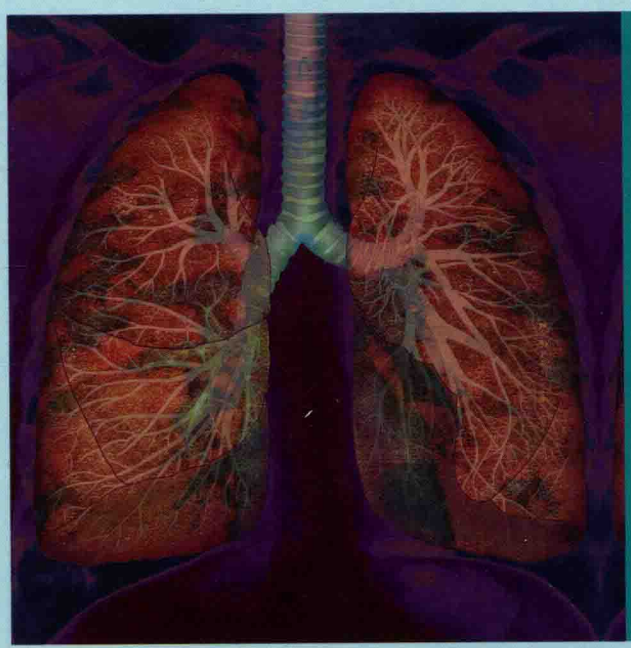
临床呼吸病学

Clinical Respiratory Medicine

第4版



原　著　Stephen G. Spiro
Gerard A. Silvestri
Alvar Agustí

主　译　邱　晨
林江涛

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原　著　Stephen G. Spiro
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译者名单

主　译

邱　晨　暨南大学第二临床医学院
林江涛　中日友好医院

副主译

鄯孟洁　暨南大学第二临床医学院
王凌伟　暨南大学第二临床医学院
史　菲　暨南大学第二临床医学院
杨敏洁　暨南大学第二临床医学院
王跃春　暨南大学基础医学院

译　者（按姓名汉语拼音排序）

陈丹丹　暨南大学第二临床医学院
陈旭东　暨南大学第二临床医学院
刁振华　深圳市龙岗区第二人民医院
杜　娟　深圳市第七人民医院
方爱平　四川大学华西公共卫生学院生物治疗国家重点实验室
鄯孟洁　暨南大学第二临床医学院
符少平　深圳市第九人民医院
高伟良　深圳市龙华区中心医院
官民婕　暨南大学第二临床医学院
何　旗　暨南大学第二临床医学院
胡安美　深圳市宝安区中心医院
黄艳媚　中山大学第八附属医院
李　娜　深圳市第九人民医院
林江涛　中日友好医院
刘雯雯　暨南大学第二临床医学院
卢春容　深圳市慢性病防治中心
彭文科　广州中医药大学附属广州市中西医结合医院
邱　晨　暨南大学第二临床医学院
史　菲　暨南大学第二临床医学院
苏美萍　深圳市龙岗区人民医院
王光锁　暨南大学第二临床医学院
王凌伟　暨南大学第二临床医学院
王跃春　暨南大学基础医学院
翁选雯　暨南大学第二临床医学院
吴　迪　暨南大学第二临床医学院
吴森泉　南方医科大学附属东莞市人民医院
熊　奕　暨南大学第二临床医学院
徐笑洋　暨南大学第二临床医学院
杨　超　暨南大学第二临床医学院
杨　岷　华中科技大学同济医学院附属同济医院《放射学实践》杂志编辑部
杨敏洁　暨南大学第二临床医学院
易芹芹　暨南大学第二临床医学院
张　婷　暨南大学第二临床医学院
张宏美　深圳市蛇口人民医院
周　霞　暨南大学第二临床医学院

原著者名单

Asia A. Ahmed, MBBS, MRCP, FRCR
Senior Specialist Registrar in Radiology, Department of Imaging, University College London Hospital National Health Service Foundation Trust, London, United Kingdom
Percutaneous Biopsy Procedures: Techniques and Indications

Richard K. Albert, MD
Chief of Medicine, Denver Health; Professor of Medicine, University of Colorado, Aurora, Colorado
Chest Pain

Mark S. Allen, MD
Professor of Surgery, Chair, Division of General Thoracic Surgery, Mayo Clinic, Rochester, Minnesota
Diagnostic Thoracic Surgical Procedures

Douglas Arenberg, MD
Associate Professor, Division of Pulmonary and Critical Care Medicine, University of Michigan Medical Center, Ann Arbor, Michigan
Lung Cancer: Treatment

Phil Bearfield, MB, ChB, FRCA, EDIC, FFICM
Consultant Intensivist, Royal Free Hospital, London, United Kingdom
Hemodynamic Monitoring in Critical Illness

Thomas Benfield, MD, DMSc
Associate Professor, Department of Infectious Diseases, University of Copenhagen, Hvidovre University Hospital, Hvidovre, Denmark
Noninfectious Conditions in Patients with Human Immunodeficiency Virus Infection

Ilya Berim, MD
Fellow, Pulmonary and Critical Care Medicine, School of Medicine and Biomedical Sciences, University at Buffalo, The State University of New York, Buffalo, New York
Community-Acquired Pneumonia

Kathryn G. Bird, MD
Occupational Physician, Concentra, Golden, Colorado
Toxic Inhalational Lung Injury

Surinder S. Birring, MD, MRCP
Honorary Senior Lecturer Division of Asthma, Allergy and Lung Biology, King's College London; Consultant Physician, Department of Respiratory Medicine, King's College Hospital, London, United Kingdom
Cough

Lukas Brander, MD
Department of Intensive Care Medicine, Inselspital, Bern University Hospital, University of Bern, Bern, Switzerland
Invasive Mechanical Ventilation

Jeremy S. Brown, MBBS, PhD, FRCP
Reader, Centre for Respiratory Research, University College London, London, United Kingdom
Pneumonia in the Non–HIV-Infected Immunocompromised Patient

Kevin K. Brown, MD
Professor and Vice Chairman, Department of Medicine, Division of Pulmonary and Critical Care Medicine, National Jewish Health, University of Colorado, Aurora, Colorado
Idiopathic Pulmonary Fibrosis and Other Interstitial Lung Diseases

