INDEX

A
acquired epileptic aphasia (LKS), 73
ADHD. See attention-deficit hyperactivity-disorder
AEDs. See antiepileptic drugs
aEEG. See amplitude-integrated EEG
aetiology
epileptic encephalopathy with CSWS, 153
infantile spasms, 122–123
American Academy of Neurology, 2
amplitude-integrated EEG (aEEG), 93
animal models
antiseizure medications, 6
of neonatal seizures, 96
animal studies, recurrent seizures, 66
antiepileptic drugs (AEDs)
age at epilepsy onset and seizure frequency, 26
benzodiazepines, 146
carbamazepine, 80, 82, 84–86
cognitive and psychiatric effects of, 29
Dravet syndrome, cognitive effects of, 145–146
ethosuximide, 81–82, 90
evaluation strategy, 83
lamotrigine TG, 81–82, 88
Lennox-Gastaut syndrome, prognosis issue, 165–166
levetiracetam, 81–82, 146
neurobehavioural disorders, 18
oxcarbazepine, 81–82, 84
phenobarbitone, 81–82, 88–90
phenytoin, 81–82
stiripentol, 146
topiramate, 81–82, 88, 146
valproate, 80, 82, 86–87, 146
zonisamide, 81–82, 88
antiseizure medications (ASMs)
animal models, 6
prenatal exposure to, 5
anxiety, behavioural problems, 19
ASDs. See autism spectrum disorders
ASMs. See antiseizure medications
attention-deficit hyperactivity-disorder (ADHD)
behavioural problems, 18
magnetic resonance imaging volumetric analysis, 30
new-onset epilepsy, 23
attention/executive functioning, 179–180
autism spectrum disorders (ASDs)
behavioural problems, 19
infantile spasms, 128–130
B
BECTS. See benign epilepsy with central-temporal spikes
behavioural problems
anxiety, 19
attention-deficit–hyperactivity-disorder, 18
autism spectrum disorders, 19
bipolar disorders, 20
conduct disorder, 20
defining problem, 17–21
depression, 19
epilepsy-related variables
age at onset, 28
electroclinical syndrome, 26
interictal epileptiform discharges, 27
juvenile myoclonic epilepsy, 26–27
postictal psychoses, 28
sleep disruption, 27
temporal relationship, psychiatric comorbidities, 27–28
lifespan perspective
epilepsy surgery effects, 25
onset, 23
outcomes, 23–24
methodological issues, 21–23
neurobiological hypothesis, 29–31
oppositional defiant disorder, 20
psychogenic non-epileptic seizures, 20
psychosis, 20
psychosocial model, 31–32
social difficulties, 20–21
suicidal ideation, 20
treatment of, 32–34
benign childhood epilepsy. See also self-limited childhood epilepsies
definition of, 102
benign epilepsy with centrotemporal spikes
(BECTS), 2, 103–104, 152–153
benign familial infantile seizures (BFIS), 114–115
benign familial neonatal infantile seizure (BFNIS), 114
benign focal infantile seizures
differential diagnosis
benign infantile convulsions associated with gastroenteritis, 116–117
differential diagnosis
benign infantile convulsions associated with gastroenteritis, 116–117
benign infantile focal epilepsy with midline spikes and waves during sleep, 116
benign familial and non-familial infantile seizures, 114–115
infantile convulsions with choreoathetosis, 115
benign infantile focal epilepsy with midline spikes and waves during sleep, 116
electroclinical features
benign familial and non-familial infantile seizures, 114–115
infantile convulsions with choreoathetosis, 115
benign familial and non-familial infantile seizures, 114–115
