

A

- ABPA. *See* Allergic bronchopulmonary aspergillosis (ABPA)
- Acetylcholine, 61
- Acetylcysteine
 - children, 88–89
- Acupuncture, 182–184
 - children, 100
- Acute asthma
 - children, 96f
- Acute bronchospasm
 - intraoperative management of, 321–322
- ADA. *See* Americans with Disabilities Act (ADA)
- Additives
 - in bronchodilator solutions, 269
- Adherence
 - minorities, 375
- Adhesion molecules, 101
- Adrenergic activity
 - restoration, 19–20
- Adult-onset asthma, 25, 113–138
 - defined, 115–116
 - diagnosis, 128–129
 - drug-induced, 121
 - epidemiology, 116, 117t–118t
 - genetics, 124–128, 131–132
 - immunology, 126–127
 - management, 134–135
 - prevalence, 5
 - risk, 12–13, 15f
 - risk factors, 119–125
 - safety, 135–138
 - syndrome, 126f
 - treatment, 132–135
- Aging. *See* Elderly
- AHR. *See* Airway hyperresponsiveness (AHR)
- Air pollutants
 - children, 71
- Air pollution
 - outdoor, 231
- Airway conductance (Gaw), 53
- Airway hyperresponsiveness (AHR), 15, 114
 - enhancement, 232
- Airway management, 315–317
- Airway obstruction
 - severe asthma, 168
- Airway resistance (Raw), 53
- Albuterol
 - adverse response to, 156
 - children, 84, 89
 - emergency department, 149–150, 150
 - exercise-induced asthma, 245
 - status asthmaticus, 97
 - structure of, 81f
- Allergens, 32–38
 - avoidance, 90f
 - children, 89–90
 - children, 71, 72
 - environmental, 33
 - injection immunotherapy
 - adult-onset asthma, 132
 - outdoor, 90
- Allergic asthma
 - diagnosis, 31–41
 - triggers, 33t
- Allergic bronchopulmonary aspergillosis (ABPA), 279–290
 - antifungal treatment, 286t
 - chest radiographs, 284f–285f
 - classification, 286–287, 287t
 - clinical manifestations, 283–285
 - defined, 280–282
 - diagnosis, 282–286, 283t
 - mimics, 287–288
 - radiology, 285–286
 - serology, 286
 - treatment, 288–290
- Allergic bronchopulmonary mycosis, 281t
- Allergic disease, 10–11, 14
 - laboratory measurement, 40t
- Allergic rhinitis
 - children, 73
- Allergy. *See also* Food, allergy
 - animal, 35–36
 - history, 41t
 - latex, 303–304
 - skin tests
 - preventing errors, 39–40
 - tests, 37t

- Alternaria, 33
 American Society of Anesthesiology (ASA)
 physical status guidelines, 314t
 Americans with Disabilities Act (ADA), 389–390
 Aminophylline
 children, 87
 emergency department, 150–151
 severe asthma, 170
 Amphetamines, 332
 respiratory tract complications, 329t
 Analgesia
 lumbar epidural, 216
 postoperative, 324t
 Anesthesia, 311–324
 emergency intervention, 323–324
 general, 314–317
 inhaled, 318
 intravenous induction, 317–318
 mask, 315
 preinduction, 317–318
 preoperative evaluation, 313t
 regional, 314–315, 319–321
 risks of, 312t
 special groups for, 322t
 Angel dust, 336–337
 Animal allergy, 35–36
 Anticholinergics
 adverse effects, 76t
 children, 84
 Antifungals
 allergic bronchopulmonary aspergillosis, 289
 Antigenic determinants, 72t
 Antihistamines
 children, 86
 Anti-immunoglobulin E
 adverse effects, 76t
 Anti-inflammatory agents
 pregnancy, 210–211
 Antileukotrienes
 adult-onset asthma, 132
 Antioxidants, 187–190
 Arterial blood gases, 55, 58t
 emergency department, 145
 measurements, 57–58
 severe asthma, 168
 ASA. *See* American Society of Anesthesiology (ASA); Aspirin-sensitive asthma (ASA)
 Aspergilloma
 pulmonary, 281
 Aspergillosis. *See also* Allergic bronchopulmonary aspergillosis (ABPA)
 chronic necrotizing pulmonary, 282
Aspergillus fumigatus, 230
 Aspirin
 desensitization, 273–274
 diagnostic challenge, 272t
 sensitivity
 drugs tolerated with, 273t
 Aspirin-induced asthma, 121–122, 270–274
 avoidance, 272–273
 diagnosis, 271–272
 pathogenesis, 270
 patient evaluation, 271–272
 patient history, 271
 physical examination, 271
 prevalence, 270
 treatment, 272
 Aspirin-sensitive asthma (ASA), 261
 Asthma. *See also* Adult-onset asthma; Aspirin-induced asthma; Exercise-induced asthma (EIA); Fatal asthma; Food, induced asthma; Severe asthma
 action plans, 104f
 children, 91, 92f
 economic implications, 101–104
 acute
 children, 96f
 allergic
 diagnosis, 31–41
 triggers, 33t
 care gaps, 137–138
 characteristics, 15–26
 chronic, 61f
 and cocaine, 330–331
 epidemiology, 119f
 food additive-induced
 differential diagnosis, 262t
 historical perspective, 15–26
 near-fatal
 pathophysiology, 166–167
 origins, 3–15
 pathogenesis, 16–17, 16t
 prevalence, 5–8
 prevention, 67t
 relapse, 14–15
 risk, 15f
 risk, 8–15
 step classification, 69
 symptoms, 16