Todd M. Bull, MD
Associate Professor, Pulmonary Sciences and Critical Care Medicine; Director, Pulmonary Vascular Center, University of Colorado, Aurora, Colorado
Pulmonary Embolism

Felip Burgos, MSc, RPFT, RN
Servei de Pneumologia i Allèrgia Respiratòria, ICT, Departament de Medicina, Institut D'Investigacions Biomèdiques August Pi i Sunyer, Hospital Clínic, Universitat de Barcelona, Barcelona, Spain
Exercise Testing

Peter M.A. Calverley, MB, ChB, FRCP, FRCPE
Professor of Respiratory Medicine, Institute of Ageing and Chronic Disease, University of Liverpool; Consultant Physician, Clinical Sciences Centre, University Hospital Aintree, Liverpool, United Kingdom
Bronchodilators

Philippe Camus, MD
Professor, Division of Pulmonary and Critical Care, Centre Hospitalier Universitaire de Dijon, Hôpital du Bocage, Université de Bourgogne, Dijon, France
Drug-Induced and Iatrogenic Respiratory Diseases

Paolo Carbonara, MD
Physician, Division of Respiratory and Critical Care Medicine, Sant'Orsola-Malpighi Hospital, University of Bologna, Bologna, Italy
Noninvasive Mechanical Ventilation

William Graham Carlos III, MD
Assistant Professor of Clinical Medicine, Indiana University School of Medicine, Indianapolis, Indiana
Nonbacterial Infectious Pneumonia

Stephen D. Cassivi, MD, MSc, FRCSC
Associate Professor of Surgery, Division of General Thoracic Surgery; Director of Lung Transplantation, Mayo Clinic, Rochester, Minnesota
Chest Tube Insertion and Management
Diagnostic Thoracic Surgical Procedures

Rodrigo Cavallazzi, MD
Assistant Professor of Medicine, Assistant Director, Intensive Care Services, University of Louisville Health Sciences Center, Louisville, Kentucky
Pulmonary Complications of Hematopoietic Stem Cell Transplantation

Bartolome R. Celli, MD
Professor of Medicine, Harvard Medical School, Brigham and Women's Hospital, Boston, Massachusetts
Treatment of the Stable Patient with Chronic Obstructive Pulmonary Disease

William Y.C. Chang, MBMCh, MA(Oxon)
Research Fellow, Division of Therapeutics and Molecular Medicine, University of Nottingham, Nottingham, United Kingdom
Rare Diffuse Interstitial Lung Diseases

Chung-Wai Chow, MD, PhD
Assistant Professor, Division of Respirology, Department of Medicine, University of Toronto; Staff Respirologist, Division of Respirology, Multiorgan Transplant Unit, University Health Network, Toronto, Ontario, Canada
Pulmonary Host Defenses

Andrew M. Churg, MD, FRCP(C)
Professor of Pathology, University of British Columbia; Pathologist, Vancouver General Hospital, Vancouver, Canada
Macro and Micro Structure of the Lung

Jean-François Cordier, MD
Professor of Respiratory Medicine, Claude Bernard Lyon 1 University; Head of Department of Respiratory Medicine, Reference Center for Rare Pulmonary Diseases, Louis Pradel University Hospital, Lyon, France
Eosinophilic Lung Disease
Organizing Pneumonia

Borja G. Cosio, MD, PhD, MCP
Consultant, Department of Respiratory Medicine, Hospital Universitario Son Espases, Palma de Mallorca, Spain
Asthma: Epidemiology, Pathophysiology, and Risk Factors

Vincent Cottin, MD, PhD
Professor of Respiratory Medicine, Claude Bernard Lyon 1 University; Department of Respiratory Medicine, Reference Center for Rare Pulmonary Diseases, Louis Pradel University Hospital, Lyon, France
Eosinophilic Lung Disease
Organizing Pneumonia

Bruce H. Culver, MD
Associate Professor of Medicine, Division of Pulmonary and Critical Care Medicine, University of Washington School of Medicine, Seattle, Washington
Respiratory Mechanics
Pulmonary Circulation
Pulmonary Function Testing

Charles L. Daley, MD
Professor and Chief, Division of Mycobacterial and Respiratory Infections, National Jewish Health; Professor, Division of Pulmonary and Critical Care Medicine and Infectious Diseases, University of Colorado, Aurora, Colorado
Tuberculosis and Nontuberculous Mycobacterial Infections

Helen E. Davies, MD, MRCP
Consultant in Respiratory Medicine, University Hospital of Wales, Cardiff, United Kingdom
Pleural Effusion, Empyema, and Pneumothorax

Chadrick E. Denlinger, MD
Assistant Professor, Medical University of South Carolina, Charleston, South Carolina
Diagnostic Thoracic Surgical Procedures

Christophe Deroose, MD, PhD
Assistant Professor, Catholic University; Deputy Clinical Head, Positron Emission Tomography Centre, Department of Nuclear Medicine, University Hospital Gasthuisberg, Leuven, Belgium
Positron Emission Tomography Imaging

Claude Deschamps, MD
Professor of Surgery, Division of General Thoracic Surgery; Chair, Department of Surgery, Mayo Clinic, Rochester, Minnesota
Chest Tube Insertion and Management

Christophe Dooms, MD, PhD
Assistant Professor of Internal Medicine, Catholic University; Deputy Clinical Head, Pulmonology, University Hospital Gasthuisberg, Leuven, Belgium
Positron Emission Tomography Imaging

Gregory P. Downey, MD
Professor and Executive Vice President, Academic Affairs, Division of Pulmonary and Critical Care Medicine, Departments of Medicine and Pediatrics, National Jewish Health; Professor, Department of Medicine, Integrated Department of Immunology, University of Colorado, Aurora, Colorado
Pulmonary Host Defenses

Miquel Ferrer, MD, PhD
Assistant Professor of Medicine, University of Barcelona; Senior Consultant, Respiratory Intensive Care Unit, Thorax Institute, Hospital Clinic, Barcelona, Spain
Nosocomial Respiratory Infections

Rodney J. Folz, MD, PhD
Professor of Medicine, Biochemistry, and Molecular Biology; Chief, Pulmonary, Critical Care, and Sleep Disorders Medicine; Director; Adult Cystic Fibrosis Program; Distinguished University Scholar, University of Louisville Health Sciences Center, Louisville, Kentucky
Pulmonary Complications of Hematopoietic Stem Cell Transplantation

