

Index

- actigraphy 26–9, 68, 101–2, 155, 158, 172, 190
- adenoidal enlargement 100, 119, 189
- adenotonsillectomy 100–1
- advanced sleep phase disorder 68
- air leak 10, 108, 128–9, 137, 139, 144, 167, 193, 205
- albuterol 33, 85, 180
- alcohol consumption 55, 120, 199, 203
- alpha delta sleep 165
- alpha intrusion 85, 165, 180, 197
- alpha wave pattern 72, 165, 197
- alternating leg muscle activation 96, 187
- amlodipine 33, 85
- amphetamines 149
- amyotrophic lateral sclerosis 2, 73, 132, 139, 174, 203
- angiotensin II receptor antagonists 180
- anxiety 35, 114, 179, 202
- aortic stenosis 122
- apnea 3, 11, 35, 40, 46, 80–1, 86, 89, 113, 137, 163, 191
 - central 3, 14, 25, 30, 38–9, 60, 74, 92, 104–6, 113, 118, 132, 134, 139, 142, 144, 146–8, 159–61, 168, 174, 177, 181, 184, 189, 192, 196, 198–9
 - complex 6–7, 13, 104, 194
 - following bruxism 104
 - mixed 9–10, 31, 66, 104–5, 113, 135, 146, 171, 191
 - post-sigh 105, 191–2, 207
 - see also* obstructive sleep apnea
- apnea-hypopnea index 33, 46, 57, 77–8, 91, 101, 114, 137, 143, 157, 161, 163, 176, 190, 197–9
- apneustic breathing 80, 177
- Arnold–Chiari malformation 161, 189
- arousal 20, 25, 46, 82, 85, 87, 95, 101, 113–14, 138, 142, 144, 154, 156, 158–9, 165, 175
 - bruxism-related 182, 186
 - confusional 78, 81, 129–30, 148, 176, 179, 187
 - electrographic 16, 135, 150, 161
 - respiratory effort-related *see* respiratory effort-related arousals
 - spontaneous 78, 176
- artifacts 4, 7, 18, 70, 82, 140, 142
 - 60 Hz 70, 76, 83–4, 124–6, 170, 173, 180
 - cardioballistic 181
 - ECG 70, 82, 96, 124–6, 150, 187, 200–1
 - electrical 83, 179
 - electrode-related 83, 94, 98, 188
 - eye movement 61, 165
 - movement-related 15–16, 20, 146, 148, 151, 165, 179
 - muscle activity-related 95, 166, 175
 - pulse-related 83
 - respiratory 104, 141
 - snoring 16, 83
 - sweat 64, 124–6, 170, 200–1
- Ashman phenomenon 5, 141
- aspirin 133
- asthma 35, 57
- atomoxetine 128, 202
- atrial bigeminy 24, 153–4
- atrial fibrillation 1, 13, 24, 82, 121–2, 136, 141, 146, 152, 154, 164, 179, 199–200
 - paroxysmal 21
- atrial flutter 4, 13, 24, 140, 144, 146, 164
- atrial tachycardia, paroxysmal 21, 82, 179
- atrioventricular block 5, 13, 22, 122, 146, 153, 200
- back pain 60, 80
- banding 159
- behaviorally induced insufficient sleep syndrome 35, 69, 190
- benzodiazepines 99, 115, 150, 161, 167, 180, 188–9, 197
- benztropine 85
- bigeminy 24, 153–4
- bilevel positive airway pressure 2–3, 13, 34, 57, 86, 91–2, 134, 139, 146, 184, 189, 194, 205
 - central apnea 181
 - inappropriate triggering 183
 - trigger sensitivity 138–9, 167, 181
- Biot’s breathing 80, 177
- bipolar disorder 61
- bisoprolol 133
- body rocking 64, 153, 170
- bradycardia 21, 82, 140, 144, 179
- bradypnea 92, 160–1, 189
- brainstem tumors 99, 187
- breathing
 - apneustic 80, 177
 - Biot’s 80, 177
 - Cheyne–Stokes *see* Cheyne–Stokes breathing
 - cluster 80, 177–8
 - mouth 119, 143, 163
 - pediatric 156
 - periodic 30, 36, 66, 144, 159–60, 171, 177, 196
 - post-sigh 137, 192, 207
 - REM-related 174, 190
 - thoracoabdominal paradoxical 157
- bruxism 76, 94–5, 98, 175, 182, 185–9, 191
 - apnea following 104
 - children 182
