# Index

abdominal examinations 67 adjustable continence therapy amygdala and Kluver-Bucy syndrome 44 (ACT) 121-2 abdominal massage 143-4 roles 44 afferent axons, types of 1 abdominal pain 32-3 and sexual functions 44-5 afferent nerve endings, in bladder 1 abdominoperineal resection 283 amyloid neuropathy 278 afferent nerves 89 see also familial amyloid Abrams-Griffiths (AG) number 208 polyneuropathy (FAP) afferent pathways 19 absorbent pads 86 changes 5-7 anal resting pressure (RP) 34 absorbent products, for urinary afferent signals, and bowel anal sphincter complex 25, 27 incontinence 86 function 31-2 see also external anal sphincter ACC see anterior cingulate cortex (ACC) (EAS); internal anal sphincter AG (Abrams-Griffiths) number 208 (IAS) ACEs (antegrade continence enemas) AIDP (acute inflammatory 148, 262 anal sphincter dysfunction, demyelinating symptoms 127 acetylcholine (ACh) 27 polyneuropathy) 280-1 mediation 2-3 anal sphincter motor units, neurogenic AIP (acute intermittent porphyria) release 1, 3, 101 changes 209 287 - 8ACh see acetylcholine (ACh) anal squeeze pressure (SQ) 34 alimentary tract see gut acquired neuropathies 278-80 aneurysms, anterior cerebral artery 175 α-adrenergic blockers 211 ACT (adjustable continence therapy) angina 159  $\alpha$ -adrenoreceptor agonists 250–1, 301–2 121-2animal studies α-adrenoreceptor antagonists (ARs) acute demyelinating encephalomyelitis ejaculation 52-3 applications 96 (ADEM) 235 hypersexuality 172-3 mechanisms 95-6 and bladder disturbances 67 Kluver-Bucy syndrome 172-3 in neurogenic detrusor overactivity acute hemispheric stroke, and urinary medial pre-optic area 198 treatment 95-6 sexual behavior, and subcortical disorders 179 α-adrenoreceptors 161 lesions 176 acute idiopathic autonomic neuropathy stimulation 1-2, 4 sexual responses 40 281 - 2cortical studies 42 alprostadil acute inflammatory demyelinating subcortical studies 42 efficacy 160 polyneuropathy (AIDP) in erectile dysfunction treatment 160 anismus 191-2, 212, 214 280 - 1side-effects 160 use of term 191 acute intermittent porphyria (AIP) altered sexuality 44 ankylosing spondylitis, and cauda 287 - 8equina syndrome 271–2 Alzheimer's disease (AD) acute motor axonal neuropathy and detrusor overactivity 92 anorectal digitation 136 (AMAN) 280-1 and urinary incontinence 180 anorectal investigations 135 acute stroke, and urinary AMAN (acute motor axonal anorectal manometry incontinence 179 neuropathy) 280-1 and bowel dysfunction 34-5 ADEMsee acute demyelinating American Spinal Injury Association eight-channel 34 encephalomyelitis (ADEM) (ASIA) 128 methodology 34 classification system 241 adenosine triphosphate (ATP) 2-3 in neurogenic bowel dysfunction release 3 management 140-1 amezinium 212 sensation testing 34 adherens junctions 2-3 amitriptyline 232

More information

anorectal physiology 135 tests 128, 135	penile erection induction 43 side-effects 200	autonomic nervous system (ANS), functions 27
anorectal videomanometry	archnoiditis 269-70	AVEN (Asexual Visibility and
multiple system atrophy 215 Parkinson's disease 191, 215 studies 190–1	Arizona Sexual Experience Scale (ASEX) 280	Education Network) 173 AVSS (audiovisual sexual
ansa lenticularis 176–7 roles 176	ARs see α-adrenoreceptor antagonists (ARs)	stimulation) 180
ANS (autonomic nervous system),	artificial urinary sphincter (AUS) 122	afferent 1 nerve 3–5
functions 27	ASEX (Arizona Sexual Experience Scale) 280	preganglionic, types of 28
antegrade colonic washouts 262	,	B12 deficiency 235
antegrade continence enemas (ACEs) 148, 262	asexuality, and temporal lobe epilepsy 173	back pain and cauda equina syndrome 272
anterior cerebral artery, aneurysms 175	Asexual Visibility and Education Network (AVEN) 173	chronic 270–1 severe 270
anterior cingulate cortex (ACC) roles 13–14 rostral 31–2	ASIA see American Spinal Injury Association (ASIA)	baclofen 104 applications 232
see also dorsal anterior cingulate cortex (dACC)	Aspidosperma quebracho-blanco (herb) 161	Barrington's nucleus 11–12, 189 roles, in defecation 30–1
anticholinergics 301-2	astrocytomas 270–1	Barthel Index 179-80
precautions 197 antidepressants 232	ATP see adenosine triphosphate (ATP)	behavioral retraining, for neurogenic bladder dysfunctions 79
antidiarrheal agents 146	audiovisual sexual stimulation	Bell-Magendie law 266
antimuscarinics	(AVSS) 180 Aδ-fibers 1	benign prostatic hyperplasia (BPH) 120
applications 74, 82, 197 classification 93	roles 11	hormone-mediated models of 96
clinical efficacy 90–2 reviews 90	augmentation cystoplasty see bladder	and Parkinson's disease 192
diffusion 93	augmentation	benzodiazepines 301-2
efficacy 224	AUS (artificial urinary sphincter) 122	β-adrenoreceptor agonists clinical efficacy 96
high-dose studies 92–3 licensed, in United Kingdom 90, 92	autoimmune autonomic ganglionopathy 282	mechanisms 96
mechanisms 89-90	autonomic disorders, and multiple	in neurogenic detrusor overactivity
in multiple sclerosis 92, 224–5 in neurogenic detrusor overactivity	system atrophy 210	treatment 96 side-effects 96
treatment 89–95	autonomic dysfunction 280-1	β-adrenoreceptors
efficacy 92–3 in neurological patients 93	and Lambert-Eaton myesthenic syndrome 288	activation 2–3, 10
in overactive bladder treatment	autonomic dysreflexia 144–5	stimulation 1–2, 4 bethanechol test 210
90–60, 259–60 in Parkinson's disease 94	and bowel dysfunction 33	biofeedback
recommendations 94–5	mechanisms 243 severity factors 243	in neurogenic bowel dysfunction
side-effects 90–1, 93–4, 224–5	and spinal cord injury 242–3	management 147, 262
targets 90 trials 90–1	symptoms 243 treatment 243	pelvic floor therapy 81
randomized controlled 91-2	autonomic failure, use of term	bisacodyl suppositories 145
and urinary retention 90 usage algorithm 224	210–11	bladder afferent nerve endings 1
antiparkinsonian drugs 200	autonomic function	roles 2
APHRODITE trial 161	assessment 241 classification 128	aging 8 autonomous hyperactive 273
apomorphine 191–2	autonomic nerves	bivalved 118
applications 231 efficacy 159, 231	damage, and pelvic surgery 281, 282 and neuromuscular disorders 278	brain control of, concepts 11 and brain lesions 177–8 and cerebrovascular disease 178–9

