One blow is enough to exclude COPD

The 2025 GOLD Report recommends a simplified approach to confirming the diagnosis of COPD.

Patients with symptoms suggestive of COPD must have the presence of airflow obstruction confirmed using spirometry. Spirometry should be performed following national and/or international recommendations (see box).

Summary of Recommendations for Performing Spirometry [1]

- The expiratory volume/time traces should be smooth and free from irregularities.
- The pause between inspiration and expiration should be less than one second.
- The recording should go on long enough for a volume plateau to be reached, which may take more than 15 seconds in severe disease.

1. Miller MR, Hankinson J, Brusasco V, Burgos F, Casaburi R, Coates A, et al. Standardisation of spirometry. Eur Respir J. 2005;26(2):319-38.

The new, 2025 GOLD report recommends that patients suspected of having COPD should initially be assessed using pre-bronchodilator spirometry, i.e. without having inhaled a bronchodilator (e.g. albuterol/salbutamol) before performing the test. If the results of one pre-bronchodilator blow show normal values for the forced expiratory volume in one second (FEV_1) and the forced vital capacity (FVC) and the FEV_1/FVC ratio is ≥0.7 a diagnosis of COPD can be usually be excluded. Other investigations e.g. an echocardiogram may be required to determine the cause of the patients symptoms.

- If the results of the pre-bronchodilator spirometry show an FEV_1/FVC ratio between 0.7 and 0.8 the test should be repeated after an interval as in some cases the ratio may change as a result of biological variation.
- If the results of pre-bronchodilator spirometry show a low FEV_1 but an FEV_1/FVC ≥ 0.7, or if the patient is very symptomatic and no other cause is apparent, repeating spirometry after administration of a bronchodilator in these settings may occasionally reveal airflow obstruction that is not apparent on pre-bronchodilator testing.

If three pre-bronchodilator blows show a FEV_1/FVC ratio <0.7 the test should be repeated after the patient has inhaled 400 mcg of a short-acting $beta_2$-agonist (e.g.

albuterol/salbutamol), 160 mcg of a short-acting anticholinergic (e.g. ipratropium), or the two combined. The FEV_1 and FVC should be measured 10-15 minutes after a short-acting beta2-agonist is given, or 30-45 minutes after a short-acting anticholinergic or a combination of both classes of drugs.

- Post-bronchodilator spirometry with three technical acceptable blows all showing an FEV_1/FVC ratio <0.7 indicates airflow obstruction and a diagnosis of COPD can be confirmed.
- Both FVC and FEV_1 should be the largest value obtained from any of three technically satisfactory curves and the FVC and FEV_1 values in these three curves should vary by no more than 5% or 150 mL, whichever is greater.
- The FEV_1/FVC ratio should be taken from the technically acceptable curve with the largest sum of FVC and FEV_1.