

to confidently predict which young adult smokers will develop clinically important COPD.

Meanwhile, we do not think that assembling a panel of clinicians to attempt a consensus about the diagnosis of COPD in a number of cases will be useful. Establishing a diagnosis is a means to an end: intervention. Apart from smoking cessation, which is effective at any level of FEV₁, the cost-effectiveness of COPD interventions when FEV₁ is >60% pred remains very poor, and, thus, screening or case-finding for early COPD should not currently be performed [6]. We are especially concerned for older persons who are classified as having COPD stage I, as such a designation may lead to inappropriate pharmacotherapy and delays in the consideration of other diagnoses, such as heart failure, which is common in older smokers [7].

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GOLD and the fixed ratio

To the Editors:

QUANJER *et al*. [1] point out that they, and other respiratory physiologists, wish the Global Initiative for Chronic Obstructive Lung Disease (GOLD) committee to change the spirometric criteria for diagnosing chronic obstructive pulmonary disease (COPD) from the current fixed ratio of forced expiratory volume in 1 s (FEV₁) to forced vital capacity (FVC) <0.70 to using lower limit of normal (LLN). We will try briefly to address the concerns of QUANJER *et al*. [1]; concerns that they have expressed in identical terms in other places.

A diagnosis of COPD is a clinical diagnosis made in a patient presenting to his/her doctor with relevant symptoms and/or exposures. In the suggested revision of the GOLD document spirometry airflow limitation will be required for the diagnosis; until now, spirometry was merely used for “confirming the diagnosis”. In the GOLD document, airflow limitation is defined as a post-bronchodilator FEV₁/FVC <0.70 [2]. We are fully aware that more subjects will have airflow limitation when the fixed ratio is used as criterion than when LLN is applied; this is easy to demonstrate in population samples. However, we are not aware of any study showing that a clinical diagnosis of COPD is more frequently, and wrongly, made if the fixed ratio is used in a diagnostic setting instead of the LLN. Indeed, there are papers showing that subjects with FEV₁/FVC <0.70 but above LLN have a poorer prognosis than subjects with FEV₁/FVC >0.70 [3, 4].

QUANJER *et al*. [1] accuse GOLD of “selling sickness”. We find this suggestion absurd, as GOLD does not advocate screening spirometry, or even suggest treating asymptomatic subjects with COPD. Today’s problem for COPD is not overdiagnosis and overtreatment; indeed, all evidence so far points to lack of diagnosis and undertreatment of COPD.

Obviously, the choice between the fixed ratio and LLN would be simple if one was obviously correct and the other obviously wrong. However, both have advantages and disadvantages. QUANJER *et al*. [1] have listed their perceived errors in using the fixed ratio. However, LLN is based on the assumption that any change in lung function over time in never-smokers is solely the result of ageing and not of ageing combined with cumulative exposure to inhaled gases other than tobacco smoke. In addition, LLN is heavily dependent on the choice of reference values, as normality is solely determined by distribution of lung function values in asymptomatic never-smokers. Particularly in developing countries, where tobacco smoking may not be the most important risk factor for COPD [5], the choice of reference population will have a major impact on LLN, and thus on probability of a diagnosis of COPD. A recent study from the European Community Respiratory Health Survey has documented the effect of early life events on the likelihood of having airflow limitation in early adulthood [6] and this also underlines the need for carefully considering the choice of correct reference values in the diagnostic process.

More importantly, the fixed ratio is simple and, indeed, comparable to what has been a successful way of obtaining better acceptance and management of hypertension [7]. The fixed ratio has been endorsed in the clinical European Respiratory Society/American Thoracic Society COPD guidelines [8] as well as the often quoted COPD guidelines from the UK National Institute for Health and Clinical Excellence [9]; the GOLD document and these two clinical guidelines are the most common guidelines followed by the medical community. It has been used extensively in research and as an inclusion criterion in numerous clinical trials; in fact, evidence-based management of COPD is more or less entirely based on studies using the fixed ratio. For this reason, GOLD believes that on balance we serve the clinicians managing COPD best by continuing with the fixed ratio.

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From the authors:

We welcome this opportunity for an open debate of the best definition of mild chronic obstructive pulmonary disease (COPD). The pulmonary clinicians and physiologists who signed the open letter to the Global Initiative for Chronic Obstructive Lung Disease (GOLD) committee agree that: 1) COPD is a very important health problem; 2) too many cases are detected too late; 3) airways obstruction can only be detected by spirometry; 4) spirometry is greatly under-utilised and requires skilled personnel; and 5) misinterpretation of spirometry results is a cause for concern. During the past decade, the GOLD guidelines have greatly improved worldwide awareness of COPD and provided a “living document” for the diagnosis and treatment of COPD with the laudable goal of annual updates based on newly published evidence. However, the current GOLD guidelines [1] continue to define mild COPD as post-bronchodilator ratio of forced expiratory volume in 1 s (FEV₁) to forced vital capacity (FVC) <0.70 with a normal FEV₁, without evidence that even the majority of these adults so identified actually have COPD (even when including only those who report respiratory symptoms). It is illogical to teach generations of doctors to respect the normal range in biochemical and other clinical indices, but not in respiratory medicine because it is too difficult.

More than 80% of smokers report a chronic cough or dyspnoea on exertion, but a diagnosis of COPD should not be made unless they also have airway obstruction and an abnormally low FEV₁. Regardless of their spirometry results, they all should be encouraged and helped to stop smoking. Likewise, more than one-third of smokers develop cardiovascular disease or lung cancer. Thus, even smokers with a normal FEV₁ in GOLD stage I have a substantially increased risk of morbidity and premature death, but that fact does not provide evidence that they have COPD.

Some 10–20% of smokers will develop clinically important COPD (FEV₁ <60% predicted). In a population sample, we simply cannot yet identify the 10–20% of adult smokers currently in GOLD stage I. Hence, using the current GOLD guidelines, we are wrong 80% of the time; in the study by GEIJER *et al.* [2] even fewer (8.3%) symptomatic subjects and smokers moved from GOLD stage I to stage II in 5.2 years, and none developed GOLD stages III or IV.

We should have a high degree of confidence in the diagnosis before we label a person as having a progressive, incurable disease and then prescribe an expensive drug therapy (such as a long-acting bronchodilator) for the rest of their life. For patients in GOLD stages III–IV we are highly confident of the diagnosis of COPD, and large clinical trials of bronchodilator inhalers show some reduction in dyspnoea in some patients, and some reduction in exacerbations in those with a previous history of exacerbations. However, there is a paucity of such evidence for those with a FEV₁ >60% pred (GOLD stage I and the top half of GOLD stage II) [3]. Only smoking cessation has been proven to reduce the risk of rapid loss of lung function, and this benefit is evident at any baseline level of lung function.

The GOLD committee acknowledges that a fixed ratio leads to over-diagnosis of airway obstruction but continues to

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