Index

More information

bladder (cont.) and cerebrovascular disease 178-9 bladder pain syndrome (BPS) 8 changing patterns, and multiple and diabetes mellitus 279 bladder pathophysiology system atrophy 210 differential diagnoses 67-9 lesion literature for 168 cortical control of 167 and familial amyloid and spinal reflexes 10 polyneuropathy 286-7 decentralized 273, 294-5 bladder scans 64, 69 and focal frontal lesions 167-71 and frontal tumors 170-1 full, peak activation areas 13 and hysterectomy 282-3 bladder sensation, and interoception and multiple sclerosis 221-7 functional brain imaging 12 - 14containment 227 studies 12 bladder stones 123 and head injuries 182 general measures 222 and spinal cord injury 244 immunohistochemical staining 1, 6 infections 227 low compliance 177-8 investigations 223 bladder storage management 221 management 222 α-adrenoreceptor antagonists and 96 neurological control of 1-9 other measures 224 disturbances 89 neuropathic 246 pathophysiology 221 impaired, treatment 224-6 obstructed 8 physical treatments 222 and multiple system atrophy 207 post-void residual volume 82 surgical treatments 226-7 see also urine storage pressure flow studies 70-1 symptoms 221-2 bladder surgery, in multiple retraining 222 and multiple system atrophy 206-12 sclerosis 226-7 and subcortical lesions 176 management 211-12 superficial layers 90 pharmacotherapy 211-12 bladder symptoms and multiple sclerosis 221-2 transverse section 102 and muscular dystrophies 288 and neurological diseases, and multiple system atrophy 206 urinary control 196 correlation 193 in Parkinson's disease bladder augmentation 117-18 and Parkinson's disease 192-8 future treatments 198 and spinal cord injury 248-9 and pelvic nerve injury 282 investigations 196-7 bladder augmentation management 196-7 physical examination 67 enterocystoplasty 117-18 and pure autonomic failure 282 pathophysiology 194-5 applications 117 and residual urine 82 pharmacotherapy 197 follow-up 118 and spina bifida 256 prevalence 193 future trends 118 and spinal cord injury 241-9 treatment 195-6 results 118 and spinal cord injury 242-3 treatment 247 surgical techniques 117-18 in suprasacral injuries 247 bladder-to-bladder excitatory selection criteria 117 treatment 10 reflex 9-10 see also neurogenic bladder bladder cancer 123 bladder-to-external urethral sphincter dysfunctions; overactive follow-up reviews 227 excitatory reflex 10 bladder (OAB) and multiple sclerosis 227 and spinal cord injury 246 bladder-to-urethral sphincter bladder emptying see bladder inhibitory reflex 9-10 voiding bladder capacity, increasing 89 bladder urothelium, roles 3-5 bladder filling 298-300 bladder control and cerebellum 177 bladder voiding 13-14, 61, 298-300 in Parkinson's disease, brain cystometry 70-1 structures 195 and cauda equina syndrome 273 disturbances 89 cystometry 70-1 and prefrontal cortex 14-15 functional brain imaging 16-17 incomplete 294 bladder decentralization, and detrusor interoception 300 mechanisms 208 overactivity 73 and medial prefrontal cortex 16 and multiple system atrophy and urge incontinence 14 bladder diaries 65, 66-7, 243 208, 209 urodynamics 70-1 in nocturnal polyuria 282 and spinal cord injury 242 videourodynamics 65 twenty-four hours 62 non-invasive aids 82 strategies 82 bladder function bladder diseases, and changes in treatment 249 flow rate 197-8 peripheral control of urodynamics 70–1 micturition 5-9 normal, cellular signaling pathways 2-5 bladder wall, ultrastructural bladder disturbances residual volume 197-8 components 5 etiology 67 spinal control of 9-11 physical examination 67 bladder-sacral spinal cord-bladder bladder neck, and multiple system reflex 10-11 bladder dysfunctions 210-11, 235 atrophy 208 and cauda equina syndrome 273-4 bladder-sphincter-bladder reflex 10

