

# INDEX

## A

Acetylsalicylic acid, 230  
Acid-base balance, 40-42  
Acinetobacter pneumonia, 139  
Acquired immunodeficiency syndrome (AIDS), 69-73  
Adenomas, bronchial, 283, 304  
Adenopathy, hilar, 119  
ADH (antidiuretic hormone), 210, 318  
Aerophagia, 210  
AIDS (acquired immunodeficiency syndrome), 69-73  
Allergic alveolitis, 100  
Alveolar macrophages, 19  
Alveolar vessels, 207  
Alveolitis, allergic, 100  
Amantadine, 238  
Amiodarone, 74-75  
Antibiotic barrier, blood-alveolar, 261  
Antibiotic levels in respiratory tract, 265-267  
Antibiotic penetration  
  factors influencing, 263  
  inflammation-dependent, 262  
Antibiotic therapy, 314  
  of pulmonary infections, 255-274  
Antibiotics  
  concentration ratios of, 263  
  intravenous, 314  
  “kill ratios” of, 259  
Antidiuretic hormone (ADH), 210, 318

Antiinflammatory agents, steroidal and nonsteroidal, 229-232  
Aphorisms, pneumonia, 136-142  
ARDS (adult respiratory distress syndrome), 56, 188-194, 231-232  
Aretaeus, 2  
Arterial unsaturation, 200  
Arthritis, rheumatoid, 306-307  
Asbestosis, 280  
Aspergillomas, 141  
Aspergillus pneumonia, 137  
Asphyxiation, 81  
Aspiration injury, 78-79  
Aspiration pneumonia, 81-87  
Asplenia, 109, 138  
Atypical pneumonia, 132, 133  
Auenbrugger, Leopold, 3-4  
Auscultation, 167-169  
Azathioprine, 301

## B

B cell dysfunction, 21  
Bacteria, differential diagnosis of, 130-131  
Bacterial infections, 67  
Bacterial killing, 20  
BAL (bronchoalveolar lavage), 149  
Basophilia, 124  
Black death, 9  
Blastomycosis, 135, 142  
Bleomycin, 74  
Blood-alveolar antibiotic barrier, 261  
Blood cultures, 124, 152

- Bone marrow transplants, 66
- Branhamella catarrhalis, 131
- Breath sounds, 168
- Breathing, work of, 30-35
- Bronchial adenomas, 283, 304
- Bronchial mucus, 227-228
- Bronchial vasculature, 208
- Bronchial washings, 149
- Bronchoalveolar lavage (BAL), 149
- Bronchoconstriction, 17-18
- Bronchogenic carcinoma, 279
- Bronchophonism, 5
- Bronchophony, 168
- Bronchopneumonia, 172
- Bronchoscopy, 148-149
- Brownian motion, 17
- Bubonic plague, 9
- Bulging fissures sign, 122
- Busulfan, 301
  