- Asthma late-onset, 115
- Athletes, 241–242
- Atopic dermatitis, 10
- Atopy, 9, 14
 - adult-onset asthma, 119
- Atracurium, 318
- Atrovent
 - adverse response to, 156–157
 - children, 84
 - emergency department, 150, 152
 - pregnancy, 212
- Attitude
 - minorities, 375
- Atypical bacterial pneumonia, 228
- Autoinhalers, 78t
- Autonomic dysregulation, 16
- B**
- β -Adrenergic agonists
 - structure of, 81f
- β -Adrenergic blockers, 17
- β -Adrenergic Response by Genotype (BARGE) Study, 126
- β Agonists
 - adverse effects, 76t
 - children, 84
 - safety, 135–136
- β -2 Agonists
 - long-acting
 - pregnancy, 210
 - short-acting
 - pregnancy, 210
- β -Blockade theory, 17–20, 18t
- β 1-Blockers
 - safety, 137
- Bacille Calmette Guerin (BCG), 224
- Bacterial pneumonia
 - atypical, 228
- Barbiturates, 317
- BARGE, β -Adrenergic Response by Genotype (BARGE) Study
- BAY-7195
 - children, 82
- BCG. *See* Bacille Calmette Guerin (BCG)
- Beclomethasone dipropionate
 - children, 75t
- Behavioral Risk Factor Surveillance System (BRFSS), 5, 13, 32
- Benzoates, 268–269
- Benzodiazepines, 317
- Benzoic acid, 268–269
- Betamethasone
 - children, 86t
- BHR. *See* Bronchial hyperresponsiveness (BHR)
- Bier block, 320
- Bitolterol
 - structure of, 81f
- Blatella germanica*, 33
- Body plethysmograph, 53
- Bordetella pertussis*, 18, 223
- Botanicals, 193–196
 - adverse effects, 196t
 - double-blind, placebo-controlled randomized controlled trials, 194t–195t
 - safety, 196
- Brachial plexus block, 319–320
- Breast-feeding, 217
- Breathing
 - exercises, 185–187
 - sounds
 - differential diagnosis, 69t
- BRFSS. *See* Behavioral Risk Factor Surveillance System (BRFSS)
- Bronchial hyperresponsiveness (BHR), 11, 13–14, 16–17
 - respiratory infection, 19
- Bronchitis
 - chronic
 - epidemiology, 119f
- Bronchoconstriction, 16
- Bronchodilators
 - determining response, 59–60
 - inhaled
 - children, 85t
 - long-acting
 - children, 80
 - nebulized
 - children, 85t
 - perioperative, 322–323
 - selection, 59
 - severe asthma, 169
 - short-acting
 - children, 84–85
 - spirometric response after, 60t
 - status asthmaticus, 99
- Bronchoprovocation challenge testing, 60–62
- Bronchospasm
 - acute
 - intraoperative management of, 321–322

- exercise-induced, 240
 - pathophysiology, 239t
- laboratory indications for hospitalization
 - during, 62
- Budesonide
 - children, 75t
- Butylated hydroxyanisole, 269
- Butylated hydroxytoluene, 269
- C
- Calcitonin gene-related peptide (CGRP), 240
- California
 - ethnic data, 369–372
 - mortality, 370f
 - prevalence, 370f, 371f, 372f
- California Health Interview Survey of 2001 (CHIS), 369–372
- CAM. *See* Complementary and alternative medicine (CAM)
- Camps, 349
- Cannabis sativa*, 334
- Carboxymethylcysteine
 - children, 88–89
- Carotenoids, 188
- Cats, 35–36
- CDC. *See* Centers for Disease Control and Prevention (CDC)
- Cell-signaling pathways, 101
- Centers for Disease Control and Prevention (CDC), 5–7
- Cetirizine
 - children, 86
- CFC. *See* Chlorofluorocarbons (CFC) inhalers
- CGRP. *See* Calcitonin gene-related peptide (CGRP)
- Chemokines, 101
- Chest auscultation
 - emergency department, 144
- Chest radiographs
 - emergency department, 148
 - severe asthma, 168
- Childhood Asthma Prevention Study, 252
- Children
 - acupuncture, 100
 - acute asthma, 96f
 - air pollutants, 71
 - albuterol, 84
 - allergen avoidance, 89–90
 - allergens, 71
 - allergic rhinitis, 73
 - aminophylline, 87
 - anesthesia, 322t
 - anticholinergics, 84
 - antihistamines, 86
 - asthma action plans, 91
 - asthma development risk, 8–12, 12f
 - asthma prevalence, 5–7, 9f
 - asthma treatment, 65–104
 - ancillary, 68t
 - goals, 66–68, 67t
 - β-Agonists, 84
 - BAY-7195, 82
 - beclomethasone dipropionate, 75t
 - betamethasone, 86t
 - budesonide, 75t
 - cetirizine, 86
 - controller medications, 74–77
 - cortisone, 86t
 - cromolyn, 88
 - cytokines, 100–101
 - desloratadine, 86
 - dexamethasone, 86t
 - emergency medications, 98t
 - endotracheal tubes, 98t
 - environmental tobacco smoke, 71
 - exercise-induced asthma, 73
 - fexofenadine, 86
 - flunisolide, 75t
 - fluticasone propionate, 75t
 - food allergy, 72
 - formaldehyde, 71
 - formoterol, 80
 - genleuton, 82
 - herbal medications, 100
 - hydrocortisone, 86t
 - immunotherapy, 91–93
 - inhaled bronchodilators, 85t
 - inhaled corticosteroids, 74–77
 - inhaler techniques, 77–80, 79f–80f
 - ipratropium bromide, 84
 - irritants, 71
 - issues, 25
 - leukotriene pathway modifiers, 81–84
 - levalbuterol, 84
 - long-acting bronchodilators, 80
 - loratadine, 86
 - maintenance therapy, 68–95
 - methylprednisolone, 86t