benign myoclonic epilepsy of infancy (BMEI)
electroclinical features, 117
later cognition and behavior, 117–118
long-term cognitive deterioration, 45–46
benign non-familial infantile seizures (BNFIS), 114–115
benign rolandic epilepsy (BRE), 71
benzodiazepines, 146
BFIS. See benign familial infantile seizures
BNFIS. See benign familial neonatal–infantile seizure
biomarkers, infantile spasms, 130–132
bipolar disorders, 20
blood-oxygen-level-dependent (BOLD) technique, 54
BMEI. See benign myoclonic epilepsy of infancy
BNFIS. See benign non-familial infantile seizures
brain disorder vs. psychiatric comorbidities, 13
BRE. See benign rolandic epilepsy
C
CAE. See childhood absence epilepsy
carbamazepine (CBZ), 80, 82, 84–86
CBT. See cognitive-behavioural therapy
CBZ. See carbamazepine
cessation of spasms, 126
childhood absence epilepsy (CAE), 2, 27, 46
childhood epilepsy
cognitive comorbidity
electrical brain storms, 4–5
misdiagnosis, 6
natural response to seizures, 5–6
parents’ role, 6–7
seizures impact of, 4–5
shared underlying causes, 1–4
dynamic epileptic processes, 12–13
functional magnetic resonance imaging, 57–59
neuropsychological assessment
cognitive and mood regulation evaluation, 13–14
intellectual impairment, 14
performance during course of disease, 13
screening, clinical practice, 14
differential diagnosis
benign infantile convulsions associated with gastroenteritis, 116–117
treatment, 155–157
CSWS. See continuous spike wave in slow sleep
D
depression, 19
diagnostic overshadowing, 18
differential diagnosis
benign infantile convulsions associated with gastroenteritis, 116–117
benign infantile focal epilepsy with midline spikes and waves during sleep, 116
bipolar disorders, 20
diagnostic overshadowing, 18
differential diagnosis
benign infantile convulsions associated with gastroenteritis, 116–117
treatment, 155–157
CSWS. See continuous spike wave in slow sleep
electro-clinical syndrome, 26
encephalopathy with status epilepticus in sleep (ESES), 47–48
epilepsy factors, self-limited childhood epilepsies, 106–107
epilepsy-related variables
age at onset, 28
electro-clinical syndrome, 26
interictal epileptiform discharges, 27
juvenile myoclonic epilepsy, 26–27
postictal psychoses, 28
sleep disruption, 27
temporal relationship, psychiatric comorbidities, 27–28
epilepsy surgery
behaviour disorders, 180–181
early surgical intervention, 173
neuropsychological assessment, 173–174
epilepsy syndromes, long-term cognitive deterioration
benign myoclonic epilepsy of infancy, 45–46
continuous spike wave in slow sleep, 47–48
Dravet syndrome, 46–47
encephalopathy with status epilepticus in sleep, 47–48
juvenile myoclonic epilepsy, 48–49
Lennox-Gastaut syndrome, 47
myoclonic astatic epilepsy, 46
rolandic epilepsy, 48
temporal lobe epilepsy, 48
West syndrome, 46
epileptic encephalopathy
conceptualization of, 4–5
with CSWS
aetiology of, 153
cognitive regression, pathophysiology of, 153–155
definition of, 152–153
long-term outcome, 157–159
rehabilitation, 159
treatment, 155–157
epileptic spasms, 122
ESES. See electrical status epilepticus during slow sleep; encephalopathy with status epilepticus in sleep
ethosuximide (ETS), 81–82, 90
ETS. See ethosuximide

