

ATS/ERS SPIROMETRY QUALITY CRITERIA IN REAL LIFE. RESULTS OF TWO OCCUPATIONAL FIELD STUDIES

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Spirometry is a widely used test and standardized recommendations are provided by the American Thoracic Society and European Respiratory Society (ATS/ERS). However, detailed information on test quality in publications is often incomplete. We investigated the acceptability and reproducibility criteria of spirometry in two occupational field studies.

The study groups consisted of 243 practicing welders (Weldox study, median 41.0 years, all male) and 313 first-year veterinary students (AllergoVet study, median 20.0 years, 84.0% female). With respect to the 2005 ATS/ERS recommendations, we retrospectively analysed acceptability using back-extrapolated volume (BEV), forced expiratory time (FET), and end-of-test (EOT) criteria. Reproducibility was assumed if the difference between the largest and next largest FEV₁ or FVC was ≤ 0.150 L.

Spirometry results of 242 welders (984 measurements) and 312 students (1194 measurements) were eligible for further analyses. At least three acceptable measurements could be identified in 213 welders and 301 students, respectively. Here, reproducibility for welders was 96.7% (n=206) for both FEV₁ and FVC. The corresponding results for students were 95.3% (FEV₁, n=287) and 95.7% (FVC, n=288).

Spirometry can be performed with good quality in an occupational field setting. In particular, this quality should also be suitable for surveillance analyses.