- C**
- C3 deficiency, 22
- C5 deficiency, 23
- C-fiber receptors, 44-46
- Caloric repletion, 215, 223
- Cancer chemotherapy, pulmonary infiltrates and, 301
- Candida pneumonia, 138
- Carbon dioxide retention, 39
- Carcinoma, 299
  - bronchogenic, 279
- Carcinomatous effusions, 304
- Cavitary disease, 284-285
- Cavitary lesions, 118
- CD4 cells, 70
- Cellular immunity, 221-222
- Chemoprophylaxis, 238-240
- Chemotaxis, 20
- Chest film
  - clues to pneumonia on, 114-124
  - normal, 277-278
  - pitfalls in diagnosis with, 293-296
- Chest nodules, 120, 122, 123
- Chest pain, pleuritic, 170-171
- Chest physiotherapy, 224-225
- Chest radiographs, see Chest film
- Chest radiography, 106, 172-173
- Chlamydia pneumoniae, 133
- Chlorambucil, 301
- Ciliary dysfunction, 18-19
- Cocaine, 81
- Coccidioidomycosis, 310
- Collagen, 93
- Collagen-vascular disease pitfalls in diagnosis, 305-307
- Collagen-vascular disorders, 282
- Community-acquired pneumonia, 48-52
- Complement, 22
- Complement disorder, 22-23
- Compliance, lung, 28-29
- Computed tomography (CT), 173-174
- Conjunctivitis, 114
- Continuous positive airway pressure (CPAP), 61
- Contributors, xv
- COPD (chronic obstructive pulmonary disease), 61
- Corticosteroids, 231-232
- Corvisart, Jean Nicolas, 4
- Cough, 158-161
  - clues to causes of, 279
  - therapy for, 279
- Cough receptors, 159
- Cough reflex, 17, 160
- CPAP (continuous positive airway pressure), 61
- Crackles, 168-169
- Crepitus rattle, 4-5
- Cryptococcal pneumonia, 142
- CT (computed tomography), 173-174
- Cyanosis, 200
- Cyclophosphamide, 301
- Cytokines, 162, 191
- Cytomegalovirus pneumonia, 239
- Cytosine arabinoside, 301

**D**

- Da Vinci, Leonardo, 3
- DAH (diffuse pulmonary alveolar hemorrhage), 66
- Dapsone, 239
- Dead-space ventilation, 39
- Degranulation, 20
- Dehydration, 232-235
- Diagnosis of pneumonia, 146, 288
  - laboratory clues to, 106-142
  - laboratory procedures for, 146
  - laboratory stains useful for, 147
  - pitfalls in, see Pitfalls in diagnosis of pneumonia
  - serum tests in, 125
  - special tests for, 152-153
  - techniques for, 145-153
- Diaphragmatic muscle strength, 215-216, 217, 218
- Diffusing capacity, 40
- Discharge strategies for patients with pneumonia, 313-318
- Dressler syndrome, 306
- Drug abuse, pulmonary manifestations of, 79-81
- Drug reactions, pulmonary infiltrates and, 300-301
- Drugs, in pulmonary injury, 73-76
- Dual ventilators, 206
- Duty cycle, inspiratory, 32
- Dyspnea, 30, 156-157
  - severely progressive, 109

**E**

- Ear pain, 109
- EBV (Epstein-Barr virus), 141
- “Eggshell calcification” of hilar nodes, 295
- Egophony, 169
- Elastin, 94
- Elderly patients
  - functional changes in, 95-99
  - gas exchange in, 97-98
  - host-defense mechanisms in, 99-100

- respiratory systems of, 91-100
- structural changes in, 91-94
- ELISA (enzyme-linked immunosorbent assay), 297
- Emphysema, 93
- Empiric therapy, 268-269, 270-271
- Empyema, 184-186
- Endobronchial disease, 27
- Endotoxin, 162
- Enteric feedings, 223
- Enzyme-linked immunosorbent assay (ELISA), 297
- Eosinophilia, 107, 124
- Eosinophilic pulmonary infiltrates, 303
- Epstein-Barr virus (EBV), 141
- Erythema multiforme, 114
- Erythrocyte sedimentation rate (ESR), 296, 297
- Escherichia coli, 130, 140
- ESR (erythrocyte sedimentation rate), 296, 297
- Etiologic diagnosis, 107-108

**F**

- False-positive tuberculin skin tests, 140
- Fever, 161-166
  - acute phase, 164
  - cardiovascular effects of, 164
  - plateau phase, 164-165
  - recovery phase, 165-166
- Fleming, Alexander, 11
- Fluconazole, 239
- Fluid therapy, 85
  - parenteral, 232-235
- Focal infiltrates, 115, 278-280
- Fort Bragg fever, 12
- Functional residual capacity (FRC), 59-61
- Fungal pitfalls in diagnosis, 310
- Fungal pneumonia, 62