F
family factors, self-limited childhood epilepsies, 108
fMRI. See functional magnetic resonance imaging
FSIQ. See Full Scale Intellectual Quotient
Full Scale Intellectual Quotient (FSIQ), 14
functional magnetic resonance imaging (fMRI)
childhood epilepsy, 57–59
pediatric epilepsy, 59–61
resting-state (task-free), 57
task-based activation, 54–56

G
generalized genetic epilepsies (GGEs), 2
GGEs. See generalized genetic epilepsies

H
HIE. See hypoxic-ischemic encephalopathy
hippocampal adequacy theory, 58
hippocampal reserve theory, 58
hypoxic-ischemic encephalopathy (HIE), 94
hypsarrhythmia, 122

I
idiopathic epilepsy, 2
IEDs. See interictal epileptiform discharges
IISs. See interictal spikes
ILAE. See International League Against Epilepsy
infantile convulsions with choreoathetosis, 115
infantile spasms
aetiological classification of, 122
aetiology influence of, 123
autism spectrum disorder, 128–130
biomarkers, 130–132
case definitions of, 122
causal pathways with, 122–123
cognitive outcomes, 124–125
epileptic spasms and, 122
importance of, 121
lead time effects, 127–128
neurodevelopmental outcomes, 122–123
systematic review of, 124–125
treatment interventions, 125–126
tuberous sclerosis complex treatment, 131–132
West syndrome and, 122
intellectual disability, 166–169
intellectual impairment, 14
intelligence and development, general measures of, 175–177
interictal epileptiform discharges (IEDs), 27, 151–152
interictal spikes (IISs)
acquired epileptic aphasia, 73
acute and chronic effects, 68
benign rolandic epilepsy, 71
early-life, 70
physiological effects of, 68–69
rodent studies, 68–70
studies in patients, 70–74
transitory cognitive impairment, 72
transitory effects of, 71
International Classification of Disease (ICD)
Version 10, 18
Index

International League Against Epilepsy (ILAE), 45, 151, 163
International League Against Epilepsy (ILAE) Commission on Classification and Terminology, 102, 136
International League Against Epilepsy (ILAE) Commission on Psychobiology of Epilepsy, 18

J
JME. See juvenile myoclonic epilepsy
juvenile myoclonic epilepsy (JME)
generalised epilepsy, 26–27
long-term cognitive deterioration, 48–49

L
lamotrigine TG (LTG), 81–82, 88
Landau-Kleffner syndrome (LKS), 151, 158. See also acquired epileptic aphasia
language, 178–179
language tasks, 55
lead time effects, infantile spasms, 127–128
learning disorder, 43
learning problems, self-limited childhood epilepsies
epilepsy factors, 106–107
family factors, 108
self-esteem and stigma, 109
Lennox-Gastaut syndrome (LGS)
behavioural problems, 166–169
epilepsy syndromes, 47
intellectual disability, 166–169
long-term prognosis, 167–169
nosological uncertainty, 163
prognosis issues
antiepileptic drugs, 165–166
epileptic seizures, 164–165
levetiracetam, 5, 81–82, 146
LGS. See Lennox-Gastaut syndrome
lifespan perspective, behavioural disorders
epilepsy surgery effects, 25
onset, 23
outcomes, 23–24
LKS. See Landau-Kleffner syndrome
long-term cognitive deterioration
clinic-based studies of children with mixed epilepsy syndromes, 44–45
population-based studies, 44, 49–50
social outcome and cognition, 50–51
specific epilepsy syndromes
benign myoclonic epilepsy of infancy, 45–46
continuous spike wave in slow sleep, 47–48
Dravet syndrome, 46–47
encephalopathy with status epilepticus in sleep, 47–48
juvenile myoclonic epilepsy, 48–49
Lennox-Gastaut syndrome, 47
myoclonic atatic epilepsy, 46
rolandic epilepsy, 48
temporal lobe epilepsy, 48
West syndrome, 46
LTG. See lamotrigine TG

M
material specificity, 58
MDI. See mental developmental index
medical databases, 124
memory and learning, 177–178
mental developmental index (MDI), 175–176
motor mapping tasks, 54–55
myoclonic atatic epilepsy, 46
myoclonic epilepsy in infancy
electroclinical features, 117
later cognition and behavior, 117–118

N
National Institute of Neurological Disorders and Stroke (NINDS), 22
neonatal seizures
aetiologies of, 94–95
animal models of, 96
clinical care implications, 100
comorbidities of, 94
definition of, 92
diagnosis of, 92–94
future research, 100
long-term developmental follow-up barriers, 95–96
potentially modifiable risk factors, 99–100
range of outcomes after, 97–98
risk factors for adverse outcomes, 98–99
World Health Organization guideline, 100
neurobiological hypothesis, 29–31
neurodevelopmental outcomes, infantile spasms, 122–123
neuropsychological assessment
cognitive and mood regulation evaluation, 13–14
epilepsy surgery, 173–174
intellectual impairment, 14
performance during course of disease, 13
screening, clinical practice, 14
NINDS. See National Institute of Neurological Disorders and Stroke
nonconvulsive seizures. See neonatal seizures
nosological uncertainty, 163