- budesonide/formoterol, 84
- bundle branch block 4, 146
- cardiac tamponade 148
- cardioballistic artifact 181
- cardiomyopathy 1
 - valvular 14
- cataplexy 35, 45, 71, 101, 128, 149, 158, 162, 168, 171–3, 190, 202
- cavernous angioma 97
- central apnea 3, 14, 25, 30, 38–9, 60, 74, 92, 104–6, 113, 118, 132, 134, 139, 142, 144, 146–8, 159–61, 168, 174, 177, 181, 184, 189, 192, 196, 198–9
- central congenital hypoventilation syndrome 56, 167, 205
- central hypoventilation syndrome 205
- cerebellar tonsils 161, 189
- cerebrovascular accident 38, 160
- cervical cordotomy 177
- Cheyne–Stokes breathing 1, 10, 14, 23, 36, 38, 60, 66, 74, 80, 92, 111, 113, 132, 134, 137–9, 141, 144, 147–8, 160, 168, 174, 177, 181, 194, 196, 199, 203–4
 - children 171
- Chiari malformation *see* Arnold–Chiari malformation
- children
 - bruxism 182
 - central congenital hypoventilation syndrome 56, 167
 - Cheyne–Stokes breathing 171
 - CPAP 32, 57
 - epilepsy 79, 148, 170
 - hypersomnia 69, 101, 172, 190
 - hypopnea 31–2, 156–7
 - mixed apnea 31, 66, 156, 171
 - narcolepsy 172, 190
 - obesity 125
 - obstructive sleep apnea 30, 32, 57, 156
 - oxygen desaturations 31, 57, 156
 - pediatric breathing 156
 - respiratory rate 156–7, 167
 - rhythmic movement disorder 153, 170, 180, 190
 - sleep patterns 151, 153, 155, 164
 - snoring 64, 66, 100, 119, 125, 170, 189
- chronic obstructive pulmonary disease 34, 91, 108, 133, 157–8, 183, 193
- circadian rhythm sleep disorder 27, 40, 50, 68, 101, 155, 158, 161, 164, 172
 - free-running (non-entrained) 68, 155, 172
- citalopram 33, 85, 180
- clomipramine 128, 202
- clonazepam 55, 58, 98–9, 114, 131, 150, 166, 188–9, 197, 203
- cluster breathing 80, 177–8
- cocaine 29, 149, 155
- coenzyme Q10 92
- complex apnea 6–7, 13, 104, 194
- confusional arousal 78, 81, 129–30, 148, 176, 179, 187
- congestive heart failure 51, 73, 104–6, 164, 171, 174, 207

continuous positive airway pressure (CPAP) 2, 8, 11, 13, 23–4, 34, 38, 40, 45, 51, 86, 89, 91–2, 104, 106, 113, 121, 128–9, 134–6, 142, 159–60, 191–2, 194, 199 in atrial fibrillation 164 children 32, 57 in kyphoscoliosis 167 and obstructive apnea 3, 196 coronary artery disease 22, 126 CPAP <i>see</i> continuous positive airway pressure cyclobenzaprine 85 Dandy–Walker syndrome 177 daytime sleepiness 11, 25, 35–6, 40, 45, 55, 58, 67, 70, 80, 82–5, 89, 101, 105, 109, 111, 113, 120, 128, 133, 136–7, 149–50, 156, 158, 162, 168, 171–2, 181, 190, 198–9, 202 delayed sleep phase disorder 35, 68–9, 158, 172 desvenlafaxine 92 developmental delay 94, 99, 117, 188 diabetes mellitus 33, 136 diaphragmatic pacing 166 diaphragmatic weakness 111, 195, 203 diastolic dysfunction 122 diazepam 58 diphenhydramine 85 dream enactment behavior 67, 176, 178, 190, 203 drowsiness 71, 150 dyslipidemia 38 ECG artifact 70, 82, 96, 124–6, 150, 187, 200–1 effort belt malfunction 105–6, 192 electrical alternans 15, 148 electrode artifact 83, 94, 98, 179, 188 electrode popping 76, 124–6, 175, 200–1 electrographic arousal 16, 135, 150, 161 enacarbil 19, 150 encephalopathy 32, 169 epilepsy 150–1 children 79, 148 sleep related 77, 190 vagal nerve stimulation 170, 198 <i>see also</i> seizures epileptiform activity 