

Index

Locators in **bold** refer to figures and tables

ABM (attention bias modification), absolute ceiling effect, assessment, 235 abuse, childhood, 5. see also childhood trauma academic functioning. see educational functioning action-based cognitive remediation (ABCR), 315, 316, 317 activities of daily living (ADL), 16, activity scheduling, cognitive remediation, 315, 316 acute clinical stage, inflammation, 163, 164 AD. see Alzheimer's disease ADHD. see attention deficit/ hyperactivity disorder adherence to treatment, 161 clinician-patient relationship, 42,43 and cognitive dysfunction, 32-33 exercise, 333 functional outcomes, 140 adolescent depression. see pediatric depression Advanced Finances Task (AFT), 139 aerobic exercise. see exercise affective neuroscience, 257 age of onset, 1, 113, 117, 119. see also late-onset MDD agitation. see psychomotor speed AIC (anti-inflammatory cytokines), 162 alcohol intoxication, 18, 19, 20 algorithms, assessment, 37 alternative medicine, 275, 286 Alzheimer's disease (AD), 16, 17, 18, 24, 237 insulin resistance, 214, 215, 216 American Academy of Child and Adolescent Psychiatry (AACAP), 47 amphetamine, 23 amygdala anatomy, 63 biological mechanisms of MDD development, 5-6 biomarkers of illness, 149, 153, 154

emotional processing, 83, 202, 263, 264 inflammation, 168, 169 negative cognitive bias, 202 neural circuits, 197 post-recovery deficits, 111 progressive cognitive deficits, 117 rumination, 202-203 social emotional processing, 83, 93,96 social exclusion, 88 anatomy of brain, 60-66, 116-117 anhedonia, 83, 84 animal studies, erythropoietin, **292**, 293 ANT (Attention Network Task), **49-50**, 51 antecedents to illness. see predictions of future depression; premorbid cognitive function anterior cingulate cortex. see cingulate cortex anticholinergic effects, medication, 283. see also tricyclic antidepressants antidepressant medication, 275-280, 278, 283 amygdala, 197 baseline cognitive function, 274 biomarkers of illness, 74, 151 combined with CBT, 274 effects on cognitive dysfunction, 160, 275 emotional processing, 264 erythropoietin, 291 functional outcomes, 126 hot cognition, 72, 73 insulin resistance, 213 neurotoxicity hypothesis, 119, 120 novel/fast-acting, 74-76 response to treatment, 169, 260 social cognition, 106 see also SNRIs; SSRIs; tricyclic antidepressants antiglucocorticoid medication, 188 anti-inflammatory cytokines (AIC), anti-inflammatory treatments, 162

erythropoietin, 293 insulin treatment, 282-283 anxiety disorders, 39, 64-65, 83 apoptosis, 117, 293 Applied Cognition-General Concerns (ACGC) Scale, 250 arithmetic, 261, 309-310 ARTIST study, pain comorbidity, 39 ASRS (Attention Deficit Hyperactivity Disorder Self-Report Scale), 280 assessment, indications for, 35-37. see also measurement astrocytes, 61-62 attention, 1 age of illness onset, 113 biomarkers of illness, 147, 147, 149, 150-151 clinician-patient relationship, 42 and functional outcomes, 129-134, 258-260 measures, 229-230, 231 negative cognitive bias, 201-202 neural circuits, 199, 201-202 number of lifetime depressive episodes, 116 objective measures, 36 pediatric depression, 48-52 post-recovery deficits, 111 predictive validity of deficits, 15-17, 17 psychotherapy, 119-120 and rumination, 264-265 three-component model, 6 treatment interventions, 275-276 see also cold cognition attention bias modification (ABM), 268 Attention Control Training Intervention, 309 attention-deficit/hyperactivity disorder (ADHD) antecedents to illness, 3-5, 8, 8-11 white matter integrity, 65 working memory, 71 Attention/Deficit Hyperactivity Disorder Self-Report Scale (ASRS), 280 Attention Network Task (ANT), **49-50**, 51

340

Index

Auditory Verbal Learning Test attention and processing Brixton Spatial Anticipation Test, 232 (AVLT), 55 speed, 260 bupropion, 276 Australian study, alcohol biomarkers of illness, 153 intoxication, 18-20, 19 cellular anatomy, 62 calcium homeostasis, 210 California Verbal Learning Test autism, social cognition, 92 erythropoietin, 300 HPA axis, 184-185, 186 (CVLT), 152, 276 autonomic nervous system, and insulin resistance, 210 insulin treatment, 282-283 CAM. see complementary progressive cognitive deficits, 116 alternative medicines BAC (blood alcohol concentration), Cambridge Cognitive Examinationwhite matter integrity, 65 18-19, 19 blood alcohol concentration (BAC), Revised (CAMCOR), 2, 9 baseline cognitive function 18-19, **19** cancer risks, erythropoietin, 301 blood-brain barrier (BBB), 61, CANTAB (Cambridge and antidepressant medication, 274 289, 291 Neuropsychological Test blood flow to brain. see cerebral Automated Battery), 70, 71, measures, 237 primary care, 37, 41 blood flow 117, 232 basolateral nucleus (BLA), blood lipids, and insulin resistance, functional outcomes, 131, 133, 138 amygdala, 168 210, 213, 215 quality of life, 137 BBB (blood-brain barrier), 61-62, blood oxygen level detection cardiovascular disease, 113, 209 289, 291 (BOLD), 61 case finding approach, primary body language, 92, 102, 106. see also BDNF. see brain-derived care, 37 neurotrophic factor social cognition CAT (computerized adaptive BDQ (Brief Disability body mass index (BMI), 330 testing), 250 Questionnaire), 128, 135 bottom-up process, hot cognition, catastrophic response, to negative Beck Depression Inventory (BDI), 70,73 feedback, 72 32-33, **33** BPI (Brief Pain Index), 38 catastrophizing Beck model. see cognitive model of brain anatomy, 62-64, 116-117 cognitive dysfunction, 245 depression brain connectivity. see neural insomnia comorbidity, 40 Behavior and Symptom Identification connectivity see also negative cognitive bias Scale (BASIS-32), 138 brain-derived neurotrophic factor catecholamines, 328. see also behavioral inhibition. see response (BDNF) dopamine; norepinephrine; inhibition biomarkers of illness, 146 serotonin behavioral treatment interventions. erythropoietin, 289 caudate, 263 see cognitive behavioral exercise effects, 329, 332-333 causation, cognitive dysfunction, therapy; cognitive remediation HPA axis, 187 CBB (CogState Brief Battery), 21 therapy; diet; exercise progressive cognitive benzodiazepines, 40, 118 deficits, 117 CBT. see cognitive behavioral bias, memory, 265, 268-269. see also brain function, 5-6, 60 therapy negative cognitive bias CCN. see cognitive control network biomarkers of illness, 153 biofeedback, 266 cognitive remediation, 314 CDQ (Cognitive Dysfunction biological models. see neurobiology and insulin resistance, 211, Questionnaire), 250 of depression 215-217 cellular anatomy, brain, 61-62, 65 biomarkers of illness, 145, 147, 150, pediatric depression, 52-53 central nucleus (CeA), amygdala, 151-154 reward processing, 54-55 168 central tendency, cognitive antidepressant medication, 151 self-focus, 84-85 cytokines, 169 social and emotional brain, 82 dysfunction, 237 default mode network, 217 see also neural connectivity; cerebral autosomal dehydroepiandrosterone, 183 neurobiology of depression; dominant arteriopathy, early morning cortisol, 74 neuroscience of functional subcortical infarcts, and endophenotypes, 145-146, outcomes leukoencephalopathy 147-148, 149 brain injury, cognitive remediation, (CADASIL), 200 epiphenomena, 148, 151-154 306, 319 cerebral blood flow fractional anisotropy, 64-65, 66 brain size, and cognitive endophenotypes, 147 glial cells, 61-62 dysfunction, 63-64 insulin resistance, 210 hippocampal volume, 63 brain structure, chronic exercise changes over time, 25 hot vs. cold cognition, 70 effects, 329, 330 self-report instruments, 245 insulin resistance, 213 bridging activities, cognitive significance of, 23 neuroimaging/genetic, 146 remediation, 315 childhood trauma oxytocin, 88 BRIEF-A self-report scale, 281 biological mechanisms of MDD pediatric depression, 55, 56 Brief Disability Questionnaire development, 5-6 symptomatic and remitted stages, (BDQ), 128, 135 biomarkers of illness, 152 147, 150, 160 Brief Pain Index (BPI), 38 HPA axis stress response, 185 British Columbia Cognitive white matter neurobiology, 203 physical and sexual abuse, 6