More information

α-blockers 104	lesion literature for 169	orgasm 50
applications 224	and multiple sclerosis 228-30	sexual stimulation 4
blood tests	assessment 229	brain control, of bladder, concepts 11
for neurogenic bladder	management algorithm 229	brain lesions 167
dysfunctions 68	prevalence 228, 229–30 treatment 229	and bladder 177–8
for sexual dysfunction 156	and multiple system atrophy 212–14	and bowel 178
blood-brain barrier, drug	management 214	and bowel dysfunction 178
penetration 94	mechanisms 212	computed tomography scans 178
BoNT/A see botulinum neurotoxins	over time 33	magnetic resonance imaging 178
(BoNTs); type A (BoNT/A)	and Parkinson's disease 187-92	see also focal frontal lesions;
	prevalence 25, 187	subcortical lesions
BoNT/B (botulinum neurotoxin	and spina bifida 256, 261-2	brain pathways
type B) 100	assessment 261	in defecation control 31
BoNTs see botulinum neurotoxins	treatment 261–2	in gut control 31
(BoNTs)	and spinal cord injury 32, 249–50	brainstem, and sexual functions 50
Botox see botulinum neurotoxins	and stroke 179–80	
(BoNTs)	symptoms 25	brainstem lesions 177–8
botulinum neurotoxins (BoNTs) 9	see also neurogenic bowel	and urinary symptoms 177–8
applications 74, 192, 211	dysfunction (NBD)	for voiding dysfunction 177
detrusor injections 198, 225, 248	bowel dysmotility 288	brain structures
intravesical injections 100–3	bowel function	bladder control, in Parkinson's
applications 101–2	and afferent signals 31-2	disease 195
clinical efficacy 103	cerebral control 30	see also anterior cingulate cortex
clinical studies 100-1	effects of neurological diseases	(ACC); cerebellum; frontal
commercial formulations 100	on 32–6	lobes; hypothalamus; parietal lobe; prefrontal cortex;
mechanisms 100	and efferent signals 32	temporal lobes
procedures 102–3	neuroimaging 30–1	
recommendations 103	regulatory mechanisms 188–9	brain tumors
type A (BoNT/A) 99	in spinal cord injury, outcome measures 128, 134	and urinary symptoms 171
detrusor injections 75, 221, 225–6	studies 128	and voiding dysfunction 177
efficacy 260 intradetrusor injections, in spina	see also international bowel	brain-bladder control networks
bifida 258, 260	function spinal cord	16–19
intravesical injections 7, 100–3	injury data sets	circuits 16
for sphincter 104	, ,	mechanical 16
type B (BoNT/B) 100	bowel management programs 138–9 conservative pre-emptive 142–3	safety 16–17
and urinary tract infections 102-3	construction 146–7	social 17–19
bowel	development 139	breast cancer 161
anatomy 25	lifestyle goals 140	Brindley root stimulators 266
autonomic innervation 28	medical history 139	implantation 266
and brain lesions 178	prior assessment 139-40	Bristol nomogram 70
and cerebrovascular disease 179–80	physical examinations 140	Bristol Stool Form Scale 139-40, 142,
and focal frontal lesions 171	strategies 230	143, 145, 146
neurological control of 25–36 in health 25–6	bowel symptoms	
pathophysiology 228	and multiple system atrophy 212–13	bromocriptine 195–6
and subcortical lesions 176	prevalence	bulbocavernosus reflex see penilo-
	and multiple system atrophy 213 in Parkinson's disease 189	cavernosus reflex
bowel dysfunction and anorectal manometry 34–5	bowel wall	bulking agents 122
and autonomic dysreflexia 33	anatomy 25	cabergoline 200
and brain lesions 178	innervation 26	cadherin-11, expression 8
and cauda equina syndrome 274		
and dementia 181	BPH see benign prostatic hyperplasia (BPH)	CADT (Compound Autonomic Dysfunction Test) 286–7
and familial amyloid polyneuropathy 287	• • •	•
future research 36	BPS (bladder pain syndrome) 8	calcitonin gene-related peptide (CGRP) 6 occurrence 3
and Guillain-Barre syndrome 281	brain activity patterns	occurrence 5

More information

Cambridge University Press 978-0-521-19831-8 - Pelvic Organ Dysfunction in Neurological Disease: Clinical Management and Rehabilitation Edited by Clare J. Fowler, Jalesh N. Panicker and Anton Emmanuel Index

calcium channel antagonists	cauda equina damage	CBD (cannabidiol), applications 225
301–2	epidemiology 266–70	CCK (cholecystokinin), roles 29
calcium polycarbophil 214	etiology 266–70 incidence 266–7	cell junctions, roles 8
cAMP (cyclic adenosine monophosphate), hydrolysis 158–9	pelvic organ dysfunction after 266 prevalence 266–7	cellular signaling pathways, in norma bladder function 2–5
Campylobacter jejuni (bacterium) 280	cauda equina syndrome (CES) acute	central control, of lower urinary tract function 19
cancer breast 161 prostate 193 see also bladder cancer; tumors	etiology 267–70 investigations 274 motor and sensory symptoms 270–1	central nervous system (CNS) control, dysfunction 36 roles, in defecation 30–1
cannabidiol (CBD), applications 225	and ankylosing spondylitis 271–2 and bladder dysfunctions 273–4	central neuraxial block, and cauda equina syndrome 269–70
cannabinoid (CB) agonists applications 225 clinical efficacy 97 mechanisms 97 in neurogenic detrusor overactivity treatment 97 trials 97	and bladder voiding 273 and bowel dysfunction 274 and central neuraxial block 269–70 chronic etiology 270–1 investigations 274 motor and sensory symptoms	central pontine myelinolysis 235 cerebellum 177 and bladder filling 177 and detrusor overactivity 177 and micturition 12, 177 and multiple system atrophy 177
capsaicin 6, 97 clinical efficacy 99 intravesical 225 mechanisms 98 natural sources of 98	and chronic neuropathic pain syndromes 275 clean intermittent self-catheterization in 275	cerebral control of bowel function 30 micturition 171 cerebrovascular disease 178–80 and bladder 178–9
carbamazepine 232	co-morbidities 270-1 and constipation 272, 275	and bladder dysfunctions 178–9
care in the community, and neurogenic bowel dysfunction management 138–9	and detrusor overactivity 273 diagnostic issues 272 early interventions 274–5 epidemiology 266–70	and bowel 179–80 and constipation 180 and sexual behavior 180 and urinary retention 179
catheterization intermittent 82–3 urethral 83–4	etiology 266–70 drug side-effects 270 and fecal incontinence 275	CES see cauda equina syndrome (CES)
see also clean intermittent self catheterization (CISC); indwelling catheterization; suprapubic catheterization	incidence 269 investigations 274 management 274–5 peer support 275	C-fibers 1 excitation 5–6 roles 11
catheters blockage 123 duration of use 84	medicolegal issues 275 motor innervation 266, 267 and overactive bladder 273–4	cGMP see cyclic guanosine monophosphate (cGMP)
early 84 intermittent 83	and pelvic organ dysfunction 272–3	CGRP see calcitonin gene-related peptide (CGRP)
selection criteria 84	postoperative hematomas 267–9 and sensory loss 272	Charcot-Marie-Tooth disease 287
self-retaining 84  see also indwelling catheters (IDCs);	and sexual dysfunction 274	Chiari II malformation 256
suprapubic catheters (SPCs)	management 275	chilli peppers, capsaicin 98
catheter valves 85	and spinal canal stenosis 271 and spinal fracture 267	cholecystokinin (CCK), roles 29
cauda equina	and tuberculosis 271	cholinergic pathway, changes 7-8
compression 267 acute 272 magnetic resonance imaging 269	and urinary incontinence 273 and urinary retention 272, 273 and urinary symptoms 273–4	chronic idiopathic pseudo-obstruction (CIPO) 295
development 266	CB1 receptors 3	chronic inflammatory demyelinating neuropathy (CIDP) 280
dorsal nerve roots 266 neural structures 267 structure 266	CB2 receptors 3 CB agonists see cannabinoid (CB)	chronic neuropathic pain syndromes, and cauda equina
ventral nerve roots 266	agonists	syndrome 275