76, 166, 169–70, 175–6 Epworth Sleepiness Scale 33, 35, 45, 132–3, 136–7, 168, 204 esophageal pressure monitoring 156, 181 eszopiclone 19, 150 exertional dyspnea 111 eye movement artifacts 61, 165 fentanyl 60 fibromyalgia 54, 115, 165–6, 197 flecainide 17 fluoxetine 29, 155 foramen magnum 161, 189 fragmentary myoclonus 79 excessive 119, 198 free-running (non-entrained) circadian rhythm disorder 68, 155, 172 frontal intermittent rhythmic delta activity 61, 169 functional residual capacity 167 gabapentin 19, 150, 168 gabapentinoids 150 gaboxadol 168 gamma-hydroxybutyrate 128, 202 gasping 71, 100, 119, 133 gastroesophageal reflux 30, 51, 80, 165 Haldane effect 194 head banging 153, 170 head injury 61 head rolling 153 heart block 4–5, 13, 22, 122, 146, 153, 200 heart failure 3, 10, 121, 144, 177, 192, 196, 199 congestive 51, 73, 104–6, 164, 171, 174, 207 Hering–Breuer reflex 144 histamine 161 hydrochlorothiazide 55 hypercapnia 121, 142, 157, 167–8, 174, 189 hyperkalemia 4, 140 hyperpnea 174, 177, 191 hypersomnia 87, 150, 181 children 69, 101, 172, 190 idiopathic 35, 55, 158, 162, 171–2, 190 hypertension 21, 33, 36, 55, 122, 133, 136–7, 167, 205 hypnagogic foot tremor 79, 96, 119, 180, 187, 198 hypnagogic hallucinations 35, 71, 158 hypnagogic hypersynchrony 61, 169 hypnagogic jerks 64, 170 hypnic <i>see</i> hypnagogic hypocapnia 160, 174, 199 hypocretins 161 hypopnea 1, 3, 9, 31–2, 46, 74, 132, 135, 138–9, 141–3, 146–8, 154, 156–7, 163, 171, 174, 177, 181, 192–4, 197–9, 203–6 children 31–2, 156–7 non-obstructive 106 obstructive 25, 87, 106, 118, 137, 207 hypothalamus 41, 161 hypoventilation 1, 6–7, 9, 13–14, 33, 108, 138, 141–3, 146, 157, 166–7, 174, 189, 199, 204, 206 central congenital hypoventilation syndrome 56, 167, 205 obesity-hypoventilation syndrome 107, 111, 136 sleep-related 5, 18, 132, 134, 142, 177, 193–5, 203–4 hypoxemia 6–7, 85, 92, 111, 138, 141–2, 157, 167, 189, 193–5 nocturnal 164 inappropriate nighttime behavior 130, 202 insomnia 17, 26, 114, 150, 154, 197 sleep initiation 40 insufficient sleep syndrome 35, 69, 158, 190 interictal seizure focus 126, 175, 201 <i>International Classification of Sleep Disorders</i> 2nd edition (ICSD-2) 141 iron supplements 101, 190 irregular sleep–wake circadian rhythm sleep disorder 68 ischemic heart disease 136 jactatio capitiis nocturna 153 jet lag 27 junctional rhythm 5, 141 Kleine–Levin syndrome 67, 69, 171–2, 190 kyphoscoliosis 167 lambda waves 20, 151 lamotrigine 61 left ventricular failure 86 leg banging 153 leg movements 69, 139, 169, 187 <i>see also</i> periodic limb movements and restless legs syndrome leg rolling 153 levocarnitine 92 levothyroxine 92 Lewy body dementia 166, 187, 189 locus coeruleus 41, 161 log-rolling 153 lorazepam 85, 180 loss of consciousness 19 maintenance of wakefulness test 47 mandibular advancement devices 199 mask leaks 137, 167, 205 melatonin 26, 40, 55, 150, 158, 161, 166 methadone 80, 168, 177 methylphenidate 158 micrognathia 31 mitochondrial disorders 184 mixed apnea 9–10, 31, 66, 104–5, 113, 135, 146, 171, 191 children 31, 66, 156, 171 Mobitz type 1 block 22, 146, 153 Mobitz type 2 block 22, 146 modafinil 45, 158 mononucleosis 101 