Complaints Inventory

(BC-CCI), 246-247, 247, 251

bipolar disorder

antecedents to illness, 5

see also neurodevelopmental

abnormalities; stress

Index

341

children. see pediatric depression cognitive dysfunction in MDD, Choice Reaction Time (CRT) task, 64-65, 242-244, 243 8 - 11biomarkers of illness, 147-154, 36, 231 chronic fatigue syndrome (CFS), 147, 150 182 and brain size, 63, 64 clinical significance, 16 cingulate cortex, 147 anatomy, 63 efficacy of treatment attentional bias, 201-202 interventions, 284-285 biological mechanisms of MDD and functional outcomes, 128, development, 5-6 129-134 deep brain stimulation, 76 measures, 233, 234 emotion perception, 263 neural correlates, 60, 64 neural circuits, 199 pediatric studies, 49-50 neuroscience of functional self-report instruments, 34. 32-34, 33 outcomes, 259 see also Perceived Deficits Questionnaire comorbidity pain, 38 pediatric depression, 53 Cognitive Dysfunction Questionnaire (CDQ), 250 progressive cognitive deficits, 117 self-focus, 85 cognitive efficiency. see processing 37 - 40social cognition, 96-99 speed social exclusion, 86, 87, 88 cognitive flexibility, 48, 52, 232, 308. working memory and executive see also executive function; neuroplasticity function, 262 citalopram, 106 Cognitive Impairment Associated clinical outcomes, 73, 140. see also with Schizophrenia (CIAS), functional outcomes and 237 284-286 recovery cognitive-interpersonal clinician-patient relationship, vulnerability to depression treatment models, 265 primary care, 41-43 coding tasks, 230 cognitive model of depression, 72, cognition 149, 201 cytokine effects, 165-166 and emotion distortion and definitions, 60 biases, 258, 264 emotion linkage, 149, 152, 153 cognitive neuropsychological HPA axis, 180-182, 185-187, 186 model of depression, 149, 150 insulin resistance, 211 cognitive neuroscience, distinction see also social cognition from affective neuroscience, cognitive activation, 307-308 257 cognitive remission. see remission cognitive reappraisal, 265 Cognitive and Physical Functioning cognitive remediation (CR), 266, Questionnaire (CPFQ), 35, 306-307 237 247-248, **251-252** brain function model, 314 cognitive behavioral therapy (CBT) evidence-based studies, 313, 314 combined with antidepressant future directions for study, medication, 274 318-319 HPA axis, 187 HPA axis, 188 neuroscience of functional medication interactions, 318 outcomes, 268 motivational issues, 317-318 progressive cognitive deficits, 120 pillars of treatment, 307-309 response to treatment, 182 pseudospecificity of treatment Test, 232 cognitive control network (CCN), response, 318 258, 263, 268 psychotherapy model, 314, attention and processing speed, 315-316, 315, 317 259 rationale for using with MDD, emotion perception, 263 and treatment targets/outcomes, symptom profiles, 317 cortisol levels treatment interventions, 282, 266 working memory and executive 284-286 function, 261 cognitive reserve, 3. see also IQ cognitive distortions. see negative cognitive therapies, 197. see also cognitive bias cognitive behavioral therapy Cognitive Drug Research (CDR) CogState Brief Battery (CBB), 21 computerized assessment Cohen's d values, 16, 17, 20, 21, 71

cold cognition, 257

antecedents to illness, 3, 4, 5, 6, clinician-patient relationship, cognitive alterations during course of illness, 69-76 combination treatments, 274 neural circuits, 70 neuroanatomy, 60 novel/fast-acting medication, 75 pediatric depression, 48, 51, 52 psychological interventions, 154 screening tools in primary care, as trait biomarkers, 70, 71, 74 addressing in primary care, 31, 32 assessment in primary care, cardiovascular, 113 cognitive remediation, 317 functional outcomes, 140 pediatric depression, 56 complementary alternative medicines (CAM), 275, compliance. see adherence to computer-assisted cognitive remediation, 307-308, 311, computerized adaptive testing (CAT), 250 computerized assessment instruments, 126 concentration, 15, 131, 147 confounding factors erythropoetin, 294 measures of cognitive dysfunction and change, 236, medication, 63, 117 pediatric illness, 56 progressive cognitive deficits, 117 connectivity, brain. see neural connectivity Continuous Performance Test (CPT), 49, 51 Controlled Oral Word Association cortico-limbic circuits, 153 corticosteroids, 183, 184. see also hypocortisolism cortico-striatal-pallidal-thalamic circuits, 198 biomarkers of illness, 55, 74 salivary, 55, 180 social exclusion, 86 CPFQ (Cognitive and Physical Functioning Questionnaire), 35, 247-278, **251-252** CPT. see Continuous Performance