Edward R. Garrity, Jr., MD, MBA
Professor of Medicine, Section of Pulmonary and Critical Care Medicine, University of Chicago, Chicago, Illinois
Lung Transplantation

Alex H. Gifford, MD
Assistant Professor of Medicine, Dartmouth Medical School, Hanover, New Hampshire
Dyspnea

Robb W. Glenny, MD
Professor of Medicine, Physiology, and Biophysics; Head, Division of Pulmonary and Critical Care Medicine, University of Washington, Seattle, Washington
Pulmonary Circulation

Kelsey Gray, MD, MS
Fellow, Pulmonary and Critical Care Medicine, University of Colorado, Aurora, Colorado
Extrinsic Allergic Alveolitis

Ruth H. Green, MBChB, MSc, MD, FRCP
Consultant Respiratory Physician and Honorary Senior Lecturer, Institute for Lung Health, Glenfield Hospital, University Hospitals of Leicester National Health Service Foundation Trust, Leicester, United Kingdom
Diagnosis and Management of Asthma in Adults

Michael P. Gruber, MD
Assistant Clinical Professor, University of Colorado, Aurora, Colorado
Pulmonary Embolism

J.C. Grutters, MD, PhD
Professor, Department of Pulmonology, Center of Interstitial Lung Diseases, St. Antonius Hospital, Nieuwegein, The Netherlands; Division of Heart and Lungs, University Medical Center Utrecht, Utrecht, The Netherlands
Connective Tissue Diseases

Andrew R. Haas, MD, PhD
Assistant Professor of Medicine, Perelman School of Medicine; Director of Clinical Operations, Section of Interventional Pulmonology and Thoracic Oncology, Pulmonary, Allergy, and Critical Care Division, University of Pennsylvania Medical Center, Philadelphia, Pennsylvania
Bronchoscopy

Chadi A. Hage, MD
Assistant Professor of Medicine, Indiana University; Staff Physician, Roudebush VA Medical Center, Indianapolis, Indiana
Nonbacterial Infectious Pneumonia

Pranabashis Haldar, MD, MRCP
Senior Lecturer, Department of Respiratory Medicine, Institute for Lung Health, Glenfield Hospital, University Hospitals of Leicester National Health Service Foundation Trust, Leicester, United Kingdom
Diagnosis and Management of Asthma in Adults

David M. Hansell, MD, FRCP, FRCR
Professor of Thoracic Imaging, National Heart and Lung Institute, Imperial College School of Medicine; Consultant Radiologist, Royal Brompton and Harefield National Health Service Foundation Trust, London, United Kingdom
Imaging Techniques

Nicholas Hart, BSc, PhD, MRCP, FFICM
Clinical Research Consultant, Respiratory and Critical Care Medicine, National Institute of Health Research, Comprehensive Biomedical Research Centre, King's College London; Clinical and Academic Director, Lane Fox Respiratory Unit, St. Thomas' Hospital, Guy's and St. Thomas' National Health Service Foundation Trust, London, United Kingdom
Diseases of the Thoracic Cage and Respiratory Muscles

Felix J.F. Herth, MD, PhD, FCCP
Professor of Medicine, Chairman and Head, Department of Pneumology and Critical Care Medicine, Thoraxklinik, University of Heidelberg, Heidelberg, Germany
Endobronchial and Endoesophageal Ultrasound Techniques

Kristin B. Highland, MD, MSCR
Associate Professor of Medicine, Division of Pulmonary, Critical Care, Allergy, and Sleep Medicine, Medical University of South Carolina, Charleston, South Carolina
Pulmonary Hypertension

Andre Holmes, MD
Senior Pulmonary Fellow, Division of Pulmonary, Critical Care, Allergy, and Sleep Medicine, Medical University of South Carolina, Charleston, South Carolina
Pulmonary Hypertension

John R. Hurst, PhD, FRCP
Senior Lecturer, Academic Unit of Respiratory Medicine, University College London Medical School, London, United Kingdom
Management of Exacerbations in Chronic Obstructive Pulmonary Disease

Michael C. Iannuzzi, MD, MBA
Edward C. Reifenstein Professor and Chair, Department of Medicine, State University of New York, Upstate Medical University, Syracuse, New York
Sarcoidosis

Ferrán Barbé Illa, MD
Respiratory Department, Hospital University Arnau de Vilanova, University of Lleida, Lleida; CIBERES, Madrid, Spain
Obstructive Sleep Apnea: Epidemiology, Risk Factors, and Pathophysiology

Cyrielle Jardin, MD
Pulmonary Medicine Fellow, Service de Pneumologie et Immuno-allergologie, Centre de Competence des Maladies Pulmonaires Rares, Hôpital Albert Calmette, CHRU at Universite de Lille 2, Lille, France
Silicosis and Coal Worker's Pneumoconiosis

Simon R. Johnson, MBBS, DM, FRCP
Professor of Respiratory Medicine, Division of Therapeutics and Molecular Medicine, University of Nottingham and National Centre for Lymphangioleiomyomatosis, Nottingham, United Kingdom
Rare Diffuse Interstitial Lung Diseases

Robert M. Kacmarek, RRT, PhD
Professor, Department of Anesthesia, Harvard University; Director, Department of Respiratory Care, Massachusetts General Hospital; Boston, Massachusetts
Acute Respiratory Distress Syndrome

Harsha H. Kariyawasam, MBBS, MRCP, BSc, PhD
Consultant Physician, Department of Allergy and Medical Rhinology, Royal National Throat, Nose and Ear Hospital, London, United Kingdom
Upper Airway Disease: Rhinitis and Rhinosinusitis

Joel D. Kaufman, MD, MPH
Professor, Departments of Medicine, Environmental and Occupational Health Sciences, and Epidemiology, University of Washington, Seattle, Washington
Air Pollution

John W. Kreit, MD
Professor of Medicine and Anesthesiology and Director of Fellowship Training Programs, Division of Pulmonary, Allergy, and Critical Medicine, University of Pittsburgh School of Medicine, Pittsburgh, Pennsylvania
Hemoptysis