**G**

- Galen, Claudius, 1

Gallium scans, 175-176  
 Ganciclovir, 239  
 Gas exchange, 35-40  
   in elderly, 97-98  
 Gastroesophageal reflux (GER),  
   277-278  
 Goblet cells, 18  
 Gram-stained sputum, 126-127  
 Granulomatous pneumonia, 135  
 Group A streptococci, 130

## H

Haldane effect, 42  
 Harvey, William, 3  
 Heart-lung transplantation, 65  
 Hemodynamics, 42-46, 207-210  
 Hemophilus influenzae, 130, 137  
 Hemoptysis, 140  
 Hepatization, degree of, 5  
 Heroin abuse, 80-81  
 Herpes labialis, 138  
 Hilar adenopathy, 119  
 Hilar enlargement, 302  
 Hilar nodes, "eggshell calcification"  
   of, 295  
 Hippocrates, 1  
 Histoplasmosis, 132, 135  
   clinical spectrum of, 134  
 Historical features, 288-292  
 HIV (human immunodeficiency  
   virus), 69-73  
 Hoarseness clues, 112  
 Honeycomb pattern, lung, 106  
 Host, immunocompromised, 61-69  
 Host-defense mechanisms  
   in elderly, 99-100  
   lung, 16  
 Human immunodeficiency virus  
   (HIV), 69-73  
 Humoral deficiencies, 21  
 Humoral immunity, 221-222  
 Hypersensitivity pneumonia, 92,  
   100-101  
 Hypertonic saline, 229

Hyperventilation, with hypocapnia,  
   40-42  
 Hypocapnia, hyperventilation with,  
   40-42  
 Hypohydration, 232-235  
 Hypostatic pneumonia, 59  
 Hypothermia, 165  
 Hypoxemia, 35-36

## I

Immotile cilia syndrome, 18  
 Immune globulin, intravenous, 239-  
   240  
 Immunity, 221-222  
 Immunocompromised host, 61-69  
 Immunoglobulin deficiency, 21-22  
 Immunoglobulin E, 22  
 Impaction mechanism, 15-16  
 IMV (intermittent mandatory venti-  
   lation), 205  
 Incentive spirometry (IS), 61  
 Indium scans, 175  
 Indomethacin, 230  
 Inflammation-dependent antibiotic  
   penetration, 262  
 Influenza, 9-11  
 Influenza vaccine, 237-238  
 Inhalation injury, 77-78  
 Inspiratory flow rates, 32-33  
 Intermittent mandatory ventilation  
   (IMV), 205  
 Interstitial pneumonia, 172  
 Intraesophageal pressure measure-  
   ment, 27-28  
 Intravenous antibiotics, 314  
 IPPB (positive-pressure breathing)  
   instruments, 61  
 IS (incentive spirometry), 61

## J

J receptors, 44-46  
 J reflex, 45

**K**

Kartagener syndrome, 18  
 “Kill ratios” of antibiotics, 259  
 Klebsiella, 131  
 Koch, Robert, 8-9

**L**

Laboratory tests, pitfalls in diagnosis  
 with, 296-299  
 Laennec, Rene Theophile  
 Hyacinthe, 4  
 Laryngeal edema, 213  
 Legionella pneumophila, 11-13  
 Legionnaires’ disease, 133  
 Letulle, Maurice, 4  
 Leukemic patients, 63-65  
 Leukocyte count, 166-167  
 Leukopenia, 111, 124  
 Liver function tests, 124  
 Lobar inflammation, 44  
 Lobar pneumonia, 172  
 Lung  
 honeycomb pattern, 106  
 host defense mechanisms, 16  
 Lung abscess, 182-184  
 Lung biopsy, open, 151-152  
 Lung capacity, total, 26-27  
 Lung compliance, 28-29  
 Lung expansion devices, 225-226  
 Lung function, impaired, 26  
 Lung injury, toxic, 73-77  
 Lung surfactant, 26  
 Lung transplantation, 66  
 Lung volume  
 dynamic, 97  
 static, 95-97  
 Lung zone predilections, 117  
 Lupus effusions, 306  
 Lymphomas, 304

