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LETTER TO THE EDITOR

FEV_1 and FVC repeatability goals when performing spirometry

Paul Enright
Professor of Medicine,
The University of Arizona,
Tucson,
Arizona,
USA

Correspondence:
E-Mail: lungguy@aol.com

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Dear Sir,

I applaud the Spirometry standards document by Levy *et al*. published recently in this journal.[1] I note the recommendation in the section on 'Conducting the spirometry test' that the standard for repeatability of FEV_1 and FVC should be 150ml. This is correct.

The ATS/ERS 2005 spirometry quality goals[2] were based on two very large studies, one in school-aged children[3] and one in adult patients.[4] The FEV_1 and FVC repeatability goals of 150 ml were set so that highly experienced technologists can meet them 90% of the time. Some organisations,[5] some large studies,[6-8] and some spirometers, assign a spirometry test session quality grade from A to F, where three acceptable manoeuvres with FVC repeatability of 100ml or better gets an A grade, FVC repeatability of 150-100 ml gets a B grade, and FVC repeatability of 200-150 ml gets a C grade. When the setting demands optimal quality (such as in research studies using change in FEV_1 or FVC as the primary outcome measure), technologists strive for an A or B grade, and some succeed more than 90% of the time.[9] Not surprisingly, the within-test session FEV_1 repeatability is an independent predictor of visit-to-visit FEV_1 reproducibility.[8]

In some settings, optimal quality is not necessary. For example, when using spirometry to detect moderate to severe lung disease (using a single cross-sectional test), it makes no difference to the individual subject (or patient) whether their FEV_1 is 95% predicted or 115% predicted.[6,10] No study has yet been done to determine how bad the quality of spirometry can be without changing the interpretation or medical decisions based on the results. The mantra of pulmonary function experts remains: minimise misclassification.

Conflict of interest declaration

The author has no conflicts of interest on this topic.

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