- monoclonal anti-IgE, 83–84
 - montelukast, 82
 - mucolytics, 88–89
 - N*-acetylcysteine, 88–89
 - nebulized bronchodilators, 85t
 - nedocromil sodium, 88
 - new medications, 100
 - nitric oxide, 71
 - nonpharmacological treatment, 89–90
 - omalizumab, 83–84, 83t
 - oral steroids, 86
 - paramethasone, 86t
 - parenteral steroids, 86
 - peak flow meters, 91
 - pharmacological options, 74–89
 - pranlukast, 82
 - prednisolone, 86
 - prednisone, 86
 - prognosis, 100–101
 - reliever medications, 84–86
 - respiratory syncytial virus, 72–73
 - salmeterol xinafoate, 80
 - S*-carboxymethylcysteine, 88–89
 - short-acting bronchodilators, 84–85
 - sinusitis, 73
 - spacers, 77–80
 - specialists, 93–95
 - status asthmaticus
 - emergency treatment, 95–100
 - home management, 95
 - hospitalization, 98–100
 - steroids, 86t
 - sulfur dioxide, 71
 - terbutaline, 89
 - theophylline, 86–87, 87f, 89
 - triamcinolone acetonide, 75t
 - triggers, 71–73
 - volatile organic compounds, 71
 - wheezing, 4–5
 - risk factors, 6t–7t
 - zafirlukast, 82
 - zileuton, 83
- Chiropractic spinal manipulation, 187
- CHIS. *See* California Health Interview Survey of 2001 (CHIS)
- Chlamydia
 - adult-onset asthma, 123
- Chlamydia pneumoniae*, 14, 228
- Chlamydia trachomatis*, 147
- Chlorofluorocarbons (CFC) inhalers, 77, 78t
- Chronic asthma, 61f
- Chronic bronchitis
 - epidemiology, 119f
- Chronic necrotizing pulmonary aspergillosis, 282
- Chronic obstructive pulmonary disease (COPD), 114
- Chronobiology
 - adult-onset asthma, 124
- Churg–Strauss syndrome, 82
- Cigarette smoking, 335–336
- Clopidogrel, 157
- Cocaine, 328–332
 - association with asthma, 330–331
 - pulmonary function abnormalities, 331
 - respiratory tract complications, 329t
- Cockroaches, 33
- Complementary and alternative medicine (CAM), 181–196, 183t
- Continuous positive airway pressure ventilation, 170
- COPD. *See* Chronic obstructive pulmonary disease (COPD)
- Corticosteroids, 114. *See also* Inhaled corticosteroids
 - allergic bronchopulmonary aspergillosis, 288–289
 - severe asthma, 174
 - systemic
 - adverse effects, 76t
 - adverse response to, 157t
 - pregnancy, 210
- Cortisone
 - children, 86t
- Cough
 - differential diagnosis, 69t
- Countries
 - asthma differences between, 359–362
- Cow’s milk avoidance diet, 260t
- Crack cocaine, 328
- Cromolyn
 - children, 88, 89
 - exercise-induced asthma, 245
 - pregnancy, 210
 - structure, 88f
- Cytokines, 22–23, 100–101, 102t–103t, 222–223
 - airway inflammation, 127f
- D**
- Δ9-Tetrahydrocannabinol, 334
- DBFCT. *See* Double-blind food challenge test (DBFCT)

- Decompensating
 - intubation, 323–324
- Deep sedation, 315–316
- Delivery, 215–216
- Dermatitis
 - atopic, 10
- Dermatophagoides farinae*, 33
- Dermatophagoides pteronyssinus*, 33
- Desflurane, 318
- Desloratadine
 - children, 86
- Dexamethasone
 - children, 86t
- Diary sheets, 93f
- Diesel fuel exhaust, 231–232
- Dietary supplements, 187–196
- Differential diagnosis, 57
- Diffusing capacity, 54–55
- Disease management programs, 354
- Dogs, 35–36
- Double-blind food challenge test (DBFCT), 38, 252
- Dry powder inhalers, 78t
- Dyes, 267–268
- Dynamic lung measurements, 48–53
- Dyspnea
 - minorities, 379t–380t
- E**
- ECP. *See* Eosinophil cationic protein (ECP)
- ECRHS. *See* European Community Respiratory Health Survey (ECRHS)
- EDTA. *See* Ethylenediamine tetraacetic acid (EDTA)
- EIA. *See* Exercise-induced asthma (EIA)
- EILP. *See* Exercise-induced laryngeal prolapse (EILP)
- Elderly, 9, 131f
 - anesthesia, 322t
 - lung physiology, 130t
- Electrocardiogram
 - emergency department, 148–149
- Emergency department, 143–159
 - antecedents, 147t
 - complications, 146–147
 - diagnosis, 146, 146t
 - differential diagnosis, 147
 - medications
 - adverse response to, 156–157
 - respiratory distress severity, 144–146
 - tests, 148–149
 - treatment, 149–155
 - predicting fatal episodes, 159
 - predicting response to, 158–159
 - triggers, 146–147
- Emergency medications
 - children, 98t
- Emphysema
 - epidemiology, 119f
- Endotracheal intubation, 316–317
- Endotracheal tubes
 - children, 98t
- ENFUMOSA. *See* European Network for Understanding the Mechanisms of Severe Asthma (ENFUMOSA)
- Environment
 - minorities, 373
- Environmental allergens, 33, 35t
- Environmental law, 386
- Environmental Protection Agency (EPA), 386
- Environmental tobacco smoke, 10, 229–230
 - children, 71
- Eosinophil cationic protein (ECP), 69
- Eosinophilia, 19
- Eosinophils, 20, 101
- EPA. *See* Environmental Protection Agency (EPA)
- Ephedra, 193
- Epidural (peridural) block, 320
- Epinephrine
 - emergency department, 150, 152
 - increased tolerance, 19
 - status asthmaticus, 97
 - sulfites, 261–262
- ERV. *See* Expiratory reserve volume (ERV)
- Erythroxylon coca*, 328
- Essential fatty acids, 191–193
- Estrogen replacement
 - adult-onset asthma, 120–121
- Ethylenediamine tetraacetic acid (EDTA), 269
- Etomidate, 317
- European Community Respiratory Health Survey (ECRHS), 13
- European Network for Understanding the Mechanisms of Severe Asthma (ENFUMOSA), 166
- Exercise(s)
 - for breathing, 185–187
 - challenge protocol, 73t
- Exercise-induced asthma (EIA), 237–247

