

PHYSIOLOGY AND PRACTICE
OF
PULMONARY FUNCTION

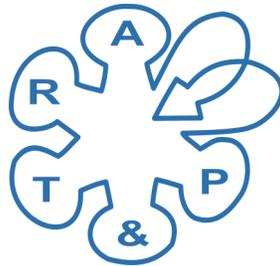
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PREFACE

This book has been commissioned by the ARTP, the professional organisation which represents Health Care Scientists who staff and run Pulmonary Function laboratories in the UK. I have tried to look at the lung and respiratory system from their point of view. The first 13 chapters concentrate on the *Physiology* underpinning pulmonary function, and the last five focus on the laboratory-based *Practice* of Pulmonary Function Testing. I hope that those (in Respiratory Medicine) who work outside the Pulmonary Function Laboratory, but who make use of the services, will find some inspiration and education from it.

Two important aspects of Pulmonary Function, a) in infants and children, and b) in the intensive care unit, not dealt with in this book, are covered well in Chapters 10 and 11 of the European Respiratory Monograph, 2005; 31 (volume 10) on Lung Function Testing, edited by R Gosselink and H Stam.

This is not a “How to do it” book. Technical aspects of how to measure the FEV₁, TLC and TLCO etc are covered in the ERS/ATS Statements referenced in Chapter 16, and in excellent Handbooks available from the Association for Respiratory Technology and Physiology, www.artp.org.uk

Pulmonary Function testing is constantly being refined, with the addition of new tests, techniques and obligations. Sleep and Non-invasive ventilation (Chapters 10 and 11) have entered the repertoire of many respiratory departments, and there are new insights into the periphery of the lung (the acinus) and bronchiolar obstruction (the “really small” airways) and the meaning and interpretation of the TLCO and KCO (Chapters 4 and 6).

Just how much has changed in 50+ years can be seen from the ground-breaking *The Lung: clinical physiology and lung function tests* (Comroe, Forster, Dubois, Briscoe, Carlsen [1955]). *The Lung* gives an account of pulmonary gas exchange which it would be difficult to improve on, even today; but, there is no mention of the FEV₁, TLCO (DLCO), plethysmography or exercise testing. It was a dawn, heralding the new day.

There have since been many books on Lung Function from JB West’s “*The Essentials of Respiratory Physiology and Pulmonary Pathophysiology*” to GJ Gibson’s *Clinical Tests of Respiratory Function*. Each has its own style and focus as does this book, which updates Hughes and Pride’s *Lung Function Tests: physiological principles and clinical applications* (2000).

Mike Hughes
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