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Title: How fast do test-leaders learn to perform spirometries? Quality control in routine spirometry testing

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Body: Once performed only in highly specialized laboratories, spirometries are now days often used in screening both in clinical practice and occupational medical supervision. This often means large number of tests, little time for measurements and often brief training of test leaders. In this study we assess the quality development over time in the LifeGene study spirometries. 15 test leaders with limited previous experience of spirometry were employed. The spirometer software only showed FEV₁, FVC, FEV₁/FVC as well as the Quality Grade (QG) on screen. Test-leaders were encouraged to continue testing until the highest QG was achieved. 5128 persons 18 to 45 yrs were tested at one center during 6 months. Both flow volume curves and slow vital capacity was measured in 10 min and 20 s (average). ERS/ATS Quality grade A was achieved in >90% of the subjects within the first two weeks. Quality did not improve over time.

In this screening inexperienced test leaders achieved high quality tests within 2 weeks after one day of introduction and training. This is in concordance with Enright et al (Am Rev Respir Dis 1991; 143:1215-1223). Our conclusion is that high quality can be achieved within a few weeks with little training providing that; 1) QG and feedback are provided on-screen during testing, 2) that the testing is led by this information, and 3) that the number of tests performed per test leader and day is high.