More information

chronic urinary retention	colonic transit time (CTT) 128, 134-5	cortical control, of bladder 167
management 303-5 sacral neuromodulation 303-5	delayed 33 mean 33	cortical disorders 167-82
	measurement 33	cortical inputs
Cialis see tadalafil	in multiple system atrophy 213, 214	to human sexual cycle 42–3
CIDP (chronic inflammatory demyelinating neuropathy) 280	in Parkinson's disease, studies 190 radiographical determination 135	animal studies 42
CIPO (chronic idiopathic	• •	cortical representation, of penis 45-6
pseudo-obstruction) 295	colonmetrograms 35–6	cough pressure 34
cisapride, applications 33, 192	colonoscopy 136	counseling, for sexual dysfunction 162
CISC see clean intermittent	colorectal dysfunction, symptoms 127	Credé's maneuver 82, 224, 246, 249
self-catheterization (CISC)	colorectal transit time see colonic transit time (CTT)	CT scans <i>see</i> computed tomography (CT) scans
c-Kit, expression 188–9	compliance 35-6	CTT see colonic transit time (CTT)
clam cystoplasty see bladder augmentation	curves 35	cutaneous continent diversions 119
Č	definition 35 measurement 35–6	applications 119
clean intermittent self-catheterization (CISC) 89, 208, 225–6	and spinal cord injury 36	follow-up 119
advantages 82	Compound Autonomic Dysfunction	Mitrofanoff procedure 119 results 119
and antimuscarinics 74, 82	Test (CADT) 286-7	surgical techniques 119
applications 73–4, 82, 103, 249 in cauda equina syndrome 275	computed tomography (CT) scans	Yang-Monti procedure 119
concept of 82	brain lesions 178	cutaneous urinary diversions 119-20
females 82	pituitary adenomas 174	cyclic adenosine monophosphate
neurological patients and 82–3 selection criteria 83	see also single photon emission	(cAMP), hydrolysis 158–9
in suprasacral spinal cord injury	computed tomography (SPECT)	
bladder dysfunction	,	cyclic guanosine monophosphate (cGMP)
management 248 in urinary retention management	concentric needle electrodes (CNEs) 72	hydrolysis 158–9
297–8	advantages 72–3	inhibitors 275
in voiding dysfunction management	Consortium for Spinal Cord Medicine,	in penile erection 41, 159
82–4, 223–4, 259	guidelines 243	cystectomy and sexual dysfunction 283
Cleveland Constipation Score 128	constipation 32, 36, 178	subtrigonal 118
clitoris anatomy 56	and cauda equina syndrome 272, 275 and cerebrovascular disease 180	cystograms, with voiding phase
dorsal nerve 54, 73	definitions 32	243–4, 246,
innervation of 55	and dementia with Lewy bodies 181	cystometry 70-1, 197-8, 223, 298
vacuum devices 161	management, algorithms 310 and multiple sclerosis 228	and detrusor overactivity 65
CNEs see concentric needle electrodes (CNEs)	and neurogenic bowel dysfunction	procedures 70 cytochrome P450, metabolism 93
CNS see central nervous system (CNS)	136 and Parkinson's disease 187, 189	Cytomegalovirus 280
Cochrane reviews 92	pharmacotherapy 191	D2 receptors 43
cognitive ability, and neurogenic bowel	post-stroke patients 179–80 prevalence 32, 138	D3 receptors 43
dysfunction 140	and spinal cord injury 32	dACC see dorsal anterior cingulate
cognitive impairment	treatment 288	cortex (dACC)
and depression 94 and muscarinic receptor inhibition 94	see also fecal incontinence (FI)	Dai-Kenchu-To 214
<del>-</del>	continence appliances to aid 85–7	dantrolene 104
collagen beads 122	factors affecting 1	darifenacin 197
colon, functions 25	maintenance 26	diffusion 93
colonic activity 29 contractile 29	therapy, adjustable 121–2  see also incontinence	muscarinic receptor selectivity 93
control 29		defecation 30
disturbances 30	corpus cavernosum electromyography 156	control, brain pathways 31

More information

#### Index

defecation (cont.) factors affecting 30 and high amplitude propagated contractions 30 impaired 214 and spinal cord injury 36 and straining 30, 191 defecation scintigraphy 134-5 delta-9-tetrahydrocannabinol (THC), applications 225 dementia 180-1 and bowel dysfunction 181 and sexual behavior 181 and toileting 181 and urinary incontinence 180 dementia with Lewy bodies (DLB) 197 and constipation 181 and urinary incontinence 180 depression and cognitive impairment 94 and sexual dysfunction 158 dermatomes 266 sacral 268 desmopressin 74 applications 212 clinical efficacy 95 mechanisms 95 in neurogenic detrusor overactivity treatment 95 in nocturia treatment 95, 225 in polyuria treatment 247 in postural hypotension treatment 212 side-effects 95 detrusor areflexia 177-8, 179 detrusor hyperreflexia 177-8, 179 detrusor muscle 2-3 relaxation 4 detrusor myectomy 117 development 117 results 117 surgical technique 117 detrusor overactivity (DO) 5-8, 62 α-adrenoreceptor antagonists in 96 and Alzheimer's disease 92 and bladder decentralization 73 and cauda equina syndrome 273 and cerebellum 177 cystometry 65 etiology 7-8 and multiple sclerosis 221 treatment 224-6 and multiple system atrophy 206-8

and Parkinson's disease 194-5 pelvic floor muscle training 80 pharmacotherapy 91, 96, 195-6 and suprapubic vibrators 224 therapeutic electrical stimulation 81 treatment 6-7, 10, 211 see also idiopathic detrusor overactivity (IDO); neurogenic detrusor overactivity (NDO) detrusor pressure, estimation 70 detrusor smooth muscle 1 detrusor sphincter dyssynergia (DSD) 179, 246 and multiple sclerosis 221 and multiple system atrophy 208 pharmacotherapy 104, 249 sacral neuromodulation in 114 and spinal cord injury 242 symptoms 65 treatment 249 detrusor underactivity 8-9 detumescence, mechanisms 41 Devic's disease 235 diabetes mellitus 278-80 and bladder dysfunctions 279 and diarrhea 280 and erectile dysfunction 160, 279 - 80and fecal incontinence 280 and gastrointestinal tract dysfunction 280 and lower urinary tract dysfunction 278 neuropathies, classification 278 and peripheral neuropathy 278 and sexual dysfunction 280 type 1 278 type 2 278 urodynamics 279 diabetic cystopathy management 279 pathophysiology 278-9 use of term 278 diabetic neuropathies, classification 278, 279 diagnostic shadowing 67 Diagnostic and Statistical Manual-IV (DSM-IV), sexual satisfaction algorithm 280