O
ODD. See oppositional defiant disorder
oppositional defiant disorder (ODD), 20
OXC. See oxcarbazepine
oxcarbazepine (OXC), 81–82, 84
Index

**P**
- paediatric epilepsy
  - beneficial effects, 172–173
  - functional magnetic resonance imaging, 59–61
  - postsurgical cognitive function, 175–180
- peri-ictal psychoses, 28
- persistent convulsive discharge, 154
- PHB. See phenobarbitone
- Phenytoin (PHB), 81–82, 88–90
- PNES. See psychogenic non-epileptic seizures
  - population-based studies, long-term cognitive deterioration, 44, 49–50
- postictal psychoses, 28
- postsurgical cognitive function, pediatric epilepsy
  - attention/executive functioning, 179–180
  - general measures of intelligence and development, 175–177
  - language, 178–179
  - memory and learning, 177–178
  - visuospatial skills, 179
- potentially modifiable risk factors, 99–100
- presurgical cognitive functioning, childhood epilepsy, 174–175
- presymptomatic seizure treatment, 131–132
- psychogenic non-epileptic seizures (PNES), 20
  - psychosocial model, 31–32

**R**
- Rasmussen syndrome, 179
- recurrent seizures
  - animal studies, 66
  - studies in children, 67–68
- reflex myoclonic epilepsy of infancy (RMEI), 117
- region of interest (ROI) analysis, 56
- resting-state functional magnetic resonance imaging (rs-fMRI), 57
- risk factors, neonatal seizures
  - for adverse outcomes, 98–99
  - potentially modifiable, 99–100
- RMEI. See reflex myoclonic epilepsy of infancy rodent studies, interictal spikes, 68–70
- rolandic epilepsy, 48, 103. See also benign epilepsy with centrotemporal spikes (BECTS)
- rs-fMRI. See resting-state functional magnetic resonance imaging

**S**
- seizure outcome, 43
- self-esteem, 109
- self-limited childhood epilepsies
  - benign epilepsy with centrotemporal spikes, 103–104
  - childhood absence epilepsy, 104–105
  - learning problems
    - epilepsy factors, 106–107
    - family factors, 108
    - self-esteem and stigma, 109
  - self-rating scales, 22
  - sleep disruption, 27
  - social competence vs. epilepsy-related variables, 21
  - social difficulties, 20–21
  - social outcomes, 43, 50–51
  - stabilization stage, Dravet syndrome, 137, 142
  - stigma, 109
  - stigma with epilepsy, 32
  - stiripentol, 146
  - subtle seizures. See neonatal seizures
  - suicidal ideation, 20

**T**
- task-based activation, 54–56
- task-free functional magnetic resonance imaging, 57
- temporal lobe epilepsy (TLE), 30, 48
- TLE. See temporal lobe epilepsy
- topiramate (TPM), 81–82, 88, 146
  - TPM. See topiramate
  - transitory cognitive impairment, 72
- TSC. See tuberous sclerosis complex
- tuberous sclerosis complex (TSC), 131–132

**U**
- UKISS. See United Kingdom Infantile Spasms Study
- United Kingdom Infantile Spasms Study (UKISS), 123, 126, 128–129
- U.S. Preventive Services Task Force (USPSTF), 79, 83
  - USPSTF. See U.S. Preventive Services Task Force

**V**
- VABS. See Vineland Adaptive Behaviour Scales
  - valproate (VPA), 80, 82, 86–87, 146
- Vineland Adaptive Behaviour Scales (VABS), 44, 125–126, 128
- visual tasks, 55
  - visuospatial skills, 179
- VPA. See valproate

**W**
- Wada-test, 174
- West syndrome, 46, 122

**Z**
- ZNS. See zonisamide
- zonisamide (ZNS), 81–82, 88