

## INTRODUCTION

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In 1983 the EUROPEAN COMMUNITY FOR STEEL AND COAL last issued recommendations on lung function testing and reference values for various indices of ventilatory function, thus continuing its pioneering role in the field since 1961. Whilst the guidelines appear to have been widely adopted in Europe, after 10 years it was time to review whether they still represented the present state of knowledge. In this process the Working Party has also carefully considered those guidelines which differed from those updated in 1989 by the AMERICAN THORACIC SOCIETY (ATS), since it is in the interest of those performing and interpreting lung function tests as well as of manufacturers of lung function equipment that a standard be achieved which can be applied worldwide. The Working Party has updated the chapters on the standardized measurement of the most frequently used tests of ventilatory function, *i.e.* assessment of forced ventilatory flows, lung volumes and transfer factor of the lung, and has reviewed reference values for the various indices. The various statements in the present report have been systematically substantiated by references to the literature. Attention has been given to the clinical usefulness of lung function tests and to the interpretation of responses to bronchodilator drugs.

Bronchial hyperresponsiveness is a hallmark of obstructive lung disease, notably in patients with asthma. Tests of airway responsiveness are being widely applied in research and in the clinical assessment of patients. Techniques for assessing airway responsiveness have proliferated in the past decade. The Working Party therefore, with the help of experts from around the globe, presents a comprehensive review of these tests and their usefulness, as well as recommendations on how they should be carried out. In issuing these recommendations the Working Party wishes to harmonise testing procedures worldwide, including the adoption of safety procedures; it is the responsibility of investigators and clinicians to decide whether airway responsiveness tests form part of the spectrum of diagnostic lung function tests or remain in the research domain.

The present recommendations on spirometric measurements deviate in a few instances from those of the ATS. The end of test criterion of the FVC manoeuvre was not adopted, as many individuals cannot exhale sufficiently long to meet the ATS criteria. The selection of the «best» curve from amongst a set of maximal expiratory flow-volume curves has not been changed from the previous recommendation of the EUROPEAN COMMUNITY FOR STEEL AND COAL; the present procedure ensures the highest reproducibility and is least likely to be affected by a sub-optimal expiratory effort. The chapter on lung volumes and ventilatory flows was extensively reviewed by an ATS

committee, comprising members of the ATS and the EUROPEAN RESPIRATORY SOCIETY, which is drafting recommendations on the measurement of lung volumes. The cooperation in this field hopefully leads to one standard; the present recommendations are being considered by the Committee on Proficiency Standards for Clinical Pulmonary Function Testing of the AMERICAN THORACIC SOCIETY, so that remaining differences might be ironed out soon.

The EUROPEAN COMMUNITY FOR STEEL AND COAL has been the first international body to issue recommendations on reference values for ventilatory indices. As the European Community comes of age it encompasses an increasing number of states with peoples of different extraction, and with a considerable influx of people of different ethnic background. The present report provides broad guidelines how to deal with reference values for such groups. However, more rigorous testing of the recommendations is required, and investigators are encouraged to address the problem of appropriate predictions for groups of different nationality or ethnic descent.

The present recommendations have been extensively reviewed inside and outside Europe. The Executive Committee of the EUROPEAN RESPIRATORY SOCIETY adopted the recommendations after they had been carefully reviewed by Drs. J. Gibson, K. Moghissi, R. Pauwels, A. Rossi, A. Tattersfield and M. Zach; the final report benefitted substantially from their critical comments, which are gratefully acknowledged. The contributions of Drs. S.D. Anderson, P.M. O'Byrne, D.W. Cockcroft, E.F. Juniper and J.-L. Malo to the chapter on airway reactivity testing, as well as of Dr. M. Miller to the appendix on measurement of flow, were indispensable. The Working Party also gratefully acknowledges the invaluable and good-humoured secretarial assistance provided by Mrs. H.D. Bronsveld and Mrs. A. Midderham, and the pleasant, prompt and unselfish assistance of Drs. N. Siafakas, B. Bouros, N. Tzanakis, F. Vlaserou and J.H. Paiva de Carvalho in translating the tables of terms and definitions into Greek and Portuguese.

Nothing is perfect. Therefore readers who spot serious deficiencies or inconsistencies, or who have suggestions otherwise, are encouraged to either submit their comments to the *European Respiratory Journal* or send these to:

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