system, 277

Test

342

Index

CR. see cognitive remediation diary techniques, 86 CRH-R1 (CRH receptor 1 gene), diet, treatment interventions, 17-20, 18 183 - 184284-285 CRT (Choice Reaction Time) task, diffusion-tensor imaging (DTI), **36**, 231 61,64 cumulative number of episodes. see Digit Span Test, 334 number of lifetime depressive Digit Symbol Substitution Test 235 episodes (DSST), 36, 230, 238, 277, cyberball paradigm, social 278, 279 exclusion, 86, 88 distortions, cognitive. see negative cytokine models of depression and cognitive bias cognition, 162 diurnal patterns of cognitive 268 amygdala, 165, 168-169 dysfunction, 236 molecular mechanisms, 165-166 divided attention, 258, 260. see also neurodegenerative effects, 166-167 attention see also inflammation DLPFC. see dorsolateral prefrontal cortex data analysis, measures of cognitive DMN. see default mode network dysfunction, 237-239 dmPFC (dorsomedial prefrontal DDS (Denver Development cortex), 267 170 Screening Test), 5 donepezil, 23 definitions, 81 decision-making, DSM criteria, 15 dopamine, 328 dopamine reuptake inhibitors, 75 297, **298** declarative memory, 112, 181 deep brain stimulation (DBS), 76, 281 dorsal anterior cingulate cortex. see default mode network (DMN), cingulate cortex 82, 87 dorsolateral prefrontal cortex (DLPFC), 147 insulin resistance, 217-219, 219 attentional bias, 201-202 neuroscience of functional outcomes, 258, 267, 268 biological mechanisms of MDD Deficits in Executive Function Scale development, 5-6 (DEFS), 4 biomarkers of illness, 149, 153 definitions emotional processing, 202 cognition, 60 neuroscience of functional emotions, 81 outcomes, 259 epiphenomena, 151 self-focus, 84, 85 executive function, 261 social exclusion, 87 exercise, 321-322 dorsomedial prefrontal cortex social cognition, 102, 106 (dmPFC), 267 119 social processes, 82 drug treatment. see medication working memory, 261, 325 DSST. see Digit Symbol Substitution dehydroepiandrosterone (DHEA), Test 183, 188 DTI (diffusion-tensor imaging), dementia 61,64 268 duloxetine, 275, 277, 279, 280, 283, prodromal phase, 119, 235 and progressive cognitive deficits, 284, 285, 318 110, 118-120 duration of illness social cognition, 96-99 anatomy of brain, 63 see also Alzheimer's disease biomarkers of illness, 152, 153 DEMO trial, exercise, 332, 333 and clinical outcome, 73 147, 149 demyelination, 195 and rumination, 265 Denver Development Screening see also number of lifetime Test (DDS), 5 depressive episodes developmental abnormalities. dyslipidemia, 210, 213, 215 see neurodevelopmental abnormalities early intervention biomarkers of illness, 73-74 dexamethasone suppression test epidemiology (DST), 183, 184, 186 pediatric depression, 56 predicting future depression, 8 DHEA (dehydroepiandrosterone), 242, 243 and progressive cognitive deficits, 183, 188 diabetes, 209. see also insulin see also treatment interventions resistance Diagnostic and Statistical Manual of education, patient, 32, 43 Mental Disorders (DSM-5), 1, educational functioning, 48, 70 15, 69, 147 ADHD, 3

and cognitive dysfunction, working memory, 71 effect sizes, measures of cognitive dysfunction, 229, 278 effective ceiling effect, assessment, effort-automatic hypothesis, 152 electroconvulsive therapy (ECT), 281, 285, 291, 310 emotion network (EN), 258, 267, emotion(s)/emotional processing antidepressant medication, 264 bias, 1, 83, 202, 264. see also negative cognitive bias brain function, 82 and cognition, 149, 152, 153 cytokine model, 165, 166, 168, erythropoietin, 294, 295-296, neuroscience of functional outcomes, 263-264 regulation, 82, 87, 257, 258. see also response inhibition top-down processes, 197 see also hot cognition employment status, 70, 161 and cognitive function, 16, 17, 18, 20, 21, 130, 131, 133 functional outcomes, 125, 126, 127, 135-137 primary care clinician-patient relationship, 43 and progressive cognitive deficits, working memory and executive function, 262 see also psychosocial functioning EN (emotion network), 258, 267, Endicott Work Productivity Scale (EWPS), 280 endophenotypes, 110 antecedents to illness, 112 biomarkers of illness, 145-146, enjoyment of life, psychosocial functioning, 138-139 environmental factors biomarkers of illness, 153 measures of cognitive dysfunction and change, 236 cognitive dysfunction in MDD, insomnia comorbidity, 39 major depressive disorder, 1, 15 pain comorbidity, 37, 38 recurrence risk, 257 youth depression, 47 epigenetics, 146, 185

Index

343

epiphenomena cognitive deficit biomarkers of illness, 148, 151-154 definitions, 151 see also state vs. trait cognitive dysfunction episodic memory and functional outcomes, 129 measures, 229, 231 predictive validity, 2, 15 Epworth Sleepiness Scale, 40 erythropoietin (EPO), 289, 290-291, 302 animal studies, 292, 293 clinical limitations, 299-302 clinical trials, 293-299, 295-296, 298, 300 confounding factors, 294 future perspectives, 302 memory, 290, 291, 293, 294, 295-296, 298, 299, 301 escitalopram, 275, 312, 318 etiology, cognitive dysfunction, 153 European Study of the Epidemiology of Mental Disorders, 135 evidence-based studies cognitive remediation, 309-315, 313 exercise, 323, 333 see also meta-analyses EWPS (Endicott Work Productivity Scale), 280 exclusion, social, 81, 86, 87, 87, 88 executive function, 1 age of illness onset, 113 biomarkers of illness, 147, 149 definitions, 261 erythropoietin, 295-296, 299 and functional outcomes, 129-134, 261 insulin resistance, 209, 211 measures, 230, 232 neural circuits, 200 number of lifetime depressive episodes, 116 objective measures, 36 pediatric depression, 48, 51, 52 post-recovery deficits, 111 predictive validity, 3, 4, 15 primary care clinician-patient relationship, 42 progressive cognitive deficits, 119 three-component model, 6 treatment interventions, 275 tricyclic antidepressants, 117 see also cold cognition exercise, 286, 321-323, 334 acute exercise effects, 323-325, 328-329 chronic exercise effects, 325-327, 329-331 evidence-based studies, 323, 333 functional mechanisms, 327-331

pediatric depression, 56 treatment interventions, 281, 282, 284-285 WHO recommendations, 322 experiment effects, measures of cognitive dysfunction, 236 explicit (declarative) memory, 112, 181 eye-tracking pediatric depression, 52 social and emotional processing, FA (fractional anisotropy), 64, 65, 66 Faces Pain-Rating Scale (FPRS), 38 facial processing, 92, 93-95, 265 case-control studies, 96-99, 101 emotion perception, 262-264 negative bias, 83, 154 novel/fast-acting medication, 75 pediatric depression, 53 and severity of depression, 103-105 see also social cognition false positive classification, cognitive dysfunction, 20, 21 familial studies, 149. see also twin studies far transfer, cognitive remediation, fast-acting medication, 75 fatigue, and cognitive dysfunction, 18, 19, 19 fear conditioning, amygdala, 168 feedback mechanisms, HPA axis, 180. see also homeostasis fight or flight response, 72, 214 first episodes of MDD, biomarkers, 148 FKBP5 gene, 183 flexibility. see cognitive flexibility; neuroplasticity fMRI. see functional magnetic resonance imaging FOCUS study, 238, 238 forced choice paradigm, 231 FPRS (Faces Pain-Rating Scale), 38 fractional anisotropy (FA), 64, 65,66 frontal cortex, 63. see also prefrontal cortex frontal lobes, white matter tracts, 200 fronto-cingulate cortex, pediatric depression, 52 fronto-striato-limbic white matter tracts, 200 functional connectivity analysis, default mode network, 218, 219 functional magnetic resonance imaging (fMRI) neural circuits, 197

