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Title: The recent multi-ethnic global lung initiative 2012 (GLI₂₀₁₂) reference values don't reflect contemporary Mediterranean spirometry

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Body: Introduction. The applicability of the recent Multi-ethnic reference values derived by the GLI₂₀₁₂ in interpreting spirometry data in Tunisian subjects has not been studied. Aims. To see if GLI₂₀₁₂ Multi-ethnic and Tunisian prediction equations can be used interchangeably while interpreting routine spirometric data. Methods. Spirometric data were recorded from 1192 consecutive spirometry procedures in adults aged 18-63 years. Predicted values and lower limits of normality (LLN) were calculated using both regression equations. Applied definitions: large airway obstructive ventilatory defect (LAOVD): $FEV_1/FVC < LLN$. Small AOVD (SAOVD): $FEV_1/FVC > LLN$ and $FVC > LLN$ and $FEF_{25-75\%} < LLN$. Tendency through a restrictive ventilatory defect (TRVD): FEV_1 and $FVC < LLN$. Mixed VD (MVD): FEV_1/FVC and FEV_1 and $FVC < LLN$ and $FEV_1 < LLN$. Z-scores for spirometry from Mediterranean healthy subjects (n=489) were calculated. If the average z-score deviated by $< \pm 0.40$ from the overall mean, the GLI₂₀₁₂ reference values will be considered as reflective of contemporary Mediterranean spirometry. Results: According to Tunisian and GLI₂₀₁₂ reference equations, the percentages of subjects with normal spirometry data, or having LAOVD, or SAOVD or a TRVD or a MVD, were significantly different, respectively, 35% vs 84%, 7% vs 4%, 37% vs 2%; 19% vs 9% and 3% vs 2%. The mean \pm SD Z-scores of the healthy group were -0.55 \pm 0.87 for FEV_1 , -0.62 \pm 0.86 for FVC, 0.10 \pm 0.73 for FEV_1/FVC , 4.43 \pm 0.69 for $FEF_{75\%}$ and 0.07 \pm 0.93 for $FEF_{25-75\%}$). Conclusion. Our results don't support the use of the GLI₂₀₁₂ reference ranges to interpret spirometry in Mediterraneans.