- children, 73
 - clinical features, 238t, 242–244
 - diagnosis, 244–245, 244t
 - differential diagnosis, 242–244, 243t
 - pathophysiology, 239–241
 - pharmacological treatment, 89
 - prophylaxis, 246t
 - sports associated with, 242t
 - treatment, 245–247
 - Exercise-induced bronchospasm, 240
 - pathophysiology, 239t
 - Exercise-induced laryngeal prolapse (EILP), 243
 - Expiratory flow volume tracings, 56f
 - Expiratory reserve volume (ERV), 46–47, 48
 - F**
 - FACET. *See* Formoterol and Corticosteroid Establishing Therapy (FACET)
 - FALCPA. *See* Food Allergen and Consumer Protection Act (FALCPA)
 - Family history, 10
 - Fatal asthma
 - demographics, 165
 - epidemiology, 164–165
 - genetics, 165–166
 - pathophysiology, 166–167
 - psychosocial factors, 166
 - risk factors, 165–166, 165t
 - socioeconomic factors, 166
 - Fentanyl, 319
 - FEV. *See* Forced expiratory volume (FEV)
 - Fexofenadine
 - children, 86
 - Fish poisoning
 - scombroid, 256–257
 - Floors, 89
 - Flow-volume loop, 52
 - Flow-volume studies, 56–58
 - Flow-volume tracings, 48–53, 51f
 - Flunisolide
 - children, 75t
 - Fluticasone propionate
 - children, 75t
 - Food, 251
 - additive-induced asthma
 - differential diagnosis, 262t
 - additives, 251, 260–269, 262t
 - diagnosis, 261
 - differential diagnosis, 261
 - patient history, 261
 - physical examination, 261
 - treatment, 261–262
 - adverse effects, 253–260
 - allergy, 36–38, 253–254
 - children, 72
 - inhalational, 255t
 - prevalence, 37t, 254t
 - skin tests, 37
 - associated with occupational asthma, 255t
 - beneficial effects, 252–253
 - challenge, 258
 - induced asthma, 254–260
 - diagnosis, 257–258, 258f
 - differential diagnosis, 256–257, 256t
 - evaluation, 254–257
 - physical examination, 256
 - treatment, 259–260
 - intolerance, 253–254
- Food Allergen and Consumer Protection Act (FALCPA), 259
- Forced expiratory volume (FEV), 48, 49, 49f, 50f
- Forced vital capacity (FVC), 49f
- Formaldehyde
 - children, 71
- Former asthmatics, 25–26
- Formoterol
 - adult-onset asthma, 132
 - children, 80, 89
 - pregnancy, 210
 - structure of, 81f
- Formoterol and Corticosteroid Establishing Therapy (FACET), 119
- FRC. *See* Functional residual capacity (FRC)
- Functional residual capacity (FRC), 47
- Furosemide
 - exercise-induced asthma, 247
 - severe asthma, 170
- FVC. *See* Forced vital capacity (FVC)
- G**
- Gas dilution lung volume, 53–54
- Gastroesophageal reflux disease, 243
 - adult-onset asthma, 123
- Gaw. *See* Airway conductance (Gaw)
- Gender, 9, 13
 - adult-onset asthma, 119–120
- General anesthesia, 314–317
- Genetics, 10, 13
 - adult-onset asthma, 124–128, 131–132

fatal asthma, 165–166
 minority populations, 377
 occupational asthma, 301–302

Genleuton
 children, 82

German cockroaches, 33

GINA. *See* Global Initiative for Asthma (GINA)

Global Initiative for Asthma (GINA), 4, 66

Glucocorticoids, 100
 mechanism of action, 74f

Glutathione-*S*-transferase (GST), 302

Grass pollen, 34t

GST. *See* Glutathione-*S*-transferase (GST)

