of normal values. For a practical interest, and as gender doesn’t significantly affect the FeNO value, we recommend the use of the total sample reference equation when calculating a predicted FeNO value: FeNO (ppb) = exponential (3.466936 – 0.560725 x Height (m)). After the predicted FeNO value for a given male was computed from this equation, the ULN for the male could be obtained by adding 0.5992724 ppb. Conclusion: We have established reliable and available reference equation and normal values to interpret the results of FeNO in healthy Tunisian adults. Our FeNO reference equation enriches the world bank of reference equations, in which physician could choose according to their regional localization or patient ethnic.