

10 steps to checking your spirometry result

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The 10-step process ensures that best practices for data validation, interpretation and record-keeping are adhered to in the assessment of every spirometry test. This 10-part series briefly outlines each step, one by one.

STEP 9 – RECORDING AND REPORTING

Reporting the spirometry results

The purpose of recording and reporting is that any person who picks up the spirogram at a later date will know exactly what happened at the time of testing and will have clues as to factors during testing that will affect interpretation.

Once testing is complete and before the test is stored, standardised operator comments are strongly recommended by *The Standardization of Spirometry 2019 Update*.¹

To save time and promote thorough reporting, manufacturers are encouraged to upgrade their spirometry software to include drop-down menus which can be edited. Operator comments should be made in four sections, including the following information:²

1. Relating to patient condition

(Pops up when patient information is entered)

- No comment
- First attempt at spirometry
- Reference values are based on ethnicity that may not be suitable for this patient
- Patient used bronchodilator(s) prior to test *(prompt for drugs, doses and times used)*
- Patient smoked < 1 hour prior to test
- Patient had difficulty understanding directions
- Patient reported consumptions of an intoxicant
- Observed symptoms e.g. cough, wheeze, dyspnoea or cyanosis *(prompt for symptoms)*
- Other *(prompt for symptoms)*

2. Relating to quality of each manoeuvre

(Pops up at the completion of each manoeuvre)

- No comments
- Cough during the first second of expiration
- Glottis closure
- Early termination
- Hesitant start of test
- Obstructed mouthpiece or breathing tube
- Leak around mouthpiece
- Not at total lung capacity (TLC) prior to expiration
- Operator changed manoeuvre designation from acceptable to unacceptable *(prompt for a reason)*
- Other *(prompt for description)*

3. Relating to bronchodilator responsiveness testing

(Pops up just prior to post bronchodilator testing)

- Facility bronchodilator responsiveness testing protocol followed for type, dose and delivery, method of administration and wait time before post bronchodilator testing
- Post bronchodilator measurements obtained using other bronchodilator(s), dose(s), delivery method or wait time *(prompt for description)*
- Other *(prompt for description)*

4. Relating to quality of testing session

(Pops up at the completion of the testing session)

- No comments
- Acceptability and/or repeatability criteria not met despite patient's best efforts
- Spirometry-induced bronchospasm
- Patient was too tired to continue
- Forced expiratory volume in one second (FEV₁) dropped more than 20% from baseline
- Motivation difficulties
- Co-ordination difficulties
- Other *(prompt for description)*

For Section 1 above, "other" should include any information deviating from standard protocol e.g. patient tested standing; ulna length or arm span used to estimate height; patient did not use nose clip etc. For Section 3 above, "other" should include any deviation from the default bronchodilator responsiveness testing protocol used by the facility, that has not otherwise been entered.

Until the drop-down menu becomes available in the spirometry software, the operator should record as necessary in the given place within the spirometry software, or by hand on the printed test report.

REFERENCES

1. Graham BL, Steenbruggen I, Miller MR, et al. Standardization of Spirometry 2019 Update. An Official American Thoracic Society and European Respiratory Society Technical Statement. (16 Oct 2019). American Journal of Respiratory and Critical Care Medicine. 2019; 200(8). Available from: <https://www.atsjournals.org/doi/pdf/10.1164/rccm.201908-1590ST> (accessed 9 March 2020).
2. Graham BL, Steenbruggen I, Miller MR, et al. Supplementary material for Standardization of Spirometry 2019 Update Data Supplement. An Official American Thoracic Society and European Respiratory Society Technical Statement. (16 Oct 2019). American Journal of Respiratory and Critical Care Medicine. 2019; 200(8). Available from: <https://www.atsjournals.org/doi/pdf/10.1164/rccm.201908-1590ST> (accessed 9 March 2020).



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