H

Hallucinogens, 336–337

Halothane, 318

Hamman’s crunch
 severe asthma, 173t

Healthy People 2010, 354

Heliox
 emergency department, 154–155

Helium–oxygen
 severe asthma, 175

HEPA. *See* High-efficiency particulate air (HEPA) filters

Heparin
 severe asthma, 170

Herbal medications
 children, 100

HFA. *See* Hydrofluoroalkane (HFA) inhalers

High-efficiency particulate air (HEPA) filters, 89

Histamine, 239

HLA. *See* Human leukocyte antigen (HLA)

Homeopathy, 184–185

Hormone replacement therapy (HRT)
 adult-onset asthma, 120–121

House dust mites, 33, 72

HRT. *See* Hormone replacement therapy (HRT)

Human leukocyte antigen (HLA), 302

Hydrocortisone
 children, 86t

Hydrofluoroalkane (HFA) inhalers, 78t, 79f

Hygiene hypothesis, 11, 12t, 223–224

I

IC. *See* Inspiratory capacity (IC)

IgE. *See* Immunoglobulin E (IgE)

IL. *See* Interleukin(s) (IL)

Immunoglobulin E (IgE), 101
 adverse effects, 76t
 multiallergen E screen, 41

Immunotherapy
 allergen injection
 adult-onset asthma, 132
 children, 91–93, 101

Infants
 allergenic food avoidance, 91

Infection, 14
 adult-onset asthma, 123

Infectious diseases, 222–225

Inflammation, 20–21
 pharmacotherapy, 21

Inflammatory mediators, 101

Influenza, 227

Inhalational food allergy, 255t

Inhaled anesthetic agents, 318

Inhaled bronchodilators
 children, 85t

Inhaled corticosteroids
 adverse effects, 76t
 children, 74–77, 75t
 minorities, 372–373
 pregnancy, 210
 safety, 136–137

Inhaler devices, 78t

Inhaler techniques
 children, 77–80, 79f–80f

Inspiratory capacity (IC), 47, 48

Inspiratory reserve volume (IRV), 46, 48

Inspiratory vital capacity (IVC), 48, 49f, 317, 336–337
 emergency department, 153–154
 severe asthma, 174

Insurance
 coverage requirements, 390
 minorities, 375

Integrated pneumotachometer, 52

Interleukin(s) (IL), 102t–103t

Interleukin-4 (IL-4), 22–23, 102t

Interleukin-13 (IL-13), 23–24, 23t, 24t, 103t

International Study of Asthma and Allergies in Childhood (ISSAC), 4, 359–362, 360f, 361f

Intracutaneous test, 39

Intradermal test, 39, 40

Intrathecal block, 320

Intravenous induction anesthetics, 317–318

Intravenous regional (bier) block, 320

- Ipratropium bromide
 - adverse response to, 156–157
 - children, 84
 - emergency department, 150, 152
 - pregnancy, 212
- Irritants
 - children, 71
- IRV. *See* Inspiratory reserve volume (IRV)
- Isoflurane, 318
- ISSAC. *See* International Study of Asthma and Allergies in Childhood (ISSAC)
- Itraconazole
 - allergic bronchopulmonary aspergillosis, 286t
- IVC. *See* Inspiratory vital capacity (IVC)
- K**
- Ketoconazole
 - allergic bronchopulmonary aspergillosis, 286t, 289
- Ketotifen, 100
- L**
- Labor and delivery, 215–216
- Lactation
 - medications, 215t
- Lactobacillus casei*, 225
- Laryngeal mask (LMA), 316
- Late-onset asthma (LOA), 115
- Late-onset wheezers, 4
- Latex allergy, 303–304
- Law, 385–390
 - environmental, 386
- Leukotriene(s), 239
- Leukotriene antagonists
 - exercise-induced asthma, 247
- Leukotriene pathway modifiers
 - adverse effects, 76t
 - children, 81–84
 - mechanism of action, 82f
 - pregnancy, 211
- Leukotriene-receptor antagonists
 - aspirin-induced asthma, 273
 - status asthmaticus, 97
- Levalbuterol
 - children, 84
 - severe asthma, 169
 - status asthmaticus, 97
- Lipoxins, 101
- LMA. *See* Laryngeal mask (LMA)
- LOA. *See* Late-onset asthma (LOA)
- Long-acting β -2 agonists
 - pregnancy, 210
- Long-acting bronchodilators
 - children, 80
- Loratadine
 - children, 86
- Lower extremity blocks, 320–321
- LSD. *See* Lysergic acid diethylamide (LSD)
- Lumbar epidural analgesia, 216
- Lungs
 - capacity, 47–48, 49f
 - compartments, 46–48
 - dynamic measurements, 48–53
 - function testing
 - occupational asthma, 299–300
 - physiology
 - aging, 130t
 - static volume measurements, 53–54
 - total capacity, 47
 - volume, 53
 - dynamic hyperinflation, 172f
 - volumes, 46–47, 47f, 49f
 - measurements, 57
- Lysergic acid diethylamide (LSD), 336–337
- M**
- Magnesium sulfate, 191
 - emergency department, 153
 - severe asthma, 170
- Ma huang, 193
- Mai-Men-Dong-Tang, 193
- Malignant hyperthermia
 - anesthesia, 322t
- Malpractice, 387
- Manual therapy, 187
- Marijuana, 334
 - respiratory tract complications, 329t
- Mask anesthesia, 315
- Mast cells, 20–21
- Maternal smoking
 - during pregnancy, 230
- MDI. *See* Metered-dose inhalers (MDI)
- Measles, mumps, and rubella (MMR) vaccine, 223
- Media, 354
- Medical care
 - minorities, 375
- Medical economics, 387–388
- Medications
 - adverse effects, 76t
 - emergency
 - children, 98t