morning headache 124, 132–3, 137 motor activity 75, 77–8, 175, 196–7 mouth breathing 119, 143, 163 movement artifact 15–16, 20, 146, 148, 151, 165, 179 multiple sclerosis 177 multiple sleep latency test 149 multiple system atrophy 187, 189 muscle artifact 95, 166, 175 myasthenia gravis 69, 205 myelomeningocele 189 myoclonic seizures 149 narcolepsy 17, 29, 35, 42, 67, 128, 149–50, 155, 158, 162, 166, 171, 173, 187, 202 children 172, 190 without cataplexy 69, 71, 101, 172 nasal pressure monitoring 163 nicotine patches 133 nightmares 75, 129–30, 175, 196, 202 propranolol-induced 196 nocturia 105 non-24 hour sleep–wake syndrome 27, 155 non-REM sleep <i>see</i> NREM sleep noninvasive positive pressure ventilation 34, 138, 158, 166–7, 184, 193 norepinephrine 161 normal sinus rhythm 24, 122, 140, 200 NREM sleep 7, 10–11, 14–15, 36, 38–40, 83–5, 89, 133, 137–8, 159–60, 162, 165, 170–1, 174–6, 182, 189, 196–8, 203–7 NREM sleep parasomnia 75 obesity 4, 36, 73, 91, 114, 122, 159–60, 200, 204 children 125 obesity-hypoventilation syndrome 107, 111, 134, 136

Index

- obstructive hypopnea 25, 87, 106, 118, 137, 207
obstructive sleep apnea 7–9, 13, 15, 23–4, 36, 74, 78, 90–2, 108, 111, 115, 134, 136, 190
 children 30, 32, 57, 156
 under CPAP 104
opiates 150, 161
orthopnea 111
oxygen desaturations 108, 157
oxygen therapy 34, 109, 111, 157
- pacer 56, 144, 152, 166
palpitations 24, 154, 176
panic attacks 78, 81, 176, 179
paraplegia 89
parasomnias 35, 75, 150–1, 166, 175–6, 179, 182, 185, 187, 202–3
Parkinson’s disease 166, 187, 189
paroxetine 35, 114, 196
paroxysmal atrial tachycardia 82, 179
patient–ventilator asynchrony 10, 138–9
pediatric breathing 156
periodic breathing 30, 36, 66, 144, 159–60, 171, 177, 196
periodic limb movement disorder 101, 115
periodic limb movements 17, 84, 101, 113, 115, 119, 121
 of sleep 61, 93, 96–7, 119, 121
 of wakefulness 93
phenobarbital 188
phenytoin 16, 148
Pierre–Robin sequence 31
pineal gland 41, 161
polycythemia 133, 167, 205
pontine infarct 177
pontomedullary hemorrhage 177
positive airway pressure
 bilevel *see* bilevel positive airway pressure
 continuous *see* continuous positive airway pressure (CPAP)
post-sigh apnea 105, 191–2, 207
post-sigh breathing 137, 192, 207
post-sigh pause 207
PR interval prolongation 141, 146, 153
pramipexole 114, 150, 197
pregabalin 150
pregnancy 70
propranolol 114
 nightmares 196
proteinuria 36
pseudoseizures 77
pulmonary fibrosis
 idiopathic 7
 interstitial 4
pulse-related artifact 83
pulsus alternans 15, 148
- drug-induced 196
REM-related breathing 174, 190
REM-related sleep disordered breathing 174, 190
respiratory artifacts 104, 141
respiratory disturbance 119, 160, 174, 177, 179, 198
respiratory disturbance index 163, 181
respiratory effort 22, 67, 80, 106, 118, 138–9, 147, 156, 171, 178, 181, 192, 198, 204–5
 increased 86, 138, 142, 181
respiratory effort-related arousals 1, 6, 9, 66
respiratory inductance plethysmography 1–4, 7, 14–16, 19, 22–4, 30, 32, 62, 77, 83, 97, 103, 106, 121–2, 128–34, 136–7, 140, 145, 154, 179, 181, 206
respiratory sinus arrhythmia 15, 144
restless legs syndrome 23, 35, 84, 93, 101, 180, 190
restrictive lung disease 57, 167
Rett’s syndrome 177