pediatric depression, 52

social exclusion, 88

functional outcomes and recovery, 125, 126, 128, 140, 161 assessment, 128, 135 attention and processing speed, clinical implications, 139-141 cognitive dysfunction, 70, 110, 128, 129-134 emotion distortion and biases, 265-266 emotion perception, 263 neuroscience of, 257-258 occupational functioning, 135-137. see also employment status primary care, 30, 31 and progressive cognitive deficits, 119 quality of life, 137-138 social cognition, 93, 95-100, 106 subjective measures, 243 working memory and executive function, 262 see also psychosocial functioning; remission Gage, Phineas, 200 gamma aminobutyric acid (GABA), 18, 195 gaze behavior. see eye-tracking gender effects, cognitive deficits, 117 genetics antecedents to illness, 112 biomarkers of illness, 146, 147, 153, 169 familial studies, 149 HPA axis stress response, 183-184, 185 predicting future depression, 6-8 serotonin transporter gene, 74 white matter neurobiology, 195-196 see also endophenotypes glial cells, 61, 62, 65 cytokine model, 167 pathology of white matter, 195 progressive cognitive deficits, 117 Global Severity Index, psychological functioning, 5, 10 glucocorticoids/glucocorticoid receptors, 162, 180, 181, 183, 185 glucose metabolism, 61, 63. see also insulin resistance glutamate neurotransmission, 61, 195 glycogen synthase kinase 3 beta (GSK3β), 293 goal-setting, cognitive remediation, 317, 318 gold standard measures cognitive remediation, 306 neuropsychological assessment as, 244

and subjective measures, 250

344

Index

Go/NoGo task, 232 exercise, 333 pediatric depression, 49-50, 50, 51 gray matter, 62, 63, 66 group therapy, 100 Hamilton Depression Rating Scale (HDRS), 9 "hate circuit" (white matter tracts), 197 health-related quality of life. see quality of life heritability, 7, 153. see also genetics HIF (hypoxia inducible factor), 290 hippocampus/hippocampal volume, 60 anatomy, 62-63, 63 antidepressant medication, 119 biological mechanisms of MDD development, 5-6 biomarker for response to treatment, 63 biomarkers of illness, 148, 152 erythropoietin, 290, 291, 294, 295-296, 297, 298 exercise effects, 329-331, 332-333 insulin resistance, 209, 211, 215-217, 217, 218 neural connectivity, 220. see also default mode network pathology of white matter, 195 progressive cognitive deficits, 116-117 rumination, 202-203 stress effects, 153, 180-182 see also long-term potentiation holistic treatment interventions, 76. see also multi-modal approaches HOMA-IR, 216-217, 217, 218. see also insulin resistance homeostasis calcium, 210 endocrine, 209 HPA axis, 180, 182 and threat of social rejection, 87 homework, cognitive remediation, 312, 313 hospitalizations, number of lifetime depressive episodes, 113-118 hot cognition, 1, 257 biological mechanisms of MDD development, 6 biomarkers of illness, 154 clinician-patient relationship, 41, 41 cognitive alterations during IMDCP (International Mood course of illness, 69-73 Disorders Collaborative

insomnia comorbidity, 40 mindfulness-based meditation processes, 283 neural circuits, 70 neuroanatomy, 60 novel/fast-acting medication, 76 objective measures, 35 pediatric depression, 48 screening tools in primary care, 32, 33 as state biomarkers, 70 see also emotion(s)/emotional processing HPA axis. see hypothalamicpituitary-adrenal (HPA) axis hypercortisolism, 179, 182 antecedents to illness, 112 biological mechanisms of MDD development, 5-6 insulin resistance, 214 post-recovery deficits, 111 progressive cognitive deficits, 117 hyperreactivity, neural networks, 268 default mode network, 267 emotion perception, 263 prefrontal cortex, 259 working memory and executive function, 261-262 hypocortisolism, bipolar disorder, 184 hyporeactivity, neural networks, 268 default mode network, 267 emotion perception, 263 prefrontal cortex, 259 hypothalamic-pituitary-adrenal (HPA) axis, 179, 181, 188 biological mechanisms of MDD development, 5 bipolar disorder, 184-185, 186 cognition, 180, 185, 186 cytokine model, 162, 165 future directions for study, 187 homeostasis, 180, 182 insulin resistance, 210, 211, 213 measures of activity, 180 neurobiological effects, 187 progressive cognitive deficits, 117, 162 receptors. see glucocorticoid receptor; mineralocorticoid receptor social exclusion, 86, 87 stress response, 153, 179, 182, 183 hypoxia, erythropoietin, 290 hypoxia inducible factor (HIF), 290 IAPS (International Affective Picture System), 297 IGT (Iowa Gambling Task), 49-50, 50, 51

Project), 280

immune dysregulation, 86, 161,

170. see also inflammation

incidence. see epidemiology indications for cognitive assessment, 35-37 individual-level measures of variation, cognitive dysfunction and change, 20, **21**, **22**, 24–26 inflammation, 160, 169-170 amygdala, 165, 168-169 chronic exercise effects, 330 emotional regulation, 165, 168, 170 HPA axis, 187 molecular mechanisms, 165 neurobiology, 161-163 neurodegenerative effects, 166-168 pathology of white matter, 195 staging model, 163-165, 163, 164 infliximab, 162 inhibition, emotional/behavioral. see response inhibition insomnia, 39-40, 185, 265 Insomnia Severity Index, 40 insula, 86, 263 insulin resistance, 209-211, 220 and brain function, 211, 215-217 cognitive impairment, 214-215 default mode network, 217-219, 219, 220etiology, 213-214 hippocampal volume, 215-217, 217, 218 and major depressive disorder, 211-213 insulin treatment, 282-283, 284-286 insulin-like growth factor 1 (IGF-1), 329, 333 integrated models, 265 intelligence quotient. see IQ interferon, 165, 166-167 interleukins, 165, 166-167, 168-169 International Affective Picture System (IAPS), 297 International Mood Disorders Collaborative Project (IMDCP), 280 interpersonal interactions, and MDD, 92. see also social cognition interventions. see treatment interventions introspection, measures of cognitive dysfunction, 235 Iowa Gambling Task (IGT), 49-50, 50,51 IQ (intelligence quotient) cognitive remediation, 310 cognitive reserve, 3 predicting future depression, 9-11,71 irritability, in youth depression, 47

combination treatments, 274

deep brain stimulation, 76

erythropoietin, 297

ketamine, 24, 75-76

kindling effect, progressive

ketoconazole, 188

Cambridge University Press 978-1-107-07458-3 - Cognitive Impairment in Major Depressive Disorder: Clinical Relevance, Biological Substrates and Treatment Opportunities Edited by Roger S. McIntyre Index More information