Michael J. Krowka, MD
Professor of Medicine, Division of Pulmonary and Critical Care Medicine, Mayo Clinic, Rochester, Minnesota
Hepatic and Biliary Disease

Mark Lambert, FRCA, BA(Hons), MBBS
Specialist Registrar in Anaesthesia, Royal Free Hospital, London, United Kingdom
Hemodynamic Monitoring in Critical Illness

J.-W.J. Lammers, MD, PhD
Professor, Division of Heart and Lungs, Department of Respiratory Medicine, University Medical Center Utrecht, Utrecht, The Netherlands
Connective Tissue Diseases

Stephen E. Lapinsky, MB BCh, MSc, FRCPC
Professor of Medicine, University of Toronto; Site Director, Intensive Care Unit, Mount Sinai Hospital, Toronto, Canada
Pregnancy

Y.C. Gary Lee, MBChB, PhD, FCCP, FRACP
Winthrop Professor of Respiratory Medicine, The University of Western Australia; Consultant and Director of Pleural Services, Respiratory Department, Sir Charles Gairdner Hospital; Head, Pleural Disease Unit, Lung Institute of Western Australia, Perth, Australia
Pleural Effusion, Empyema, and Pneumothorax

Gianluigi Li Bassi, MD
Researcher, Institut D'Investigacions Biomèdiques August Pi i Sunyer; Attending Physician, Respiratory Critical Care Unit, Thorax Institute, Hospital Clinic, Barcelona, Spain
Nosocomial Respiratory Infections

Marc C.I. Lipman, MC, FRCP
Senior Lecturer and Consultant Physician, Centre for Respiratory Medicine, Royal Free Hospital, University College London, London, United Kingdom
Pulmonary Infections in Patients with Human Immunodeficiency Virus Disease

David A. Lomas, PhD, ScD, FRCP, FMedSci
Professor, Department of Medicine, University of Cambridge, Cambridge Institute for Medical Research, Cambridge, United Kingdom
Basic Aspects of Cellular and Molecular Biology

William MacNee, MBChB, MC(Hons), FRCP(Glas), FRCP(Edin)
Professor, The Edinburgh Lung and the Environment Group Initiative Colt Research Laboratories, Medical Research Council Centre for Inflammation Research, Queen's Medical Research Institute, University of Edinburgh, Edinburgh, Scotland, United Kingdom
Chronic Obstructive Pulmonary Disease: Epidemiology, Pathophysiology, and Clinical Evaluation

Donald A. Mahler, MD
Professor of Medicine, Dartmouth Medical School; Director, Pulmonary Function and Cardiopulmonary Exercise Laboratories, Dartmouth-Hitchcock Medical Center, Lebanon, New Hampshire
Dyspnea

Jean-Luc Malo, MD
Professor, Université de Montréal, Hôpital du Sacré-Coeur de Montréal, Montreal, Canada
Occupational Asthma

Stefan J. Marciniak, MA, FRCP, PhD
Medical Research Council Senior Clinical Fellow, Cambridge Institute for Medical Research, University of Cambridge; Honorary Consultant Physician, Addenbrooke's Hospital National Health Service Foundation Trust, Cambridge, United Kingdom
Basic Aspects of Cellular and Molecular Biology

José M. Marin, MD, PhD
Hospital Universitario Miguel Servet, Aragon Institute of Health Sciences, Zaragoza, Spain
Obstructive Sleep Apnea: Clinical Features, Diagnosis, and Treatment

Miguel Ángel Martínez-García, MD
Respiratory Department, Polytechnic and University Hospital, Valencia, Spain
Obstructive Sleep Apnea: Epidemiology, Risk Factors, and Pathophysiology

Peter Mazzone, MD, MPH, FCCP
Director, Lung Cancer Program, Cleveland Clinic Respiratory Institute, Cleveland, Ohio
Preoperative Pulmonary Evaluation

Alan McGlennan, BSc, MBBS, FRCA
Consultant Anaesthetist, Royal Free Hospital, London, United Kingdom
Airway Management in the Intensive Care Unit

Pamela J. McShane, MD
Assistant Professor of Medicine, Section of Pulmonary and Critical Care Medicine, University of Chicago, Chicago, Illinois
Lung Transplantation

Tarek Meniawy, MBBS, FRACP
Medical Oncology Fellow, Department of Medical Oncology, Sir Charles Gairdner Hospital; Research Fellow, University of Western Australia School of Medicine and Pharmacology and National Centre for Asbestos Related Diseases, Nedlands, Australia
Malignant Pleural Mesothelioma

David E. Midthun, MD
Professor of Medicine, Mayo Clinic, Rochester, Minnesota
Benign Lung Tumors

Robert F. Miller, MBBS, FRCP, CBiol, FSB
Professor and Reader in Clinical Infection; Honorary Consultant Physician, Camden Provider Services, University College London, London, United Kingdom
Pulmonary Infections in Patients with Human Immunodeficiency Virus Disease

Theo J. Moraes, MD, PhD
Assistant Professor, Department of Pediatrics, University of Toronto; Pediatric Respirologist, Division of Respirology, Department of Pediatrics, The Hospital for Sick Children, Toronto, Canada
Pulmonary Host Defenses

Alison Morris, MD, MS
Associate Professor of Medicine, Immunology, and Clinical and Translational Research, Department of Medicine, University of Pittsburgh School of Medicine, Pittsburgh, Pennsylvania
Pulmonary Infections in Patients with Human Immunodeficiency Virus Disease

Gimbada B. Mwenge, MD
Center for Sleep Medicine, Cliniques Universitaires Saint-Luc, Université Catholique de Louvain, Brussels, Belgium
Obesity Hypoventilation Syndrome

Stefano Nava, MD
Director, Division of Respiratory and Critical Care Medicine, Sant'Orsola-Malpighi Hospital, Bologna, Italy
Noninvasive Mechanical Ventilation

Lee S. Newman, MD, MA
Professor, Department of Environmental and Occupational Health, Colorado School of Public Health, Department of Medicine, School of Medicine, University of Colorado, Aurora, Colorado
Asbestosis
Toxic Inhalational Lung Injury

Aynur Okcay, MD
Cardiopulmonary Research Fellow, Mayo Clinic, Rochester, Minnesota
Hepatic and Biliary Disease

