

# Quality of spirometries to assess possible COPD in current smokers. Results from an ongoing survey in general practice in Switzerland

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## Background

- COPD is mainly caused by smoking and is often underdiagnosed because patients may adapt to the main symptoms from COPD, or physicians may not take notice of these symptoms.
- Routine primary care spirometry in smokers may improve physicians' awareness of COPD at earlier stages.

## Methods

- Results of the first 50 out of 500 general practitioners (GPs) participating in this survey and performing spirometry (EasyOne, ndd, Switzerland) in consecutively recruited current smokers irrespective of the reason for GP consultation.
- All GPs were trained during a two hours course to conduct spirometry according to the "American Thoracic Society" standards.
- The quality of each spirometric test was assessed according to the criteria of the "National Lung Health Program" (Respir Care 2000;45:513-30).
- FEV<sub>1</sub>, FVC and FEV<sub>1</sub>/FVC were recorded and the predictive values were based on those of the European Respiratory Society (ERS) as well as on those of Switzerland (SAPALDIA).
- Severity of airway obstruction was categorised using GOLD criteria.

## Results

2048 out of 2113 spirometries could be analysed (97%). Only 1211 out of 2048 spirometries had an acceptable or good quality (59%).

Table 4. Recommended Automated Maneuver Quality Control Checks, Messages, and Grades

Messages	
If the BEV is > 150 mL, display "don't breathe."	
If the PEFT is > 120 ms, display "blow out faster."	
If the FET is < 6.0 s and EOTV* is > 100 mL, display "blow out longer."	
If the PEF values do not match within 1.0 L/s, display "blow out harder."	
If the FEV <sub>1</sub> values do not match within 150 mL, display "deeper breath."	
After two acceptable maneuvers that match, the message is "good test session."	
Quality Control Grades*	
A = At least two acceptable maneuvers, with the largest two FEV <sub>1</sub> values matching within 100 mL and the largest two FEV <sub>2</sub> values matching better 100 mL.	
B = At least two acceptable maneuvers, with FEV <sub>1</sub> values matching between 101 and 150 mL.	
C = At least two acceptable maneuvers, with FEV <sub>1</sub> values matching between 151 and 200 mL.	
D = Only one acceptable maneuver, or more than one, but the FEV <sub>1</sub> values match > 200 mL (with no interpretation).	
F = No acceptable maneuvers (with no interpretation).	

From Respir Care 2000;45:513-30



### Quality of spirometry

Quality control grades	Number of tests	Percentage
F	273	13.3%
D	564	27.5%
C	369	18%
B	140	6.8%
A	702	34.3%

### GOLD-Severity-Classification based on ERS-predictive values (only quality control grades A-C)

Diagnosis	Number of tests	Percentages
Normal	839	69%
Mild Obstruction	134	11%
Moderate Obstruction	121	10%
Severe Obstruction	54	4.5%
Very severe Obstruction	13	1.1%
Possible Restriction	50	4.4%

## Summary and Conclusion

- In this GP based study an acceptable or good quality could be achieved in 59% of the spirometries.
- Significant airway obstruction was found in 27% of current smokers.
- A better training of GPs is needed to improve quality of spirometries.
- COPD in current smokers seem to be underestimated.

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