diarrhea 36

and diabetes mellitus 280

diet, and neurogenic bowel dysfunction

management 143

dietary fiber 191 digital evacuation, of feces 144-5 digital rectal examinations 67 digital rectal stimulation 144-5 dimethylmercaptosuccinic acid (DMSA) renography 243 diphenhydramine, and oxybutynin compared 94 diplopia, horizontal 175 dipstick urinalysis 227 in urinary tract infections 63, 67-8, 223 diversions cutaneous urinary 119-20 urinary 227 see also cutaneous continent diversions DLB see dementia with Lewy bodies (DLB) DMD (Duchenne muscular dystrophy) DMSA (dimethylmercaptosuccinic acid) renography 243 DO see detrusor overactivity (DO) docusate enemas 145-6 domperidone, applications 191-2 donepezil 181 dopamine 176-7 applications 191-2 roles 188-9, 200 dopamine agonists 159, 176-7, 200 applications 231 studies 43 dopamine dysregulation syndrome, and Parkinson's disease 200 dopaminergic blockers 191-2 dopaminergic pathways, loss of 198 dopamine transporters, studies 193 dorsal anterior cingulate cortex (dACC) 13-14 roles 31-2 and social circuit 17-19 DSD see detrusor sphincter dyssynergia (DSD) DSM-IV (Diagnostic and Statistical Manual-IV), sexual satisfaction algorithm 280 dual-hit theory 187

More information

Duchenne muscular dystrophy (DMD) 288	administration 145–6 antegrade continence 148, 262	Everaert, K. 114 expanded disability status scale
Duloxetine, in sphincter functional improvement 104	docusate 145–6 efficacy 146	(EDSS) applications 220
dysraphic disturbances 256	mechanisms 145–6	levels 220
EAS see external anal sphincter (EAS)	ENS see enteric nervous system (ENS)	external anal sphincter (EAS)
EAU (European Association of Urology), guidelines	enteric nervous system (ENS) anatomy 26–7 myenteric plexus 27	anatomy 26 functions 26 external sphincter dyssynergia
94–5, 258 ED see erectile dysfunction (ED)	neurons 26–7 neuropeptides 27	see detrusor sphincter dyssynergia (DSD)
EDSS see expanded disability status scale (EDSS)	and Parkinson's disease 189 submucosal plexus 27	external urethral sphincter 210
efferent nervous system see enteric	enteric neurons, classification 27	extrinsic nervous system, functions 27
nervous system (ENS)	enterocystoplasty 118	familial amyloid polyneuropathy (FAP)
efferent parasympathetic nerves 1	enteropathy, visceral 295	286-7
efferent signals, and bowel function 32	ependymomas 270–1 epilepsy 45	and bladder dysfunctions 286–7 and bowel dysfunction 287
eGFR see estimated glomerular filtration rate (eGFR)	and sexual dysfunction 45 temporal lobectomy 173	etiology 286 symptoms 286–7
ejaculation animal studies 52–3	see also temporal lobe epilepsy (TLE)	uroflow curves 287
phases 41	Epstein-Barr virus 280	familial dysautonomia (FD) 287 classification 287
and spinal cord injury 250–1 vibro-ejaculation 250–1 see also electroejaculation	erectile dysfunction (ED) 153, 176 and diabetes mellitus 160, 279–80 evaluation 155	FAP see familial amyloid polyneuropathy (FAP)
ejaculation dysfunction, treatment 161, 232	and multiple sclerosis 160, 230–1 and multiple system atrophy 217	FD see familial dysautonomia (FD) fecal impaction
ejaculator generators 52	and Parkinson's disease 198 pelvic floor therapy 160–1	assessment 67
electrical stimulation, in neurogenic bladder dysfunction	risk factors 156 and spinal cord injury 160, 250	fecal loading 142 incidence 141 management 141
treatment 112–15	and stroke 180	studies 142
electrodes St Mark's 73	treatment 158–61, 217, 231–2, 261 first-line 158–60 second-line 160–1	and physically disabled 142 symptoms 141–2
see also concentric needle electrodes (CNEs)	erection (penile) <i>see</i> penile erection	Fecal Incontinence and Constipation  Quality of Life (FIC QOL)
electroejaculation 52	EROS-CTD system 161, 162, 232	questionnaire 261
procedure 161	esthesiometers 157	fecal incontinence (FI) 32
electromyography (EMG) biofeedback 81	estimated glomerular filtration rate (eGFR)	and cauda equina syndrome 275 definition 32
corpus cavernosum 156 definition 72	applications 68	and diabetes mellitus 280 management, algorithms 311
in Fowler's syndrome investigations	procedures 68	and multiple sclerosis 229
295–7 in neurogenic bladder dysfunction	estrogen, assays 156  Euphorbia resiniferae (cactus),	prevalence 32, 138 and quality of life 128
investigations 72–3 procedures 72–3	resiniferatoxin 98	and recto-anal inhibitory reflex 35
technical issues 72 urethral sphincter 298	European Association of Urology (EAU), guidelines 94–5, 258	scores 128 and spina bifida 257, 261
see also sphincter electromyography	evacuation	treatment 262
EMG see electromyography (EMG)	digital 144–5 and neurological diseases 34–5	and stroke 180 and tethered cord syndrome 263
endorphins, release 41	evacuation disorders 32	see also constipation
enemas 145–6	categorization 32	fecal peritonitis 83-4