- Meperidine, 319
 Metabisulfite challenge, 266t
 Metaproterenol
 structure of, 81f
 Metered-dose inhalers (MDI)
 vs small volume nebulizers, 77
 Methacholine, 61
 Methohexital, 317
 Methylprednisolone
 children, 86t
 emergency department, 150
 status asthmaticus, 97
 Methylxanthines
 severe asthma, 170
 Midazolam, 317
 Minerals, 187–190
 Minority populations, 357–384
 adherence, 375
 culturally competent care, 377–380
 genetics, 377
 intervention strategies, 376–377
 websites, 383–384
 Mites
 house dust, 33, 72
 Mitogen-activated protein kinase inhibitors, 101
 Mivacurium, 318
 MMR. *See* Measles, mumps, and rubella
 (MMR) vaccine
 Mold, 33, 34t, 35t, 90
 Monoclonal anti-IgE
 children, 83–84
 Monosodium glutamate (MSG), 265–267
 challenge, 267t
 Montelukast
 adult-onset asthma, 132
 children, 82
 exercise-induced asthma, 246–247
 pregnancy, 211
 Morphine, 319
 MSG. *See* Monosodium glutamate (MSG)
 Mucolytics
 children, 88–89
 Multiallergen IgE E screen, 41
 Multicenter Airway Research Collaboration
 emergency room study, 372–373
 Mumps. *See* Measles, mumps, and rubella
 (MMR) vaccine
 Mycetoma
 pulmonary, 281

Mycobacterium bovis, 224
Mycobacterium pneumoniae, 228
Mycobacterium tuberculosis, 224
Mycobacterium vaccae, 224
Mycoplasma, 14
 adult-onset asthma, 123
 Mycosis
 allergic bronchopulmonary, 281t

N
N-acetylcysteine
 children, 88–89
 National Asthma Education and Prevention
 Program (NAEPP), 347
 National Center for Health Statistics
 asthma prevalence, 362–368
 US race/ethnic differences, 363t
 emergency room visits
 US race/ethnic differences, 364t, 369f
 health care utilization, 362–368
 US race/ethnic differences, 363t, 366t–367t
 hospitalization
 US race/ethnic differences, 364t, 369f
 mortality, 362–368
 US race/ethnic differences, 363t, 365t,
 366t–367t
 prevalence
 US race/ethnic differences, 366t–367t, 368f
 National Cooperative Inner-City Asthma Study, 376
 National Health and Nutrition Examination III
 Survey (NHANES), 5, 58, 188
 National Heart, Lung, and Blood Institute
 (NHLBI)
 guidelines, 69t
 Near-fatal asthma
 pathophysiology, 166–167
 Nebulized bronchodilators
 children, 85t
 Nebulizers, 78t
 Nedocromil sodium
 children, 88
 exercise-induced asthma, 245
 structure, 88f
 Neonates, 11
 Neuromuscular-blocking drugs, 318
 Neuropeptides, 228
 NF- κ B. *See* Nuclear factor- κ B (NF- κ B)
 NHANES. *See* National Health and Nutrition
 Examination III Survey (NHANES)

NHLBI. *See* National Heart, Lung, and Blood Institute (NHLBI)

Nicotine, 335–336

respiratory tract complications, 329t

NIPSV. *See* Noninvasive pressure support ventilation (NIPSV)

Nitric oxide (NO), 21–22, 69–70

children, 71

occupational asthma, 301

NIV. *See* Noninvasive mask ventilation (NIV)

NO. *See* Nitric oxide (NO)

Nonadherence, 348–349

Noninvasive mask ventilation (NIV)

severe asthma, 170

Noninvasive positive pressure ventilation (NPPV)

emergency department, 155

Noninvasive pressure support ventilation (NIPSV)

emergency department, 155

Nonsteroidal anti-inflammatory drugs

(NSAID), 251–252, 270–271

adverse response to, 157

avoidance, 272–273

Nonviral infectious agents, 228–229

NPPV. *See* Noninvasive positive pressure ventilation (NPPV)

NSAID. *See* Nonsteroidal anti-inflammatory drugs (NSAID)

Nuclear factor- κ B (NF- κ B), 101

Nucleotide polymorphisms, 301–302

O

Obesity, 11, 14

adult-onset asthma, 123–124

Obstetrical management, 216

Occupational asthma, 293–306

adult-onset, 124

animal workers, 304

clinical presentation, 297–298

compensation and disability, 306

defined, 296

definition of, 298t

diagnosis, 297

distribution, 295f

epidemiology, 294–295

etiology, 299f

genetics, 301–302

history, 299f

immunological testing, 301

lung function testing, 299–300

mechanisms, 302–303

outcomes, 305–306

prevalence, 295t

prevention, 304–305

treatment, 305

work-site evaluation, 298–299

Occupational Safety and Health Administration (OSHA)

regulations, 386

Omalizumab

children, 83–84, 83t

pregnancy, 212

Opiates, 319

Opioids, 332–333

pulmonary function abnormalities, 333

respiratory tract complications, 329t

Oral challenge test

aspirin-induced asthma, 271–272

Oral steroids

children, 86

OSHA. *See* Occupational Safety and Health Administration (OSHA)

Osler, William, 15

Outdoor air pollution, 231

Outdoor allergens, 90

Oxygen

emergency department, 152

severe asthma, 169

status asthmaticus, 99

Oxytocin, 216

Ozone, 231

P

PAF. *See* Platelet-activating factor (PAF)