Simon P.G. Padley, BSc, MBBS, FRCP, FRCR
Reader in Radiology, Imperial College School of Medicine; Consultant Radiologist, Chelsea and Westminster Hospital National Health Service Foundation Trust, Royal Brompton Hospital and Harefield National Health Service Foundation Trust, London, United Kingdom
Imaging Techniques

Ganapathi Iyer Parameswaran, MBBS
Research Assistant Professor, Department of Medicine, University at Buffalo, State University of New York; Physician, Division of Infectious Diseases, VA Western New York Healthcare System, Buffalo, New York
Viral Pneumonia

Nicholas J. Pastis, MD
Assistant Professor of Medicine, Division of Pulmonary and Critical Care Medicine, Medical University of South Carolina, Charleston, South Carolina
Chest Tube Insertion and Management

Manju Paul, MD
Fellow, Division of Pulmonary and Critical Care Medicine, Department of Medicine, State University of New York Upstate Medical University, Syracuse, New York
Sarcoidosis

Ian D. Pavord, DM, FRCP
Consultant Physician and Honorary Professor of Medicine, Institute for Lung Health, Glenfield Hospital, University Hospitals of Leicester National Health Service Foundation Trust, Leicester, United Kingdom
Cough
Diagnosis and Management of Asthma in Adults

Hilary Petersen, MPAS, PA-C
Physician Assistant, Lung Cancer Program, Cleveland Clinic Respiratory Institute, Cleveland, Ohio
Preoperative Pulmonary Evaluation

Michael I. Polkey, PhD, FRCP
Professor of Respiratory Medicine, National Institute for Health Research, Respiratory Biomedical Research Unit, Royal Brompton and Harefield National Health Service Foundation Trust, National Heart and Lung Institute, Imperial College London, London, United Kingdom
Diseases of the Thoracic Cage and Respiratory Muscles

Jennifer Quint, MBBS, MRCP, PhD
Doctor, London School of Hygiene and Tropical Medicine, University College London, National Health Service Foundation Trust, London, United Kingdom
Pneumonia in the Non–HIV-Infected Immunocompromised Patient

Klaus F. Rabe, MD, PhD
Professor of Medicine, Department of Internal Medicine, Christian-Albrechts University, Kiel, Germany; Medical Director, Grosshansdorf Clinic, Grosshansdorf, Germany
Antiinflammatory Drugs

Michelle Ramsay, BSc, MRCP
Clinical Research Fellow in Respiratory Physiology, Department of Asthma, Allergy, and Respiratory Science, Division of Asthma and Lung Biology, King's College London; Lane Fox Respiratory Unit, St. Thomas' Hospital, Guy's and St. Thomas' National Health Service Foundation Trust, London, United Kingdom
Diseases of the Thoracic Cage and Respiratory Muscles

Felix Ratjen, MD, PhD, FRCPC
Professor, Department of Pediatrics, University of Toronto; Head, Division of Respiratory Medicine, H.E. Sellers Chair in Cystic Fibrosis, Hospital for Sick Children, Toronto, Canada
Cystic Fibrosis

M. Katayoon Rezaei, MD
Assistant Professor of Pathology, The George Washington University Medical Center, Washington, DC
Lung Cancer: Epidemiology, Surgical Pathology, and Molecular Biology

Seppo T. Rinne, MD, PhD
Senior Pulmonary Fellow, University of Washington, Seattle, Washington
Air Pollution

Bruce W.S. Robinson, MBBS, MD, FRACP, FRCP, DTM&H, FCCP
Professor of Medicine, University of Western Australia School of Medicine and Pharmacology; Consultant Respiratory Physician, Department of Respiratory Medicine; Sir Charles Gairdner Hospital; Director, National Centre for Asbestos Related Diseases, Nedlands, Australia
Malignant Pleural Mesothelioma

Josep Roca, MD
Servei de Pneumologia i Allèrgia Respiratòria, ICT, Departament de Medicina, Institut D'Investigacions Biomèdiques August Pi i Sunyer, Hospital Clínic, Universitat de Barcelona, Barcelona, Spain
Exercise Testing

Daniel Rodenstein, MD, PhD
Professor, Pneumology Department and Center for Sleep Medicine, Cliniques Universitaires Saint-Luc, Université Catholique de Louvain, Brussels, Belgium
Obesity Hypoventilation Syndrome

Jaime Rodríguez Rosado, MD
Pulmonologist, Department of Respiratory Medicine, Hospital Universitario Son Espases, Palma de Mallorca, Spain
Asthma: Epidemiology, Pathophysiology, and Risk Factors

Melissa L. Rosado-de-Christenson, MD, FACR
Clinical Professor of Radiology, University of Missouri–Kansas City; Section Chief, Thoracic Radiology, Department of Radiology, Saint Luke's Hospital of Kansas City, Kansas City, Missouri
Disorders of the Mediastinum

Cecile Rose, MD, MPH
Professor of Medicine, University of Colorado, Aurora; Occupational Medicine Program Director, National Jewish Health, Denver, Colorado
Extrinsic Allergic Alveolitis

Federico Fiorentino Rossi, MD
Pulmonologist, Department of Respiratory Medicine, Hospital Universitario Son Espases, Palma de Mallorca, Spain
Asthma: Epidemiology, Pathophysiology, and Risk Factors

Luis G. Ruiz, MD
Pulmonologist, Kaiser Permanente Mid Atlantic Medical Group, Washington, DC
Lung Transplantation

Glenis K. Scadding, MA, MD, FRCP
Honorary Consultant Physician, Department of Allergy and Medical Rhinology, Royal National Throat, Nose and Ear Hospital, London, United Kingdom
Upper Airway Disease: Rhinitis and Rhinosinusitis

Frank Schneider, MD
Assistant Professor of Pathology, Department of Pathology, University of Pittsburgh Medical Center, Pittsburgh, Pennsylvania
Inflammatory Bowel Disease

Arnold M. Schwartz, MD, Phd
Professor of Pathology and Surgery, The George Washington University Medical Center, Washington, DC
Lung Cancer: Epidemiology, Surgical Pathology, and Molecular Biology

Amen Sergew, MD
Instructor, Division of Pulmonary and Critical Care Medicine, National Jewish Health, University of Colorado, Aurora, Colorado
Idiopathic Pulmonary Fibrosis and Other Interstitial Lung Diseases