More information

feces consistency 191 differentiation 35	focal frontal lesions 167–72 and bladder 167–71 and bowel 171	gastrin, roles 29 gastrocolic reflex 30, 143
digital evacuation 144–5  see also Bristol Stool Form Scale	and sexual behavior 172	and gut motility 33–4 mechanisms 33–4
female genital innervation 55–6	Foley, Frederic 84	gastrointestinal hormones 29
females	folic acid metabolism 255	gastrointestinal physiology 25
clean intermittent self catheterization 82 Fowler's syndrome 301–2	roles 255–6 supplementation 255–6 forebrain activation, of spinal	gastrointestinal (GI) tract anatomy 25 see also lower gastrointestinal tract
urethral pressure profile 298 indwelling catheters 84	reflexes 43 Fowler's syndrome (FS) 8–9, 17,	gastrointestinal tract dysfunction, and diabetes mellitus 280
orgasm brain activations 50	295–7	GBS see Guillain-Barre syndrome (GBS)
education 232 studies 52	clinical features 297-8 diagnosis 295	GCIs see glial cytoplasmic inclusions (GCIs)
orgasmic dysfunction 162 treatment 161 polyic floor thorapy, physical	electromyography 295–7 females 301–2 urethral pressure profile 298	genital automatism 45, 173–4 use of term 172
pelvic floor therapy, physical examinations 80	functional magnetic resonance	genitalia, innervation 51
sexual activity 40	imaging 299	genital prolapse 162
urge incontinence 17 urinary retention 17, 295, 297	investigations 297–8 symptoms 297	genital sensation
female sexual dysfunction (FSD) and multiple sclerosis 232	frequency 6–7  see also urinary frequency	forebrain activation of spinal reflexes  43
and multiple system atrophy 217	frequency/voiding charts 79	impaired 156–7
pathophysiology 231 prevalence 153	frontal lobes	GI tract see gastrointestinal (GI) tract
secondary and tertiary sources 232 and spinal cord injury 251–2	pathology, and micturition 167-71 and sexual functions 45	glans clitoris 55–6  see also clitoris
treatment 232 treatment options 161–3, 232	frontal lobe tumors and bladder dysfunctions 170–1 and urinary incontinence 171	glans penis 54 see also penis
Female Sexual Function Index (FSFI) 156, 231, 316	FS see Fowler's syndrome (FS)	glial cytoplasmic inclusions (GCIs)
female sexual responses 41	FSD see female sexual	constituents 206 in multiple system atrophy 206
Ferticare vibrator 250–1	dysfunction (FSD)	globus pallidus 176–7
fertility, and spinal cord injury 251	FSFI (Female Sexual Function Index) 156, 231, 316	roles 176
fetal surgery, in spina bifida 257	Fukuyama, H. 12	glycerin suppositories 145
fetishisms 173-4	functional brain imaging	gonadal hormones receptors 44
FI see fecal incontinence (FI)	bladder filling 16–17	roles 43
FIC QOL (Fecal Incontinence and Constipation Quality of Life) questionnaire 261	bladder studies 12 of orgasm 49–50 of post-ejaculation 50	Groupe d'études de neuro-urologie de langue française 222
fir trees, use of term 246	of sexual activity 46–50	guarding reflex 1, 4, 10
flatus 140–1	of sexual desire 47 of sexual excitement 47–9	roles 9
and diet 143	urethra studies 12	Guillain-Barre syndrome (GBS) 278, 280-1
differentiation 35 incontinence of 274	functional magnetic resonance imaging (fMRI)	and bowel dysfunction 281 incidence 280
Florida pouch 119	applications 15	and infections 280
fluid intake, and overactive bladder 79, 222	and bladder filling 16–17 in Fowler's syndrome 299	symptoms 280 gut
fMRI see functional magnetic	GABA (γ-amino butyric acid) 27	control, brain pathways 31 motility, and gastrocolic reflex 33–4
resonance imaging (fMRI)	gastric emptying, mechanisms 33	mounty, and gastrocone renex 33-4

More information

Index

physiology, in neurological diseases 33-6 reflexes 30 HAPCs see high amplitude propagated contractions (HAPCs) head injuries 181-2 and bladder 182 and sexual behavior 181-2 health care professional, roles 235 hematomas, postoperative, in cauda equina syndrome 267-9 hematuria bleeding sites 65 definition 65 etiology 65 and lower urinary tract dysfunction 65 urine cytology 68 hemiparesis 179 hemispherical asymmetry, sexual drive 45 hemorrhoids 136 high amplitude propagated contractions (HAPCs) 29 and defecation 30 Hirschsprung's disease 29-30 HIV infection, and neuromuscular disorders 283 Hoehn and Yahr staging 189, 193, 194, 200 home environment, assessment 140 Honolulu Heart Program 187 horizontal diplopia 175 hormone replacement therapy (HRT), and hypoactive sexual desire disorder 161 hormones gastrointestinal 29 see also gonadal hormones HRT (hormone replacement therapy), and hypoactive sexual desire disorder 161

subcortical inputs 42-3 human data 42-3 triphasic model 40 human sexual responses cycle, neural inputs 42 neurology 40 hydrocephalus, and urinary incontinence 171 hyperglycemia 280 hyperprolactinemia 156, 176 and multiple system atrophy 217 and Parkinson's disease 198 hyperreflexia 257 hypersexuality 43, 172, 200 animal studies 172-3 assessment 156 and Parkinson's disease 176-7 and temporal lobe resection 173 hypoactive sexual desire disorder (HSDD) 40 and hormone replacement therapy 161 use of term 161 hypogonadism 156, 176 hyponatremia 95 hyposexuality, and temporal lobe epilepsy 44-5, 173 hypotension 159 see also orthostatic hypotension; postural hypotension hypothalamic lesions 176 hypothalamus brain imaging 174 roles, in sexual drive 42 and subcortical lesions 174-5 hypothyroidism 156 hysterectomy 282-3 and bladder dysfunctions 282-3 pelvic organ nerve damage 55 and sexual dysfunction 283 IAS see internal anal sphincter (IAS) IBS (irritable bowel syndrome) 36 ICCs see interstitial cells of Cajal (ICCs) ICI (International Consultation on Incontinence) 100, 103 IC (interstitial cystitis) 8 IDCs see indwelling catheters (IDCs) idiopathic detrusor overactivity (IDO) 9 mechanisms 14-15 neural plasticity in 9