Index

345

cognitive deficits, 120 late-onset MDD biomarkers of illness, 151 neurotoxicity hypothesis, 113 vascular hypothesis, 194-195 see also age of onset learning, 1 cytokine effects, 165-166 objective measures, 36 see also cold cognition; memory length of the depressive episodes. see duration of illness life satisfaction. see quality of life limbic cortex anatomy, 63 insulin resistance, 209 progressive cognitive deficits, 116-117 lipids, blood, 210, 213, 214-215 lisdexamfetamine, 284-285 Longitudinal Interval Follow-up Evaluation-Range of Impaired Functioning Tool (LIFE-RIFT), 136, 138-139 longitudinal studies biomarkers of illness, 150-151 cognitive dysfunction in MDD, 242 functional outcomes, 129 neurotoxicity hypothesis, 114-115 pediatric depression, 54-55 predicting future depression, 2-3, 8-11 white matter integrity, 65 long-term potentiation (LTP), 289 chronic exercise effects, 329-330 insulin resistance, 211 cytokine effects, 166 see also brain-derived neurotrophic factor low positive affect, 83. see also negative cognitive bias magnetic resonance imaging (MRI), 61, 116, 147-148 maintenance treatment, youth depression, 47-48 major depressive disorder (MDD) age of onset, 1 cognitive dysfunction in, 243, 244 DSM criteria, 15 incidence and prevalence, 1, 15 interpersonal interactions, 92. see also social cognition protective factors, 3 maladaptive strategies, pruning, 308. see also cognitive remediation maladaptive thought processes, 154. see also negative cognitive bias

primary care, 30-32, 41-43 progressive cognitive deficits, 118 - 120see also treatment interventions MAPK (mitogen-activated protein kinase) pathway, 169 Massachusetts General Hospital Cognitive and Physical Functioning Questionnaire, 35, 247-248, **251-252** MATRICS Consensus Cognitive Battery (MCCB), 237 McGill Pain Questionnaire, 38-39 MDD. see major depressive disorder measurement of cognitive dysfunction and change, 15-16, 17, 70, 229, 239-240 cognitive deficits in MDD, 232-233, **234** cognitive domains, 232 computerized, 126 data analysis, 237-239 FOCUS study, 238 functional outcomes, 135 indications, primary care, 35 individual-level measures of variation, 20-22, 21, 25, 26 practice effects, 24-25 predictive validity, 15, 17 primary care, 32-35, 33 repeated assessment, 235-237 responses to treatment interventions, 22-24 screening, 233-235 social cognition, 102-106 socially relevant benchmarks, 17-20, 17, 18 subjective and objective ratings, 245-247, **246** medial prefrontal cortex (MPFC) rumination, 202-203 self-focus, 84-85 medical comorbidity. see comorbidity Medical Outcomes Study, 127, 250 medication, 278, 281 anatomy of brain, 63-64 benzodiazepines, 40, 118 cognitive remediation interactions, 318 confounding factors, 62-63, 117-118 cortisol lowering, 182-183 efficacy prediction, 257 novel, 75, 76. see also erythropoietin progressive cognitive deficits, 117 psychostimulants, 280-281, 283. see also modafinil see also antidepressant medication; specific drugs by meditation, mindfulness-based, 283 memory, 1, 6

bias, 202-203, 265, 268-269. see also negative cognitive bias clinician-patient relationship, 42 cytokine effects, 166 erythropoietin, 290, 291-293, 294-295, 298, 299, 301 and functional outcomes, 129-134, 135 HPA axis stress response, 180-182 insulin resistance, 209, 211 measures, 231, 231-232 negative bias, 32 neural circuits, 200-201, 202 pediatric depression, 55 predictive validity, 17 spatial, 147 see also cold cognition; declarative memory; episodic memory; working memory mental processing speed. see processing speed mentalizing network, 82 meta-analyses, 15, 20, 23 age of illness onset, 113 anatomy of brain, 63 biomarkers of illness, 148 cytokine model, 167 emotion perception, 263-264 exercise, 323-327, 331-334 eye-tracking, 83 neural circuits, 198 novel/fast-acting medication, 281 post-recovery deficits, 111 salience network, 268 working memory and executive function, 261 metabolic syndrome, 210. see also insulin resistance metacognition, 308, 309 methylphenidate, 75 metyrapone, 182-183 microglia, 61-62, 167 mifepristone, 185, 188 mild cognitive impairment, 120, 235 mindfulness-based meditation processes, 283 mineralocorticoid receptor (MR), 179-180, 183, 184-185 Mini Mental State Exam (MMSE), 2, 8-11, 35, 233, 244 MiniCog, 35 mirror neural system (MNS), 82 mirtazapine, 213, 276, 284-285 mitogen-activated protein kinase (MAPK) pathway, 169 modafinil (Provigil), 75, 280-281, molecular mechanisms, inflammation, 165 monitoring of cognitive processes (metacognition), 308, 309 monitoring technology, biomarkers of illness, 74

managing symptoms

346

Index

monoamines, HPA axis, 187 Montreal Cognitive Assessment (MoCA), 35, 233 motivational issues, cognitive remediation, 317-318 MR. see mineralocorticoid receptor MRI. see magnetic resonance imaging Multidimensional Scale of Independent Functioning (MSIF), 128 multi-modal approaches, 40-41, 75, 76. see also treatment interventions multiple sclerosis, 34, 201, 245, 293, **301** National Adult Reading Test (NART), 234-235 National Comorbidity Survey Replication (NCS-R), 127 n-back test, 36, 276 NEAR (Neuropsychological and Educational Approach to Remediation), 310 near transfer, cognitive remediation, 266 needs, fundamental, 86 negative automatic thoughts, 154 negative cognitive bias, 264 biological mechanisms of MDD development, 5-6 biomarkers of illness, 74, 149, 153 clinician-patient relationship, 41,42 cognitive model of depression, 258 cognitive remediation, 308, 315-316 emotion perception, 262-263 and emotional bias, 1, 83-84, 202, 264 erythropoietin, 294 hot cognition, 72 memory, 202, 265, 268-269 neural circuits, 196-197, 203 and self-focus, 84 see also catastrophizing negative feedback, catastrophic response to, 72 neural circuits (white matter tracts), 198 attention, 199, 201-202 executive function, 199-200 hot vs. cold cognition, 70 memory, 200-201, 202 negative cognitive bias, 203 processing speed, 198-199 neural connectivity antecedents to illness, 112 biomarkers of illness, 153

neural modulation, 266 neural networks. see cognitive control network; default mode network; emotion network; hyperreactivity; hyporeactivity; neural connectivity neuroanatomy, 62-63, 63-64, 66, 116-117 neurobiology of depression, 81, 161-163, 187 neurocognitive model of depression, 73 neurodegenerative disorders, 65, 166-167, 214 neurodevelopment, and erythropoietin, 290 neurodevelopmental abnormalities antecedents to illness, 3-5 biological mechanisms of MDD development, 5-6 biomarkers of illness, 152 predicting future depression, white matter integrity, 64-65 neuroendocrine malfunction, 161-163 neurogenesis cytokine models, 166 erythropoietin, 290 HPA axis, 187 insulin treatment, 282-283 neuroimaging antecedents to illness, 110 biomarkers of illness, 146, 147 - 148post-recovery deficits, 111 social and emotional processing, 83 white matter neurobiology, 196 see also specific modalities neuromodulatory treatment interventions, 274. see also neurostimulation neuroplasticity antecedents to illness, 112 cytokine model, 161-163, 166 erythropoietin, 289 exercise effects, 329-331 inducing, 306, 307. see also cognitive remediation insulin treatment, 282-283 progressive cognitive deficits, 121 see also brain-derived neurotrophic factor; cognitive flexibility neuroprogression models, 52, 56, 162. see also neurotoxicity hypothesis; progressive cognitive deficits neuroprotection, 165, 166-167 erythropoietin, 289, 290, 292