Sanjay Sethi, MD, FACP
Division Chief, Pulmonary, Critical Care, and Sleep Medicine, University at Buffalo, The State University of New York; Staff Physician, Pulmonary, Critical Care, and Sleep Medicine, VA Western New York Healthcare System, Buffalo, New York
Community-Acquired Pneumonia
Viral Pneumonia

Penny J. Shaw, MBBS, MRCP, DMRD, FRCR
Consultant Radiologist, Department of Imaging, University College London Hospital National Health Service Foundation Trust, London, United Kingdom
Percutaneous Biopsy Procedures: Techniques and Indications

Anita K. Simonds, MD, FRCP
Professor, NIHR Respiratory Disease Biomedical Research Unit, Royal Brompton and Harefield National Health Service Foundation Trust, London, United Kingdom
Scoliosis and Kyphoscoliosis

Arthur S. Slutsky, MD, PhD
Professor of Medicine, Surgery, and Biomedical Engineering, University of Toronto; Director, Interdepartmental Division of Critical Care Medicine, Department of Critical Care Medicine, St. Michael's Hospital, Keenan Research Center, Li Ka Shing Knowledge Institute of St. Michael's Hospital, Toronto, Canada
Invasive Mechanical Ventilation

Ulrich Specks, MD
Professor of Medicine, Mayo Clinic College of Medicine, Division of Pulmonary and Critical Care Medicine, Mayo Clinic, Rochester, Minnesota
Pulmonary Vasculitis and Hemorrhage

Diane C. Strollo, MD, FACR
Associate Professor of Radiology, Thoracic Radiology, University of Pittsburgh Medical Center, Pittsburgh, Pennsylvania
Disorders of the Mediastinum

Demet S. Sulemanji, MD
Instructor, Department of Anesthesia, Harvard University; Research Coordinator, Department of Respiratory Care, Massachusetts General Hospital, Boston, Massachusetts
Acute Respiratory Distress Syndrome

Lynn Tanoue, MD
Professor of Medicine, Section of Pulmonary and Critical Care Medicine; Vice-Chair for Clinical Affairs, Department of Internal Medicine, Yale School of Medicine, New Haven, Connecticut
Lung Cancer: Clinical Evaluation and Staging

Magali N. Taylor, BSc, MBBS, FRCR
Consultant Radiologist with Thoracic Subspecialty Interest, Department of Imaging, University College London Hospital National Health Service Foundation Trust, London, United Kingdom
Percutaneous Biopsy Procedures: Techniques and Indications

Antoni Torres, MD, PhD
Professor of Medicine, University of Barcelona; Director, Respiratory Intensive Care Unit, Thorax Institute, Hospital Clinic, Barcelona, Spain
Nosocomial Respiratory Infections

Elizabeth Tullis, MD, FRCP
Associate Professor of Medicine, Department of Respirology, University of Toronto; Head, Division of Respirology; Director, Adult Cystic Fibrosis Program, St. Michael's Hospital, Toronto, Canada
Cystic Fibrosis

Anil Vachani, MD
Assistant Professor of Medicine, Pulmonary, Allergy, and Critical Care Division, Perelman School of Medicine; Attending Physician, Philadelphia VA Medical Center, Philadelphia, Pennsylvania
Bronchoscopy

Olivier Vandenplas, MD, PhD
Professor of Medicine, CHU Mont-Godinne, Université Catholique de Louvain, Yvoir, Belgium
Occupational Asthma

Johan Vansteenkiste, MD, PhD
Professor of Internal Medicine, Catholic University; Deputy Clinical Head Pulmonology, University Hospital Gasthuisberg, Leuven, Belgium
Positron Emission Tomography Imaging

Theodoros Vassilakopoulos, MD, PhD
Associate Professor, Department of Critical Care and Pulmonary Services, University of Athens Medical School, Evangelismos Hospital, Athens, Greece
Control of Ventilation and Respiratory Muscles

Kristen L. Veraldi, MD, PhD, FCCP
Assistant Professor of Medicine, University of Pittsburgh School of Medicine, Division of Pulmonary, Allergy, and Critical Care Medicine, The Dorothy P. and Richard P. Simmons Center for Interstitial Lung Disease, University of Pittsburgh Medical Center, Pittsburgh, Pennsylvania
Inflammatory Bowel Disease

Jesús Villar, MD, PhD, FCCM
Chief, Group 29, CIBER de Enfermedades Respiratorias, Instituto de Salud Carlos III, Madrid, Spain; Director, Research Unit, Hospital Universitario Dr. Negrin, Las Palmas de Gran Canaria, Spain; Adjunct Scientist, Keenan Research Center, Li Ka Shing Knowledge Institute, St. Michael's Hospital, Toronto, Canada
Acute Respiratory Distress Syndrome

Peter D. Wagner, MD
Distinguished Professor of Medicine and Bioengineering, University of California–San Diego, La Jolla, California
Gas Exchange

Benoit Wallaert, MD
Professor of Medicine, Service de Pneumologie et Immuno-allergologie, Centre de Competence des Maladies Pulmonaires Rares, Hôpital Albert Calmette, CHRU at Universite de Lille 2, Lille, France
Silicosis and Coal Worker's Pneumoconiosis

Nicholas Walter, MD, MS
Instructor, Division of Pulmonary Sciences and Critical Care Medicine, University of Colorado, Aurora, Colorado
Tuberculosis and Nontuberculous Mycobacterial Infections

Jadwiga A. Wedzicha, MD, FRCP
Professor of Respiratory Medicine, Academic Unit of Respiratory Medicine, University College London Medical School, Royal Free Campus, London, United Kingdom
Management of Exacerbations in Chronic Obstructive Pulmonary Disease

Athol Wells, MBChB, MD, FRCP, FRCR
Professor of Respiratory Medicine, The Royal Brompton Hospital, Imperial College, London, United Kingdom
Approach to Diagnosis of Diffuse Lung Disease

Deborah Whitters, MBChB, MRCP(UK)
Clinical Research Fellow, Department of Lung Function and Sleep, The New Queen Elizabeth Hospital, Birmingham, United Kingdom
Bronchiectasis

Mark A. Woodhead, BSc, DM, FRCP
Clinical Professor of Respiratory Medicine, University of Manchester; Consultant in General and Respiratory Medicine, Department of Respiratory Medicine, Manchester Royal Infirmary, Manchester, United Kingdom
Approach to the Diagnosis of Pulmonary Infection