**M**

McDade, Joseph, 13  
 Macrophages, alveolar, 19  
 Magnetic resonance  
 imaging (MRI), 176

Malignant pleural effusions, 304  
 Malnutrition, 221-222  
 Malpighi, Marcello, 3  
 Measles pneumonia, 141  
 Mechanical ventilation, 205-207  
 Mediastinal disease, 285, 286  
 Mendelson syndrome, 82, 90  
 Meningococcal pneumonia, 140  
 Metastases, 304  
 Meteorism, 210  
 Methotrexate, 301  
 Mimics, pitfalls in diagnosis with,  
 299-302  
 Mitral stenosis, 289  
 Monitoring, ventilatory, 210-211  
 Monocytosis, 124  
 Morbidity and mortality  
 adult respiratory distress  
 syndrome, 244-249  
 community-acquired pneumonia,  
 241-242  
 nosocomial pneumonia, 242-244  
 Pneumocystis carinii pneumonia,  
 244  
 MRI (magnetic resonance imaging),  
 176  
 Mucin structure, 227-228  
 Mucociliary dysfunction, 18-19  
 Mucokinesis, 228-229  
 Mucology, 227-229  
 Mucolytics, 228  
 Mucous plugging, 18  
 Muscle strength, diaphragmatic,  
 215-216, 217, 218  
 Mycoplasma pneumonia, 133

**N**

Nasal cultures, 137  
 Nasopharynx, 15-16  
 Nasotracheal suction, 147  
 Necrotizing pneumonia, 182-183  
 Neoplastic pitfalls in diagnosis, 302,  
 304-305  
 Neurologic dysfunction, 316-317  
 Neutropenia, chronic idiopathic, 66

Neutrophils, 19-20  
 Noninfectious mimics of pneumonia, 289  
 Nonsteroidal antiinflammatory agents, 229-232  
 Nosocomial pneumonia, 52-57, 136  
 Nuclear radiography, 174-176  
 Nutritional repletion, 215, 223

## O

Obstructive pulmonary disease, chronic (COPD), 61  
 Obstructive sleep apnea (OSA), 61  
 Open lung biopsy, 151-152  
 Opsonins, 20  
 OSA (obstructive sleep apnea), 61  
 Ovoid densities, 120  
 Oxygen, 199-200  
   administration of, 200-201  
   availability of, 201-203  
   delivery of, 203  
   derived exchanged indices, 211  
   distribution of, 203-205

## P

Pain, pleuritic chest, 170-171  
 Parainfluenza, 239  
 Parapneumonic effusion, 185  
 Parenchymal infiltrates, 280-282  
 Parenchymal nodules, solitary and multiple, 282-284  
 Parenteral fluid therapy, 232-235  
 Parenteral nutrition, total (TPN), 223  
 Pasteur, Louis, 7-8  
 PCP (Pneumocystis carinii pneumonia), 69-71  
 Pectoriloquism, 5  
 PEEP (positive end-expiratory pressure), 205-207, 209  
 Penicillin, 11  
 Pentamidine, 239  
 Peripheral circulation, 209-210  
 Pertussis, 140  
 Phagocytic disorders, 19-21  
 Pharmacokinetic considerations, 258-268