glial cells, 167-168

neuropsychological assessment

as gold standard, 244 snapshot assessments, 245 Neuropsychological and Educational Approach to Remediation (NEAR), 310 neuropsychological model of depression, 149, 150 Neuropsychological Test Battery (NTB), 238 neuroscience of functional outcomes, 260, 268-269 attention and processing speed, emotion distortion and biases, 264 emotion network, 258, 267-268 emotion perception, 264 future perspectives, 269 intervention targets, 268 salience network, 258, 268 working memory and executive function, 260-261 see also cognitive control network; default mode network neurostimulation, 281. see also deep brain stimulation; neuromodulatory treatment interventions; repetitive transcranial magnetic stimulation; transcranial direct current stimulation neurotoxicity hypothesis, 110, 118, 119 biomarkers of illness, 151 longitudinal studies, 114-115 see also neuroprogression models; number of lifetime depressive episodes neurotransmitter uptake, cellular anatomy, 61-62 neurotrophic factors, 289. see also brain-derived neurotrophic factor nitrosative stress, 161-163, 293 NMDA (N-methyl-D-aspartate) receptor antagonists, 75, 290 norepinephrine (noradrenaline) exercise effects, 329-331 hippocampal formation, 119 insulin resistance, 210 novel medication, 75. see also erythropoietin NR3C1 (glucocorticoid receptor gene), 184, 185 NTB (Neuropsychological Test Battery), 238 nucleus acumbens, 54-55 number of lifetime depressive episodes biomarkers of illness, 152 clinical outcomes, 73-74, 140 exercise effects, 330-331 neurotoxicity hypothesis, 114-115, 118 post-recovery deficits, 111 see also duration of illness

exercise effects on cognition,

329 - 331

psychotherapy, 120

stress effects, 153

Index

347

obesity, 210. see also insulin resistance objective cognitive measures, 233, 235 primary care, 36 vs. subjective measures, 244-245 occupational functioning. see employment status off-line social processes, social cognition, 82 oligodendrocytes, 61, 195 on-line social processes, social cognition, 82 orbitofrontal cortex (OFC), 111, 117, 263 other processing, theory of mind, 85 outcomes, clinical, 73, 139. see also functional outcomes and recovery over-general memories, 265, 268-269 oxidative stress, 161, 293 oxytocin, biomarkers of illness, 88 Paced Auditory Serial Addition Test, 309 pain comorbidity, 39 Pain Disability Index, 38 parental depression, children and adolescents, 55 paroxetine, 213, 277 patient education, 32, 42-43 patient engagement, cognitive remediation, 317-318 Patient Health Questionnaire (PHQ-9), 135 Patient Reported Outcome Measurement Information System (PROMIS), 250 patient indications for cognitive assessment, 35 pediatric depression, 47 cognitive dysfunction studies, 49 - 50executive function/attention, 48 - 52facial processing, 52-53 future directions for study, 56 memory, 55 parental depression, 55 processing speed, 53-54 reward processing, 54-55 social exclusion, 88 treatment interventions, 47-48, 56 see also educational functioning Perceived Deficits Questionnaire (PDQ), 239, 243, 248-250, 249, 252-253 occupational functioning, 135 primary care use, 30, 32, 33, 34 persistent cognitive dysfunction. see residual cognitive symptoms pessimism. see negative cognitive bias

PFC. see prefrontal cortex pharmacological treatment. see medication phase-specific neuroimmune model of clinical depression, 163. see also staging model of inflammation Phineas Gage, case of, 199-200 physical abuse, 5-6. see also childhood trauma physical activity, 321. see also exercise PICs. see pro-inflammatory cytokines planning, mental, 232. see also executive function polymorphisms, gene biomarkers of illness, 146 HPA axis stress response, 183-184, 185 serotonin transporter gene, 74 white matter pathology, 195-196 see also genetics positron emission tomography (PET), 63post-acute stage of inflammation, 163-165, **163** post-recovery deficits. see residual cognitive symptoms practice effects, assessment tests, 25, 236-237 precuneus, 52-53 predictions of future depression, 3 cognitive dysfunction, 17 prevention strategies, 6-8 see also premorbid cognitive function predictions of treatment response, 260, 261, 262 prednisolone suppression test (PST), 183 prefrontal cortex (PFC), 60 anatomy, 62-63 biological mechanisms of MDD development, 6 hyper or hyporeactivity, 259 insomnia comorbidity, 40 neural circuits, 198, 199 pediatric depression, 52 reward processing, 54-55 social and emotional processing, see also dorsolateral PFC; medial PFC; ventrolateral PFC premorbid cognitive function, 110 biomarkers of illness, 147-148, 149 cold cognitive deficits, 1, 8-11 neurotoxicity hypothesis, 118 progressive cognitive deficits, 112 see also predictions of future depression prenatal stress, and MDD development, 5-6

prevalence. see epidemiology prevention strategies, 6-8 primary care, 30, 43 assessment of cognitive impairment, 33, 37 comorbidities, 31, 32, 40 management strategies for impairment, 32 objective measures, 36 treatment interventions/ management, 42, 43 PRMQ (Prospective and Retrospective Memory Questionnaire), 250 problem-solving, 52. see also executive function problem-solving strategies, cognitive remediation, 308 procedural learning, 180-182 processing speed, 1 age of onset, 113 biomarkers of illness, 147 clinician-patient relationship, 42 cytokine effects, 166 erythropoietin, 290, 299 and functional outcomes, 129-134, 135, 260 neural circuits, 198-199 objective measures, 36 pediatric depression, 53-54 post-recovery deficits, 111 see also cold cognition; psychomotor speed prodromal phase of dementia, 120, 235 progressive cognitive deficits, 110, 120-121 antecedents to illness, 112 dementia risk, 120 neurotoxicity hypothesis, 114, post-recovery deficits, 110-112 see also neuroprogression models pro-inflammatory cytokines (PICs), 163. see also cytokine models of depression and cognition; inflammation PROMIS (Patient Reported Outcome Measurement Information System), 250 prosody, 92, 93, 102, 106. see also social cognition Prospective and Retrospective Memory Questionnaire (PRMQ), 250 protective factors, MDD, 3 proton MRI, 61 Provigil (modafinil), 75, 280-281, pruning maladaptive strategies, cognitive remediation, 308 pseudospecificity of treatment response, cognitive remediation, 318