Joanne L. Wright, MD, FRCP(C)
Professor of Pathology, University of British Columbia; Pathologist, St. Paul's Hospital, Vancouver, Canada
Macro and Micro Structure of the Lung

John M. Wrightson, MB, BChir, MA, MRCP
Research Fellow in Pleural Diseases, Oxford Centre for Respiratory Medicine, Oxford University Hospitals National Health Service Trust; National Institute for Health Research, Oxford Biomedical Research Centre, Clinical Training Fellow, University of Oxford, Oxford, United Kingdom
Pleural Effusion, Empyema, and Pneumothorax

序

随着我国经济发展和社会人口老龄化程度持续加深，近 10 多年来，空气污染严重，吸烟人群的比例居高不下以及不断出现的突发性急性呼吸系统传染性疾病，使得呼吸系统疾病的患病率不断增高，成为我国人民健康最主要的危害之一。近年来，我国已增加了对呼吸系统疾病防治研究的重视程度及投入。呼吸系统疾病的防治，特别是慢性疾病，除了需要与基础医学、检验科、放射科、超声医学等多学科密切协作以外，还涉及呼吸系统以外的各器官系统。从广义上来说，呼吸科就是一个小内科，需要各科的共同努力，才能提高防治水平。

《临床呼吸病学》（第 4 版）作为一部经典的呼吸专业参考书，由当前呼吸病学领域的知名专家共同翻译。本书沿袭了前三版的传统风格，整合了全球呼吸病学最新知识系统。本书突出的特点有三个，第一，重视基础知识和诊断、治疗基本方法及技能（占了 1/3 篇幅），而具体的疾病诊治内容简明扼要，重点突出。掌握呼吸系统基本理论及诊治基本功对于呼吸专业医生是首要的。第二，重视多学科和呼吸系统疾病的关系，例如药物诱发性，即医源性呼吸系统疾病，上气道疾病（鼻炎与鼻窦炎），“特殊临床情况”如肝和胆道疾病、炎性肠病与呼吸系统疾病的关系。这些方面非常重要但又常被我们忽视。第三，在大多数章节内，均涉及了存在的争议、误区、缺陷及展望，这给我们医务工作者指出了努力的方向。

当然，我们在学习本书的同时也要结合中国呼吸系统疾病患者的特点，例如本书将真菌感染列入人类免疫缺陷病毒感染患者的肺部感染章节中，但在中国，不少免疫功能正常的人亦发生真菌（如隐球菌）感染。

本书的译者团队由我国一批活跃在呼吸病战线上的中青年学者及专家组成，他们具备先进的专业理念、丰富的临床实践经验，以及扎实的专业英语基本功，为本书的翻译工作投入了巨大的精力，并以严谨的态度对全书中的每句话都反复“琢磨”，力求正确、完美地展现原著。在此，我对邱晨教授、林江涛教授团队的勤奋、细致工作表示由衷的敬意和祝贺。

在中文版《临床呼吸病学》（第 4 版）即将出版之际，我愿本书能为广大呼吸专业同仁的临床诊疗工作带来极大裨益和提升。

中国工程院医药卫生学部院士

译者前言

近年来，受大气污染、吸烟、理化及生物因子吸入、人群结构老龄化等多因素影响，慢性阻塞性肺疾病、支气管哮喘、肺癌等多种呼吸系统疾病的发病率逐年增高。根据流行病学调查结果，呼吸系统疾病（不包括肺癌）高居我国城镇居民死亡病因的第4位，已成为危害人民健康的公共卫生问题。当前，国内详尽描述呼吸系统疾病的医学专著不多，且多侧重于呼吸系统疾病诊治的某个方面，如诊断技术、诊治进展、临床思维、典型病例分析等，很难全面囊括呼吸系统疾病的理论及临床知识。

《临床呼吸病学》（第4版）是呼吸系统疾病领域的一部学术巨著，由Stephen G. Spiro、Gerard A. Silvestri和Alvar Agustí三位教授主编，由享誉盛名的Elsevier出版社出版。该书第1版编纂工作始于1999年，作为呼吸病学的经典工具书已更新至现在的第4版。全书共15部分80章，将呼吸系统疾病分为12大类，分别是感染性疾病、呼吸内科急重症抢救、气道疾病、肺间质性疾病、肺血管疾病、血管炎和出血、睡眠呼吸障碍、胸壁疾病、肺部肿瘤、胸膜和纵隔疾病、胸外科手术、特殊临床情况下（如妊娠、炎性肠病等）的呼吸系统疾病等。该书从解剖学、病理生理学着手，深入浅出地阐述了几乎所有呼吸系统疾病的基础知识、临床诊断及治疗，内容大多源自各种疾病的指南或最新学科进展，但对于不同的学术观点也加以介绍，具有权威性、实用性、时效性，是呼吸系统疾病翔实、权威的专业参考书。该书自出版以来首次引进中国，适合呼吸科专业医师、内科医师、研究生、住院医师、实习医师在临床实践中参考使用。

本书的译者既有活跃在临床科研一线的中青年学者，又有参与我国呼吸系统疾病各类指南撰写的资深专家，对于呼吸系统疾病的诊疗具有丰富的临床经验。译者在认真通读原文、吸取原著精华的基础上，结合自己的工作体会，翻译校对了《临床呼吸病学》（第4版）。在翻译过程中，译者力求忠实于原著，尽可能做到“信、达、雅”。译著包含了原著各位作者的工作成果，在此谨向该书原作者致敬并表示真诚的感谢；北京大学医学出版社在该书的策划、组织、编写过程中给予了十分具体的指导，这种为作者、读者无私奉献的精神始终鼓励和鞭策着我们，在此致以最诚挚的谢意。

在本书翻译过程中，我们努力追踪学科最新发展，每个知识点力争找到英文原版出处，希望尽可能详细地阐述清楚，但由于学科发展十分迅速，且译者能力有限，对于原文中的某些论述理解不透，翻译不准甚至谬误之处，恳请各位读者不吝赐教，便于日后修订完善。在此，谨致以衷心的感谢！