Physical examination, 292-293  
 Physical therapy, 224-226  
 Pitfalls in diagnosis of pneumonia, 288-311  
   in chest film, 293-296  
   in collagen-vascular disease, 305-307  
   fungal, 310  
   in history, 288-292  
   in laboratory tests, 296-299  
   mimics and, 299-302  
   miscellaneous, 307-308  
   neoplastic, 302, 304-305  
   in physical diagnosis, 292-293  
   tuberculosis, 308-310  
 Plague, bubonic, 9  
 Pleural complications, 29  
 Pleural crackle, 169  
 Pleural disease, 285-287  
 Pleural effusion fluid, 127-129  
 Pleural effusions, 119-122  
   as complication of pneumonia, 176-180  
   malignant, 304  
 Pleural reaction, 285  
 Pleurisy, 170  
 Pleuritic chest pain, 170-171  
 Pneumatoceles, 309  
 Pneumococcal classification, 10-11  
 Pneumococcal vaccine, 138, 236-237  
 Pneumoconiosis, 109  
 Pneumocystis carinii pneumonia (PCP), 69-71  
 Pneumomediastinum, 181-182  
 Pneumonia  
   aphorisms, 136-142  
   aspiration, 81-87  
   atypical, 132, 133  
   causes of, 15-23  
   chest film clues to, 114-124  
   clinical presentation of, 156-167  
   community-acquired, 48-52  
   complicating pregnancy, 87-91  
   complications of, 176-186  
   defined, 106

- delayed resolution, 186-188
  - diagnosis of, see Diagnosis of pneumonia
  - differential diagnosis of bacteria in, 130-131
  - discharge strategies for patients with, 313-318
  - fungal, 62
  - granulomatous, 135
  - historical aspects of, 1-13
  - historical clues to, 108-113
  - hypersensitivity, 92, 100-101
  - hypostatic, 59
  - in immunocompromised host, 61-69
  - infections and, 15-23
    - without infiltrates, 295
  - modern investigation and, 11-13
  - morbidity and mortality, see Morbidity and mortality
  - noninfectious mimics of, 289
  - nosocomial, 52-57, 136
  - pathogenesis of, 48-101
  - pathophysiology of, 26-46
  - physical diagnosis clues to, 110, 114
  - physical examination for, 167-169
  - Pneumocystis carinii*, 69-71
    - postoperative, 57-61
    - in preantibiotic era, 9-11
    - presentation of, 156-194
    - prophylaxis and prevention, 236-241
    - pulmonary disorders mimicking, 277-287
    - relapsing or recurrent, 188
    - subacute or chronic, 132
    - treatment, 199-135
    - varicella, 67-68
    - viral, 257
  - Pneumonitis, radiation, 76-77
  - Pneumothorax, 139, 180-182
  - Poiseuille's law, 31
  - Polyacrylamide, 79
  - Pontiac fever, 13
  - Positive end-expiratory pressure (PEEP), 205-207, 209
  - Positive-pressure breathing (IPPB) instruments, 61
  - Postoperative pneumonia, 57-61
  - Postpneumonic empyema, 186
  - Postpulmonary shunt, 37
  - Pregnancy, pneumonia complicating, 87-91
  - Prodigiosin, 140
  - Proteus pneumoniae*, 140
  - Pseudo-hemoptysis, 140
  - Pseudolymphoma, 302
  - Pseudomonas pneumoniae*, 140
  - Psittacosis, 133, 141
  - Pulmonary alveolar hemorrhage, diffuse (DAH), 66
  - Pulmonary circulation, 207-208
  - Pulmonary disorders, mimicking pneumonia, 277-287
  - Pulmonary edema, 282
  - Pulmonary function, 316
    - mechanical abnormalities in, 26-30
  - Pulmonary infections, antibiotic therapy of, 255-274
  - Pulmonary infiltrates
    - cancer chemotherapy and, 301
    - drug reactions and, 300-301
    - eosinophilic, 303
    - location of, 114
  - Pulmonary nodules, 120, 122, 123
  - Pulmonary science, vii
  - Pulmonary sequestration, 137
  - Pulmonary vessels, small, 37
  - Pyrogens, 161-162
- Q**
- Q fever, 133
- R**
- Radiation pneumonitis, 76-77, 281
  - Radiographs, normal chest, 277-278
  - Radiologic studies, 171-176