IDO see idiopathic detrusor overactivity (IDO) IFSF (Index of Female Sexual Function) 280 IIEF (International Index for Erectile Function) 156, 180, 231, 314 ileal conduits 119-20 in multiple sclerosis management 120 results 120 surgical techniques 119-20 imaging neuroimaging 30-1 see also computed tomography (CT) scans; functional brain imaging; magnetic resonance imaging (MRI); positron emission tomography (PET) Implantable Pulse Generator (IPG) 114 impulse control disorders, and Parkinson's disease 200 incontinence 6-7 of flatus 274 functional vs. neurogenic 179 location of lesions causing 15 social issues 17-18 see also fecal incontinence (FI); urinary incontinence Incontinence Impact Questionnaire 312 incontinence pads 87 Incontinence Quality of Life Instrument 66 Index of Female Sexual Function (IFSF) 280 indoramin, trials 104 indwelling catheterization disadvantages 83 routes 83-4 in voiding dysfunction management 83, 224 indwelling catheters (IDCs) 84 functions 83 lengths 84 limitations 122 in multiple sclerosis 224 risk factors 83-4 self-retaining 84 types of 83-4 and urinary diversion 227 and urinary tract infections 83-4 urine drainage bags 84-5 infections HIV 283 lower urinary 227

HSDD see hypoactive sexual desire

disorder (HSDD)

5-HT see serotonin (5-HT)

cortical inputs 42-3

human data 42-3

neuroendocrine effects 43-4

human sexual cycle

phases 40

More information

#### Index

infections (cont.) in multiple sclerosis, bladder dysfunctions 227 urinary 271 see also urinary tract infections (UTIs) infertility treatment 161 infrasacral lesions, in spinal cord injury 242 inherited neuropathies 286-8 Innsbruck approach 257-8 insula activation, and urine storage 13 intermittent catheterization 82-3 see also clean intermittent self-catheterization (CISC) intermittent catheters 83 internal anal sphincter (IAS) anatomy 26 functions 26 internal urethral sphincter, and multiple system atrophy 208 international bowel function spinal cord injury data sets 128-34 basic 129 creation 133-4 development 128 extended 131 items 128-33 International Consultation on Incontinence (ICI) 100, 103 International Continence Society 13-14, 103 classification 65 recommendations, questionnaires 66 International Index for Erectile Function (IIEF) 156, 180, 231, 314 International Prostate Symptom Score (IPSS) 194, 66, 312-14 applications 193 International Spinal Cord Society (ISCoS) 128, International Standards for the Neurological Classification of Spinal Cord Injury 128 interneurons roles 10, 27 spinal, functions 10 interoception, and bladder sensation 12 - 14

interstitial cystitis (IC) 8 intervertebral disc protrusion 270 intestinal dysmotility 175-6 intestinal pseudo-obstruction (paralytic ileus), incidence 189 intra-abdominal gastrointestinal tract, anatomy 25 intravesical agents, in neurogenic detrusor overactivity treatment 248 intravesical atropine clinical efficacy 100 mechanisms 99-100 in neurogenic detrusor overactivity treatment 99-100 intravesical electrostimulation 112-13 applications 112-13 mechanisms 112 procedures 112 intravesical lidocaine 98 clinical efficacy 100 mechanisms 99-100 in neurogenic detrusor overactivity treatment 99-100 intravesical nociceptin/orphanin FQ 98 clinical efficacy 100 mechanisms 99-100 in neurogenic detrusor overactivity treatment 99-100 intravesical oxybutynin 98 clinical efficacy 100 mechanisms 99-100 in neurogenic detrusor overactivity treatment 99-100 intravesical treatments development 97-8 of neurogenic detrusor overactivity 97-8 rationales 98 recommendations 100 intravesical vanilloids 98 clinical efficacy 98-9 mechanisms 98 natural sources of 98 in neurogenic detrusor overactivity treatment 98-9, 248 recommendations 100 safety 98-9 intrinsic afferents 27 intrinsic nervous system see enteric nervous system (ENS)

intrinsic primary afferent neurons (IPANs) 188-9 IPANs (intrinsic primary afferent neurons) 188-9 IPG (Implantable Pulse Generator) 114 IPSS see International Prostate Symptom Score (IPSS) irritable bowel syndrome (IBS) 36 ISCoS (International Spinal Cord Society) 128 isotope renography 69 Japanese pelvic organ questionnaire 193, 195 KBS see Kluver-Bucy syndrome (KBS) kidney stones, and spinal cord injury 244 Kleine-Levin syndrome 43 Kluver-Bucy syndrome (KBS) 44 altered sexuality 44 amygdala and 44 animal studies 172-3 labia separation, appliances 83 Lambert-Eaton myesthenic syndrome (LEMS), and autonomic dysfunction 288 LAPCs (low amplitude phasic contractions) 29 large intestine, roles 25 laxatives 146 types of 146 L-DOPA see levodopa leg abduction, appliances 83 LEMS (Lambert-Eaton myesthenic syndrome), and autonomic dysfunction 288 lesion literature for bladder pathophysiology 168 for bowel dysfunction 169 for sexual dysfunction 169 use of term 167 leucodystrophies 235 leucotomy 170-1 Levitra see vardenafil levodopa absorption 191 applications 191-2, 200 levosulpiride 191-2 Lewy bodies 188, 189, 282