348

Index

PST (prednisolone suppression progressive cognitive deficits, 118 test), 183 see also number of lifetime psychoanalytic-interactional group depressive episodes; risk therapy, 100 factors for MDD psychological interventions. red blood cell mass, erythropoietin see psychotherapy effects, 294, 299 psychomotor speed regional cerebral blood flow. see clinician-patient relationship, 42 cerebral blood flow diagnostic criteria, 15 regulation of emotion, 82, 87, measures, 230-231 257, 258. see also response see also processing speed inhibition psychosocial functioning, 70, 139, rejection, social, 81, 86, 87, 197 relapse rates, 70, 110. see also attention and processing speed, 260 number of lifetime depressive episodes; recurrence risk clinician-patient relationship, 43 emotion perception, 264 relational functioning, 161. see also functional outcomes, 125, social cognition 126-127 reliable change index (RCI), 25 pediatric depression, 47, 52 remission biomarkers of illness, 148 predicting future depression, 1, post-recovery deficits, 110, 259. 4,8-11and progressive cognitive deficits, see also residual cognitive 119 symptoms subjective measures, 242, 243 primary care, 31 see also employment status; social working memory, 72 see also functional outcomes cognition psychostimulants, 281, 283. see also and recovery; state vs. trait modafinil cognitive dysfunction psychotherapy, 286 Repeatable Battery for cognitive remediation, 314, 315, the Assessment of 315, 317 Neuropsychological Status (RBANS), 136 cold cognition, 154 efficacy, 257 repeated assessment, measures of progressive cognitive deficits, 120 cognitive dysfunction, 235, 236 and social cognition, 103 repetitive transcranial magnetic see also cognitive behavioral stimulation (rTMS), 266 therapy repression, memory, 200 psychotic features in MDD, 100, Research Domain Criteria (RDoC), 103, 118 reserve, cognitive, 3. see also IQ QIDS-SR (Quick Inventory of residual cognitive symptoms Depressive Symptomatology), biomarkers of illness, 151 32, 33 HPA axis, 187 quality of life, 125, 126, 128, 130, neuroscience of functional 130, 137. see also functional outcomes, 259 outcomes and recovery; number of lifetime depressive psychosocial functioning episodes, 113, 114 Quality of Life Enjoyment and progressive, 110-112. see also Satisfaction Questionnaire neuroprogression models (Q-LES-Q), 138 subjective measures, 243 see also state vs. trait cognitive RAVLT. see Rey Auditory Verbal dysfunction RESPECT trial, pain comorbidity, Learning Test RBANS (Repeatable Battery for 39 the Assessment of Neuroresponse inhibition psychological Status), 136 attention deficit/hyperactivity reappraisal, cognitive, 265 disorder, 3 reassurance seeking, 265 measures of cognitive reboxetine, 277 dysfunction and change, 232 recovery. see functional outcomes objective measures, 36 and recovery; remission pediatric depression, 52, 54 recurrence risk see also executive function;

attention and processing speed, 260 emotion distortion and biases, emotion perception, 263 late-onset MDD, 194 number of lifetime depressive episodes, 113 and rumination, 265 working memory and executive function, 262 resting state network. see default mode network retardation. see psychomotor speed reversible/functional changes, 93, 95, 106. see also functional outcomes and functional recovery reward processing, 54, 72, 84 Rey Auditory Verbal Learning Test (RAVLT), 36, 135, 138, 238, Rey Complex Figure Test, 138 risk factors for MDD ADHD, 3 antecedents to illness, 113 biomarkers of illness, 149, 153 exercise effects, 331 predicting future depression, 6 progressive cognitive deficits, 118 see also number of lifetime depressive episodes; recurrence risk risk taking, and reward, 72 rumination, 265, 268 biological mechanisms of MDD development, 5 biomarkers of illness, 154 clinician-patient relationship, 41 cognitive remediation, 309 default mode network, 267 emotion distortion and biases, 264 insomnia comorbidity, 40 neural circuits, 202 and self-focus, 84 and social cognition, 100, 103 and suicidal behavior, 265 salience network (SN), 258, 268 salivary cortisol levels, 55, 180, 182 satisfaction with life. see quality of life scar effect, 153, 259. see also neurotoxicity hypothesis SCG. see subgenual cingulate cortex

regulation of emotion

response to treatment, 169, 185, 260

and cognitive dysfunction, 70

exercise effects, 331

Schedule for Affective Disorders

biomarkers of illness, 153

cognitive dysfunction, 16, 17,

cognitive remediation, 266, 306,

cellular anatomy, 61-62

Age Children, 9

schizophrenia

17, 18

and Schizophrenia for School-

Index

349

erythropoietin, 293, 300 social cognition, 92, 96 working memory, 71 scientific brain training program, 312 screening, 233. see also measurement of cognitive dysfunction and change screening tools predicting future depression, 6 primary care, 30, 32, 33 see also specific instruments by SDS. see Sheehan Disability Scale selective attention, 258, 259. see also attention selective serotonin reuptake inhibitors. see SSRIs self-control. see response inhibition self-efficacy targeting, cognitive remediation, 315 self-esteem, and social exclusion, 88 self-focus, 84 self monitoring (metacognition), 308, 309 self-reference effect (SRE), word recall, 84 self-referential appraisal, rumination, 203 self-report instruments, 126, 235 functional outcomes, 135 primary care, 34 subjective measures, 244 see also specific instruments by name SENSO framework, threat of social rejection, 87 Sequenced Treatment Alternatives to Relieve Depression (STAR*D) study, 147, 243-244 serotonin exercise effects, 328 hippocampal formation, 119 HPA axis, 187 insulin resistance, 210, 211, 213 serotonin reuptake inhibitors. see SNRIs; SSRIs serotonin transporter gene, 74, 146, 169 sertraline, 276, 322 severity of illness, 118 biomarkers of illness, 152 functional outcomes, 126, 127 and rumination, 265 and social cognition, 100, 102, 103 sexual abuse in childhood, 5. see also childhood trauma SF-12 (12-item Short Form Health Survey), 137 SGC. see subgenual cingulate cortex Sheehan Disability Scale (SDS), 31, 34, 127, 242, **243** Shipley Institute of Living Scale, 4

short-term memory, 6 Simple Reaction Time (SRT), 36, 230, 231 simulations, cognitive remediation, 315 single-nucleotide polymorphisms (SNPs), 146, 195. see also polymorphisms sleeping problems. see insomnia smartphones, monitoring technology, 74 SMILE study (Standard Medical Interventions and Longterm Exercise), 322 snapshot assessments, 245 SNRIs (serotonin norepinephrine reuptake inhibitors), 119, 284 social cognition, 81, 87, 92, 102, 106 case-control studies, 96, 101 definitions, 102 facial processing, 93 future directions for study, 106 methodological issues, 102 remitted and symptomatic stages, 95,96 and severity of depression, 100, 102, 103 see also psychosocial functioning social engagement, and cognitive dysfunction, 17, 18, 19 social functioning. see psychosocial functioning social perception, 102 social processes, definitions, 82 social rejection, 81, 86, 87, 197 Social Skills Performance Assessment (SSPA), 139 somatic disorders, 182 spatial memory, 147 speed vs. accuracy effects, 236. see also processing speed speed of memory scores, 231 SSRIs (selective serotonin reuptake inhibitors), 284 biomarkers of illness, 151 insulin resistance, 213 novel/fast-acting medication, 75 and progressive cognitive deficits, response to treatment, 260 youth depression, 47 staging model of inflammation, 163 Standard Medical Interventions and Longterm Exercise (SMILE) study, 322 STAR*D (Sequenced Treatment Alternatives to Relieve Depression) trial, 147, 243-244 state vs. trait cognitive dysfunction biomarkers, 70, 147, 150, 151, 152, 154, 160 cold cognition, 70, 71 endophenotypes, 145, 147