Rattle, crepitus, 4-5  
 Reflex bronchoconstriction, 17-18  
 Renal insufficiency, 318  
 Repletion, nutritional, 215, 223  
 Respiration, regulation of, in elderly, 99  
 Respiratory burst, 21  
 Respiratory distress syndrome, adult (ARDS), 56, 188-194, 231-232  
 Respiratory function, 215-221  
 Respiratory infections, 15  
 Respiratory muscle strength, 32-33  
 Respiratory pattern, 30-35  
 Respiratory syncytial virus (RSV), 141  
 Respiratory tract, antibiotic levels in, 265-267  
 Rhazes, 2  
 Rheumatoid arthritis, 306-307  
 Rheumatoid nodules, 306  
 Ribavirin, 239  
 Rimantadine, 238  
 Roentgenogram, chest, see Chest film  
 Rounded pneumonia, 173  
 RSV (respiratory syncytial virus), 141

**S**

Saline, hypertonic, 229  
 Sarcoidosis, 282  
 Sedimentation mechanism, 16-17  
 Serologic testing for fungal pneumonia, 153  
 Serratia pneumonia, 139  
 Silicosis, 109  
 Skin testing for fungal pneumonia, 152  
 Skoda, Josef, 6-7  
 Skodaic resonance, 7  
 Smoke inhalation, 77-78  
 Sneezing, 17  
 Specific therapy, 269, 272-273  
 Sputum, Gram-stained, 126-127  
 Sputum samples, 125-127, 145-147

Squamous cell carcinoma, 284  
 Staphylococcus aureus, 130, 137  
 Steroid therapy, 85  
 Steroidal antiinflammatory agents, 229-232  
 Streptococci, Group A, 130  
 Streptococcus pneumoniae, 48-52, 130, 137  
 Sulfonamides, 11  
 Swallowing abnormalities, 317  
 Symptom clues, 111-112  
 Syndromic diagnosis, 106-108

**T**

T-helper lymphocytes, 69  
 Tachycardia, 317  
 Tachypnea, 40-41  
 Tatlock, Hugh, 12  
 Thallium scans, 176  
 Thermogenesis, 161-162  
 Thoracentesis, 151  
 TMP-SMX (trimethoprim-sulfamethoxazole), 239  
 TNA (transthoracic needle aspiration), 150-151  
 Tomography, computed (CT), 173-174  
 Torulopsis glabrata pneumonia, 138  
 Toxic lung injury, 73-77  
 Toxoplasmosis, 142  
 TPN (total parenteral nutrition), 223  
 Tracheal intubation, 206-207  
 Transbronchial biopsy, 150  
 Transbronchial needle aspiration, 150  
 Transthoracic needle aspiration (TNA), 150-151  
 Transtracheal aspiration, 147-148  
 Trimethoprim-sulfamethoxazole (TMP-SMX), 239  
 Tuberculin skin tests, false-positive, 140  
 Tuberculosis, 69-70, 135  
 Tuberculosis pitfalls in diagnosis, 308-310



Tularemia, 133, 310

TWAR agent, 290

## **U**

Ultrasonography, 174

Urinary antigen tests, 297-298

## **V**

Vaccine

influenza, 237-238

pneumococcal, 138, 236-237

Varicella pneumonia, 67-68

Ventilation

deadspace, 39

intermittent mandatory (IMV),  
205

mechanical, 205-207

Ventilators, dual, 206

Ventilatory control, 216-219

Ventilatory failure, acute, 220-221

Ventilatory monitoring, 210-211

Ventilatory weaning, 211-215

Ventricular function, 208-209

Vesalius, Andreas, 3

Viral infections, 67

Viral pneumonia, 257

Vital capacity, 26-27

## **W**

WBC (white blood cell) count, 166-  
167

Weaning, ventilatory, 211-215

White blood cell (WBC) count, 166-  
167

## **Z**

Zoonotic clues, 110