Pancuronium, 318

Papaver somniferum, 332–333

Parabens, 269

Paradoxical respirations

severe asthma, 173t

Parainfluenza, 225, 227

Paramethasone

children, 86t

Parenteral steroids

children, 86

Parker v. Metropolitan Life Insurance Company, 390

PCP. *See* Phencyclidine (PCP)

Peak expiratory flow rate (PEFR), 48, 148t

Peak feline, 94f

- Peak flow meters
 children, 91
 PEFR. *See* Peak expiratory flow rate (PEFR)
 Peridural block, 320
 Perioperative bronchodilators, 322–323
 Peroxisome proliferators-activated receptor- γ
 agonists, 101
 Persistent wheezers, 4
 Pets, 35–36
 dander, 90
 Phadebas RAST tests, 40–41
 Pharmacia CAP RAST tests, 40–41
 Phencyclidine (PCP), 336–337
 Phosphodiesterase inhibitors, 19
 Phosphodiesterase-4 inhibitors, 101
 Phosphoinositide-3-kinase γ , 101
 Pirbuterol
 structure of, 81f
 Platelet-activating factor (PAF), 100
 Plavix, 157
 Plethysmograph
 body, 53
 p38 mitogen-activated protein kinase inhibitors, 101
 Pneumotachometer
 integrated, 52
 Pneumothorax, 171–172
 Pollens, 32–33, 34t, 90–91
 grass, 34t
 weed, 34t
 Pollutants
 air
 children, 71
 Polyunsaturated fatty acids (PUFA), 191
 Poppy, 332–333
 Positive airway pressure ventilation, 170
 Postoperative analgesia, 324t
 Postoperative management, 323
 Pranlukast
 children, 82
 Prednisolone
 children, 86, 86t
 pregnancy, 210
 Prednisone
 children, 86, 86t
 pregnancy, 210
 Pregnancy, 203–217
 acute asthma exacerbation, 212–215, 214f, 216t
 adult-onset asthma, 122
 anesthesia, 322t
 arterial blood gas values, 205t
 asthma diagnosis, 207–208
 asthma severity classification, 213t
 asthma treatment, 208
 environmental triggers, 209
 FDA risk categories, 211t, 212t
 fetal asthma effects, 205
 fetal monitoring, 209
 fetal oxygenation, 205
 immunotherapy, 209
 literature, 207t
 maternal asthma effects, 205
 maternal cardiovascular physiology, 205
 maternal monitoring, 208–209
 maternal respiratory system physiology,
 204–205
 maternal smoking, 230
 patient education, 217
 pharmacological therapy, 209–212
 pulmonary function values, 205t
 Preinduction anesthesia, 317–318
 Preoperative anesthesia evaluation, 313t
 Preoperative assessment, 312–313
 Preoperative preparation, 313–314
 Prick-puncture test, 39, 40
Principles and Practice of Medicine, 15
 Privacy, 388
 Propofol, 315–316, 318
 severe asthma, 174
 Propofol infusion syndrome, 174
 Propranolol, 17
 Prostaglandins, 100
 PUFA. *See* Polyunsaturated fatty acids (PUFA)
 Pulmonary aspergilloma, 281
 Pulmonary function
 laboratory, 45–63
 quality control, 55–56
 measurements, 56–58
 tests
 disease progress, 62–63
 evaluating therapeutic regimens, 62
 interpretation, 58–59
 Pulmonary mycetoma, 281
 Pulse oximetry
 emergency department, 144
 Pulsus paradoxus
 severe asthma, 173t
- R**
- Race, 9. *See also* Minority populations
 Radioallergosorbent test (RAST), 37, 38, 40–41, 41t
 allergic bronchopulmonary aspergillosis, 283
 occupational asthma, 301
 Phadebas, 40–41

- RADS. *See* Reactive airway dysfunction syndrome (RADS)
- RAST. *See* Radioallergosorbent test (RAST)
- Raw. *See* Airway resistance (Raw)
- Reactive airway dysfunction syndrome (RADS), 296–297, 297t
- Recreational drugs, 327–338
 - association with asthma, 330–331
 - respiratory tract complications, 329t
- Regional anesthesia, 314–315, 319–321
- Relapse asthma, 14–15
 - risk, 15f
- Relaxation techniques, 185–187
- Reliever medications
 - children, 84–86
- Religious beliefs, 378
- Remifentanyl, 319
- Residual volume (RV), 47
- Resources, 104t
 - for clinicians, 351t
 - for patients, 353t
- Respiratory alternans
 - severe asthma, 173t
- Respiratory failure
 - emergency department, 155–156
- Respiratory infection, 10
- Respiratory syncytial virus (RSV), 5, 10, 225, 226–227
 - children, 72–73
- Rhinitis
 - allergic
 - children, 73
- Rhinovirus (RV), 225, 227
- Rock cocaine, 328
- Rocuronium, 318
- Roflumilast, 21
- RSV. *See* Respiratory syncytial virus (RSV)
- Rubella. *See* Measles, mumps, and rubella (MMR) vaccine
- RV. *See* Residual volume (RV); Rhinovirus (RV)
- S**
- Salmeterol xinafoate
 - children, 80, 89
 - exercise-induced asthma, 245
 - pregnancy, 210
 - structure of, 81f
- SBFCT. *See* Single-blind food challenge test (SBFCT)
- S-carboxymethylcysteine
 - children, 88–89
- Scombroid fish poisoning, 256–257
- Sedation, 315–316
 - deep, 315–316
 - severe asthma, 175
- Selenium, 188–189
- Self-management, 343–354, 344f
 - community-based programs, 352–354
 - emergency room programs, 352
 - goals, 347t
 - government programs, 354
 - home-based programs, 350–352
 - hospital discharge programs, 352
 - origins, 349–350
 - physician's office, 350–352
 - school-based programs, 349–350
 - significance, 347–354
 - types, 349–350
- SENSOR. *See* Sentinel Event Notification System for Occupational Risks (SENSOR)
- Sentinel Event Notification System for Occupational Risks (SENSOR), 294–295
- Severe asthma, 163–176
 - discharge, 176
 - drug dosing, 174t
 - extracorporeal techniques, 175
 - general anesthesia, 174–175
- ICU
 - clinical evaluation, 167–168
 - initial management, 168–170
 - transition out, 176
- intubation, 170–171, 171t
- mechanical ventilation, 171
- physical findings, 173t
- tracheotomy liberation, 175–176
- triage to ICU, 164
- ventilator liberation, 175–176
- ventilator settings, 172–173
- Sevoflurane, 318
- Short-acting β -2 agonists
 - pregnancy, 210
- Short-acting bronchodilators
 - children, 84–85
- SIC. *See* Specific inhalation challenge (SIC) test
- Single-blind food challenge test (SBFCT), 38
- Sinusitis
 - children, 73