邱 晨　林江涛

2017年11月21日于深圳

原著前言

《临床呼吸病学》第 1 ～ 3 版的成功令人深受鼓舞，现在我们又自豪地推出了该书的第 4 版。虽然我们对每版内容都会进行大幅度的更新，但保证该书兼顾呼吸病学基础知识和具体疾病一直是我们坚持的原则。

1999 年我们启动《临床呼吸病学》编写工作时，大家的初衷是编写一本涉及呼吸病学所有领域内容的著作。我们利用计算机制图和出版方面的非凡进展，将肺的解剖结构、生理与临床实践有机结合并详尽阐述。

在本版《临床呼吸病学》的编纂过程中，合作者 James Jett 教授和 Richard Albert 教授离开了我们的团队，新加入的 Alvar Agustí 教授和 Gerard Silvestri 教授带来了新的思路。后两位教授都是呼吸病学领域的佼佼者，在他们的帮助下，第 4 版内容发生了巨大变化。我们调整了超过 30% 的作者，以确保此版的内容是最新的。即使是相同的作者，也对既往的内容进行重新编写和订正。我们幸运地邀请到呼吸病学领域世界著名的顶级专家，他们积极地参与了编纂工作，并及时交上文稿。我们对他们的善意和责任感表示最衷心的感谢。

本书的主编一直认为呼吸生理在理解肺功能和疾病发生中具有非常重要的作用，因此，我们毫不犹豫地增加了此部分内容在书中的比重，邀请了这些领域中相应的领军人物编写这部分内容。肺结构、超声心动图、肥胖及其影响、良性肿瘤等章节的内容都是全新的，肺癌部分的内容也进行了较大的拓展。

本书的结构一直没有变化，前半部分内容主要是生理、宿主免疫、诊断技术及适应证和呼吸系统疾病的治疗原则。随后的内容则是进一步详细地阐述每一种呼吸系统疾病。本书无意提供所有的参考文献目录，但是每章内容后都总结了推荐阅读的文献清单。

《临床呼吸病学》（第 4 版）的读者是呼吸科实习医生、全科医生、呼吸治疗师和所有呼吸科医生。我们得到了 Elsevier 出版社再一次有力的支持，尤其是 Anne Snyder，她能从我们的角度出发，确保编写工作高效、按时完成。我们深深地感谢她的指导和及时的建议。

我们高兴地看到《临床呼吸病学》已成为专业人员的参考书，希望它能继续保持在呼吸病学专业书籍中的领先地位。我们享受编写这本书的过程，希望您也喜欢。

Stephen G. Spiro
Gerard A. Silvestri
Alvar Agustí
（邱 晨 史 菲 译）

目 录

第一部分　正常结构与功能

第1章　肺的宏观与微观结构*

Joanne L. Wright • Andrew M. Churg　著

（王凌伟　黄艳媚　王跃春　译）

肺的发育

正常功能的呼吸系统需要传导气道和血管系统的同步发育。有趣的是，驱动此过程的机制同样也适用于其他具有分支结构的器官系统，如肾和乳腺。肺的发育始于器官发生，可分为数个阶段，如表1-1所示。然而，学者们普遍认为各个阶段之间有相当多的信号级联反应是重叠的。

肺发育最早的阶段是胚胎期——器官形成期，持续约7周。28 d左右前肠腹侧壁长出初级肺芽。气管独立发育，由肺芽前方的前肠管发育而来。虽然最初前肠管还包括食管，但随后分成两部分，其中腹侧面形成气管，继而与肺芽相连。肺芽-气管区域的特征是表达Nkx2-1［也称为Titf1（甲状腺转录因子1）］。间质的信号蛋白质包括骨形态发生蛋白（bone morphogenetic proteins，BMPs）、头蛋白、成纤维细胞生长因子（fibroblast growth factors，FGFs）和Wnts，会影响肺的发育，某些蛋白缺乏会引起前肠分离失败，伴或不伴上皮细胞和间质的异常分化。初级肺芽形成过程中，维A酸对肺形态发生起重要作用。经典Wnt信号通路似乎在调节细胞增殖与分化及肺分支中发挥重要了作用。β-连环蛋白磷酸化因其随后的核转位和T细胞因子/淋巴增强因子（T cell factor/lymphoid enhancer factor，TCF/LEF）靶基因的活化而成为此通路不可分割的一部分。表观遗传学改变包括DNA或组蛋白的甲基化，可能会影响肺的发育进程。

前肠芽发育的同时启动血管发生。血管内皮生长因子（the vascular endothelial growth factor，VEGF）的信号级联反应是肺发育不可或缺的一部分，也是成熟血管的内皮细胞增殖和持久性维护所必需的。VEGF信号可能是Fgf信号通路的下游。

一般认为假腺期包括胚胎5～11周，此期肺的外观呈管状腺。肺芽的持续发育依赖于中胚层FGF10和内胚层FGF受体2（FGF2）的表达。肺的分支受Brl（Branchless）——一种FGF的配体调控，调控方式为Brl在一小群内胚层和中胚层细胞中的表达。发育相关基因决定上述细胞群的位置。此期涉及的信号网络复杂，存在显著影响形态发生的信号的反馈回路。

从小管期（胚胎16～26周）延伸至囊泡期（胚胎24～38周），内胚层分化形成Ⅰ型和Ⅱ型肺泡上皮细胞，并随着毛细血管重构、变得适应于Ⅰ型肺泡上皮细胞而形成气-血屏障。囊泡期的特征是形成肺泡的前体——囊泡。在这一时期，基质蛋白不仅可装配成为支架结构，也可作为生长蛋白如转化生长因子-β（transforming growth factor-β，TGF-β）的贮库。肺泡发育中涉及多条信号通路，其中Fgf通路似乎起着至关重要的作用。

产后期的特点是快速肺泡化和微血管成熟，肺泡表面积增加约20倍，数量从约5千万增加至3亿。新的肺泡源自于膈，含双重毛细血管网；或在成熟的膈中形成新的膈，从而诱导毛细血管网的生成。肌成纤维细胞、胶原蛋白和弹性纤维似乎是维持分隔所必需的，血小板衍生因子（platelet-derived growth factor，PDGF）亦不可缺少，而血管内皮生长因子对毛细血管的成熟和维持是必需的。

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* 本章附加内容可参见“专家专作（Expert Consult）”。