executive function and attention, 111 functional outcomes, 140 post-recovery deficits, 110 primary care, 40 progressive cognitive deficits, 110 reward dysfunction, 54 social cognition, 95, 101 see also remission; residual cognitive symptoms Sternberg memory store task, 261 strategy planning, 232. see also executive function stress antecedents to illness, 112 biological mechanisms of MDD development, 5-6 biomarkers of illness, 152, 153 HPA axis response, 179, 182, 185 neurobiology, 161 progressive cognitive deficits, 117, 119, 120 reward processing, 54 striatum, 196, 263 Stroop Test, 9 antidepressant medication, 276 exercise, 333 objective measures, 36 pediatric depression, 49, 51 predicting future depression, 2 subgenual cingulate cortex (SCG), 53, 63, 149, 197, 263, 267 subjective measures, 242 functional impairment, 243 incidence and prevalence of dysfunction, 243 vs. objective measures, 244 psychometrically validated scales, 246 see also British Columbia Cognitive Complaints Inventory; Massachusetts General Hospital Cognitive and Physical Functioning Questionnaire; Perceived Deficits Questionnaire sub-syndromal stage, staging model of inflammation, 163 suicidal ideation, 100, 103, 161, 257, 265 surveys, occupational functioning, 136 sustained attention, 258, 259, 299. see also attention Symptom Checklist 90-revised, 4, 9 symptom profiling, 257, 317 symptomatic and remitted stages. see state vs. trait cognitive dysfunction

350

Index

symptoms, 32 changes during course of illness, 69 primary care, 30, 41 progressive cognitive deficits, 118 severity. see severity of illness youth depression, 47 see also managing symptoms synaptic development, cellular anatomy, 61 Syndrome X, 210. see also insulin resistance synergistic effects, catecholamines, technology, monitoring, 74 temporal lobe, 117 thalamus, 149, 202 theory of mind, 85, 92, 93, 95. see also social cognition therapeutic relationship, primary care, 41 THINC group, 35, 239 threat of social rejection (TSR), 87 three-component model of executive function, 6 TNFα (tumor necrosis factor), 165, 166, 169 "to-be-remembered-items" (TBRI), 231 top-down processes biological mechanisms of MDD development, 5 biomarkers of illness, 154 cold cognition as, 70, 73 emotional regulation, 197 total lifetime illness. see duration of illness; number of lifetime depressive episodes Tower of Hanoi task, 232 Tower of London planning task, 73 Trail Making Test (TMT), 9, 232, 239 antidepressant medication, 276 functional outcomes, 135 number of lifetime depressive episodes, 116 objective measures, 36 predicting future depression, 2 trait deficits. see state vs. trait cognitive dysfunction transcranial direct current stimulation (tDCS), 266 transfer, cognitive remediation, 307, 308 transnosographic scar, cognitive dysfunction as, 153, 259. see also neurotoxicity hypothesis trauma. see childhood trauma;

compliance. see adherence to treatment dietary factors, 284 efficacy, 119, 257, 282, 284 exercise, 281, 284 functional outcomes, 139, 268 guiding principles, 275 holistic approaches, 76 HPA axis, 187 insomnia comorbidity, 40 insulin treatment, 282, 284 multi-modal approaches, 40 neuromodulatory, 274 neurostimulation, 281. see also deep brain stimulation pain comorbidity, 39 pediatric depression, 47, 56 pharmacotherapy, 275, 278. see also antidepressant medication primary care, 32, 42 see also behavioral treatment interventions; early intervention; erythropoietin; managing symptoms; multi-modal approaches; psychotherapy; response to treatment treatment-resistant depression (TRD) cognitive remediation, 312, 313 erythropoietin, 299, 300 tricyclic antidepressants, 117, 283 tryptophan, 328. see also serotonin TSR (threat of social rejection), 87 tumor necrosis factor (TNFa), 165, 166, 169 12-item Short Form Health Survey (SF-12), 137 twin studies, 9 antecedents to illness, 112 cognitive deficit biomarkers of illness, 147 predicting future depression, 2 see also genetics unipolar depression, HPA axis, 182-184. see also major depressive disorder University of California San Diego Performance-Based Skills Assessment (UPSA), 279 updating of new information, threecomponent model, 6 vascular dementia, insulin resistance, 214 vascular endothelial growth factor (VEGF), 329-330, 333 vascular hypothesis late-onset MDD, 113 white matter neurobiology, 194-195 venlafaxine, 47

263-264 verbal impairments, 259, 261 erythropoietin, 294, 297, 299 and functional outcomes, 129-134, 138 pediatric depression, 49-50, 51,55 word recall, 2, 84 vigilance, biomarkers of illness, 150-151 visual memory, biomarkers of illness, 147 vortioxetine, 75, 277-280, 278, 283, 284 biomarkers of illness, 151 cognitive dysfunction and change, 23 cognitive remediation interactions, 318 vulnerability to MDD, 110, 147-148, 149. see also premorbid cognitive functioning WCST. see Wisconsin Card Sorting Wechsler Adult Intelligence Scale (WAIS), 230, 261 Wechsler Intelligence Scale for Children (WISC), 4, 53 Wechsler Memory Scale (WMS), 116, 135, 276 weight gain, antidepressant medication, 213 white matter hyperintensities (WMH), 195 white matter (WM) neurobiology, 195, 203 attention, 199, 201-202 executive function, 199-200 genetics, 195-196 memory, 200-201, 202 negative cognitive bias, 201-203 neural circuits, 196-198 neuroanatomy, 64-65, 66 neuroimaging, 196 pathology, 195 processing speed, 198-199 vascular depression hypothesis, 194-195 see also neural circuits (white matter tracts) WHO Disability Assessment Schedule, 135 WHO World Health Survey (WHS) study, 127 Wide Range Achievement Test-Revised, 4 Widespread Pain Index, 39 WISC. see Wechsler Intelligence Scale for Children

ventrolateral prefrontal cortex (VLPFC), 86, **87**, 111, 201

ventromedial frontal cortex, 93,

stress

depression

TRD. see treatment-resistant

treatment interventions, 23, 274,

cognitive remediation, 282, 284



Index

351

Wisconsin Card Sorting Test
(WCST), 148, 232, 276
WMS (Wechsler Memory Scale),
116, 135, 276
word recall, 2, 84. see also verbal
impairments
Work and Social Adjustment Scale
(WSAS), 35
work functioning. see employment
status
Work Limitations Questionnaire
(WLQ), 135, 280
Work Productivity and Activity
Impairment (WPAI), 243, 243

working memory, 1
cold cognition, 70–72
definitions, 260–261
exercise, 325
functional outcomes, 260–262
measures, 229–230, 231–232
novel/fast-acting medication, 75
number of lifetime depressive
episodes, 116
objective measures, 36
pediatric depression,
48, 51, 55
predicting future depression,
3–5, 17

three-component model of
executive function, 6
treatment interventions,
275–276
see also cold cognition
World Health Organization, 128,
135, 322
WSAS (Work and Social
Adjustment Scale), 35

years of education (YoE), 234 youth depression. *see* pediatric depression