- Skin-prick tests
 - food-induced asthma, 257–259
 - occupational asthma, 301
 - vs RAST, 71–72
- Skin tests, 38–39, 39t
 - food allergy, 37
- Sleep disorders
 - adult-onset asthma, 124
- Smoking, 335–336. *See also* Tobacco smoke
 - maternal
 - during pregnancy, 230
- Socioeconomic factors, 10
 - minorities, 374–375
- Sodium benzoate, 268–269
- Spacers, 78t, 94f
 - children, 77–80
 - techniques
 - children, 79f–80f
- Specialists
 - for children, 93–95, 94f
- Specific inhalation challenge (SIC) test
 - occupational asthma, 297, 300–301
- Spinal (intrathecal, subarachnoid) block, 320
- Spirometer
 - volume displacement, 52
- Spirometry, 48–53, 49f, 51f, 56–58
- Sputum cultures
 - emergency department, 149
- Static lung volume measurements, 53–54
- Status asthmaticus, 324
 - children
 - children
 - home management, 95
 - emergency treatment, 95–100
 - home management, 95
 - hospitalization, 98–100
- Steroids
 - children, 86t
 - oral
 - children, 86
 - parenteral
 - children, 86
 - status asthmaticus, 99
- Stress
 - fatal asthma, 166
- Subarachnoid block, 320
- Substance abuse
 - volatile, 336
 - respiratory tract complications, 329t
- Succinylcholine, 318
- Sufentanil, 319
- Sulfites, 261–262, 262–265
- Sulfur dioxide
 - children, 71
- Surveillance of Work-related and Occupational Respiratory Diseases (SWORD), 294
- SWORD. *See* Surveillance of Work-related and Occupational Respiratory Diseases (SWORD)
- Systemic corticosteroids
 - adverse effects, 76t
 - adverse response to, 157t
 - pregnancy, 210
- T
- Tartrazine, 267–268
- T-cells, 22–23
- TCM. *See* Traditional Chinese medicine (TCM)
- T-eosinophil, 227
- Terbutaline
 - children, 89
 - emergency department, 152
 - structure of, 81f
- Tetrahydrocannabinol (THC), 334
- THC. *See* Tetrahydrocannabinol (THC)
- Th1 cytokines, 222–223
- Th2 cytokines, 222–223
- Theophylline, 19
 - adverse effects, 76t
 - children, 86–87, 87f, 89
 - metabolism, 99t
 - pregnancy, 212
 - severe asthma, 170
 - status asthmaticus, 97, 99
- Thoracic gas volume, 53
- Ticlid, 157
- Ticlopidine, 157
- Tidal volume (V_T), 46, 48
- TLC. *See* Total lung capacity (TLC)
- Tobacco smoke, 14, 335–336
 - adult-onset asthma, 122
 - environmental, 10
 - children, 71
 - respiratory tract complications, 329t
- Total lung capacity (TLC), 47
- Traditional Chinese medicine (TCM), 182
- Transient early wheezers, 4
- Tree pollen, 34t
- Triamcinolone acetonide
 - children, 75t, 86t

V

- VC. *See* Vital capacity (VC)
- Vecuronium, 318
- Viral infections, 225
- Vital capacity (VC), 47
- Vitamin(s), 187–190
- Vitamin C, 188–189
- Vitamin E, 188
- Volatile organic compounds
 - children, 71
- Volatile substance abuse, 336
 - respiratory tract complications, 329t
- Volume displacement spirometer, 52
- V_T . *See* Tidal volume (V_T)

W

- Weed pollen, 34t
- Wheezers
 - adults, 5
 - risk factors, 8t
 - characteristics, 4–5

- children, 4–5
 - risk factors, 6t–7t
- differential diagnosis, 69t
- infants, 4–5
- late-onset, 4
- persistent, 4
- transient early, 4

X

- Xolair
 - children, 83–84, 83t
 - pregnancy, 212

Y

- Yoga, 186

Z

- Zafirlukast
 - children, 82, 83
 - exercise-induced asthma, 246
 - pregnancy, 211
- Zileuton
 - children, 83