rheumatoid arthritis 165
rhythmic masticatory muscle activity 175
 see also bruxism
rhythmic movement disorder 23, 153, 170, 180
 see also individual manifestations
rhythmie du sommeil 153
riluzole 132
ropinirole 101, 150
- sawtooth waves 8, 142, 158
seizures 61–2, 64, 73, 75, 78, 95, 97, 99, 117–18, 126, 131, 148–9, 151, 170, 174–7, 185–6, 188, 190, 198, 201
 see also epilepsy
selective serotonin reuptake inhibitors 155, 180, 187, 189, 196
servo positive airway pressure 3, 10, 139
servo ventilation 92, 106, 109, 144, 194
 malfunction 139, 192
sick sinus syndrome 11, 144
sinus arrhythmia 5, 15, 144
sinus bradycardia 21, 144, 179
sinus rhythm 4–5, 13, 21, 24, 122, 140–1, 146, 152, 200
sinus tachycardia 21, 122, 144, 200
skeletal dysplasia 57
sleep “drunkenness” 158
sleep hygiene 40, 131, 203
sleep inertia 158
sleep latency 45, 69, 71, 101, 114, 149, 155, 162–3, 168, 172–3, 180, 182, 190
sleep onset latency 26–7, 154, 162
sleep onset REM periods (SOREMs) 101, 149, 158, 162–3, 171–3, 190
sleep paralysis 17, 35, 71, 149, 158
sleep-related breathing disorder 6, 29, 121, 126, 148, 176, 203
sleep-related dissociative disorder 75, 175
sleep-related epilepsy 77, 190
sleep spindles 161–2, 165, 167, 185
sleep stages 37, 45–6, 50, 65, 72, 107, 119, 138, 155, 162, 164, 182, 193, 204–5
sleep starts 170
sleep talking 17, 114, 150
sleep terrors *see* NREM sleep parasomnias
sleep-related hypoventilation 5, 18, 132, 134, 142, 177, 193–5, 203–4
- sleep-related rhythmic movement disorder 23, 153
sleep–wake transition disorders 170
sleepiness, daytime *see* daytime sleepiness
sleepwalking 17–18, 23, 77, 130, 150, 175–6, 187, 202–3
slow wave sleep 60, 90, 101, 164–5, 167–8, 170, 178–9, 193, 202
smoking 34, 133
snoring 6–7, 11, 16, 25, 33, 35–6, 40, 45–6, 55, 61, 70, 80, 82–5, 87, 105, 113–14, 120, 124, 131, 133, 137, 139, 141–2, 158, 179–81, 192, 197, 199, 204
 children 64, 66, 100, 119, 125, 170, 189
snoring-induced artifact 16, 83
sodium oxybate 45, 54, 58, 165–6, 168
somnambulism *see* sleepwalking
spike-wave discharge 16, 20
spinal cord injury 89, 111, 182
spontaneous arousals 78, 176
supraventricular tachycardia 164
sweat artifact 64, 124–6, 170, 200–1
synucleopathies 99, 187–8
- tachycardia 4, 85, 122, 140, 144, 152, 200–1
 atrial paroxysmal 21, 82, 179
 sinus 21, 200
 supraventricular 164
temazepam 85
temporomandibular joint disease 95
thoracoabdominal paradoxical breathing 157
tiagabine 168
time in bed 27, 154, 190
time out of bed 27, 154
tongue biting 98
tonsillar enlargement 100, 189
tracheostomy 56, 166, 184
tramadol 60
trazodone 92
tricyclic antidepressants 50, 164
trigeminy 153
tubomammillary nucleus 161
- upper airway obstruction 156, 166, 183, 203–5
upper airway resistance syndrome 30, 85, 91, 138, 156, 158, 180, 196
uvulopalatopharyngoplasty 199
- vagal nerve stimulation 144, 170, 207
valsartan 85, 180
valvular cardiomyopathy 14
venlafaxine 55, 92, 128, 166, 202
ventilation–perfusion mismatch 108, 193
ventricular bigeminy 24, 153
ventricular trigeminy 153
- weight loss 40, 120, 161, 199
Wenckebach phenomenon 146
wide complex tachycardia 122, 140–1, 152–4, 200
Wolff–Parkinson–White syndrome 11, 144
zolpidem 58, 120, 168