Interstim 113, 114

roles 29

interstitial cells of Cajal (ICCs) 25, 188-9

More information

formation 188–9  see also dementia with Lewy	quality of life 66 specialist investigations 69	and spinal cord injury 250–1 treatment options 158–61, 231–2
bodies (DLB)	storage symptoms 62 symptoms 61	male sexual responses 41
Lewy body dementia see dementia with Lewy bodies (DLB)	symptom scales 66 and urinary incontinence 63	Massachusetts Male Aging Study 279–80
libidinous temporal lobes 172	urodynamics 69–71	massage, abdominal 143-4
libido definition 40–1	videourodynamics 71–2 and voiding symptoms 65	maximum urethral closure pressure (MUCP) 298, 300
loss of 43, 176, 180	lower urinary tract function central control of 19	MD (myotonic dystrophy) 288
lidocaine 8, 99  see also intravesical lidocaine	preservation 258	MDRD (Modification of Diet in Renal
lifestyle goals, in bowel management programs 140	lower urinary tract symptoms (LUTS) 62–5, 192	Disease) 68 medial prefrontal cortex, and bladder
long-loop spinobulbospinal reflex 11	bladder diaries 66–7 cannabinoid agonists in 97, 225	filling 16
loperamide 146	definitions 64	medial pre-optic area (MPOA) 42 animal studies 198
low-amplitude phasic contractions	etiology 64 history 61–2	roles, in sexual drive 42
(LAPCs) 29 lower gastrointestinal tract	multifunctional 62 in multiple system atrophy 217	mercaptoacetyltriglycine (MAG3) renography 243
function tests 190–1 symptoms	questionnaires 66	metoclopramide 191-2
in myasthenia 287–8	L-region 12	applications 33
in Parkinson's disease 189	lumbar discs, herniation 267	micturition and cerebellum 12, 177
lower lumbar spine injury, and penile erection 52	LUTD see lower urinary tract dysfunction (LUTD)	cerebral control 171 and frontal lobe pathology
lower motor neuron lesions, concept of 294	LUTS see lower urinary tract symptoms (LUTS)	167–71 pathways 2, 11
lower urinary infections 227	Madersbacher classification 258	peripheral control of 1–2 changes in bladder disease
lower urinary tract behavior 11	MAG3 (mercaptoacetyltriglycine) renography 243	states 5–9
morphological damage 246	magnetic resonance imaging (MRI)	micturition reflex 194
roles 61	brain lesions 178	midodrine 161, 212
lower urinary tract dysfunction	cauda equina compression 269	mid-stream urine (MSU) test 68
(LUTD) approaches 73	pituitary adenomas 174 rhombencephalitis 175	Miller Fisher syndrome 280
multidisciplinary 74–6	see also functional magnetic	mirabegron, in detrusor overactivity treatment 96
bladder diaries 66-7 classification 62, 61	resonance imaging (fMRI)	
and diabetes mellitus 278	male genital innervation 53–4	mitochondrial cytopathy 288
diagnostic evaluation 75	males aging, prostate disease 192	mitochondrial neurogastrointestinal encephalomyopathy
etiology 62, 61 evaluation 61	indwelling catheters 84	(MNGIE) 288
algorithms 307–8	orgasm	Mitrofanoff procedure 119, 262
guidelines 258	brain activations 50 mechanisms 41	MNGIE (mitochondrial
and hematuria 65 history 61–2	pelvic floor 26	neurogastrointestinal
management 66, 73–4	pelvic floor therapy, physical	encephalomyopathy) 288
algorithms 307–8 goals 63	examinations 80 urinary incontinence appliances 86	Modification of Diet in Renal Disease (MDRD) 68
multidisciplinary team	urinary retention 295	modified Rome criteria 32
approach 75 step-wise approach 75	male sexual dysfunction pathophysiology 230–1	molecular mimicry 280
and multiple sclerosis 221	prevalence 153	monoamine oxidase inhibitors 161
and nocturia 63	secondary and tertiary sources 232	mosapride, applications 192

More information

motor disorders, and multiple system atrophy 210	and fecal incontinence 229 and female sexual dysfunction 232	and incomplete bladder voiding 208, 209
motor innervation, in cauda equina	ileal conduit management 120 and lower urinary tract	lower urinary tract symptoms 217 and motor disorders 210
syndrome 266, 267	dysfunction 221	and orthostatic hypotension 217
motor neurons	and neurogenic detrusor	parkinsonian subtype (MSA-P) 206
excitatory 27	overactivity, other	differential diagnosis 206,
inhibitory 27	measures 225	210–11
mouthcecum transit time	and nocturnal polyuria 225	and Parkinson's disease, differential
mean 33	prevalence 25, 220	diagnosis 193
prolongation 33	primary 220	and quality of life 206
	progressive relapsing 220	and sexual dysfunction 214–17
Movicol 142	relapses, and infections 227	females 217
MPOA see medial pre-optic area	relapsing remitting 220	management 217
(MPOA)	sacral neuromodulation in	and sexual symptoms 214-17
· · ·	114, 226	sphincter electromyography,
MRI see magnetic resonance	secondary progressive 220	neurogenic changes 209-10
imaging (MRI)	and sexual dysfunction 230-5	and sphincter weakness 213-14
MRIcro 47	diagnosis 231	and urinary symptoms 206, 211
MS see multiple sclerosis (MS)	disability 231	prevalence 212
	healthcare professional roles 235	surveys 212
MSA see multiple system atrophy (MSA)	investigations 231	voiding symptoms 208
MSU (mid-stream urine) test 68	multifactorial causes 230 pathophysiology 230-1	muscarinic acetylcholine receptors
MUCP (maximum urethral closure	prevalence 230	roles 2–3
pressure) 298, 300	treatment 230, 231–2	subtypes 2–3
multiple sclerosis (MS) 220-35	subtypes 220	muscarinic receptors 3
antimuscarinics in 92	upper urinary tract complications,	expression 89-90
and bladder cancer 227	risk factors 223	inhibition, and cognitive impairment
and bladder disturbances 67	and urinary incontinence 221	94
and bladder dysfunctions 221-7	urine testing 223	localization 90, 95
containment 227	urodynamics 70-1, 223	M1 93
general measures 222	and voiding dysfunction,	M2 89–90, 93
infections 227	management 223-4	M3 89–90, 93
investigations 223	multiple system atrophy (MSA)	selectivity 93
management 222	159, 206–17	roles 90, 93
other measures 224	anorectal videomanometry 215	muscle disorders 288
pathophysiology 221	and autonomic disorders 210	mana and an denote a phica 200
physical treatments 222	and bladder dysfunctions 206–12	muscular dystrophies 288
surgical treatments 226-7	management 211–12	and bladder dysfunctions 288
symptoms 221–2	pharmacotherapy 211–12	myasthenia, lower gastrointestinal tract
bladder surgery 226-7	and bladder storage 207	symptoms in 287–8
and bladder symptoms 221–2	and bladder symptoms 206	Mycoplasma pneumoniae
botulinum neurotoxin injections 225	and bowel dysfunction 212-14	(bacterium) 280
and bowel dystunction 228–30	management 214	
assessment 229	mechanisms 212	myelopathies
management algorithm 229	and bowel symptoms 212-13	non-compressive 235
prevalence 228, 229–30	prevalence 213	urodynamics 233, 235
treatment 229	cerebellar dysfunction subtype	myenteric plexus 26, 27
cannabinoid agonists in 97 characterization 220	(MSA-C) 206	myofibroblasts, roles 3-5
and constipation 228	differential diagnosis 206 and cerebellum 177	myotomes 266, 267
and detrusor overactivity 221	colonic transit time 213, 214	myotonia 295–7
treatment 224–6	and detrusor overactivity 206-8	•
and detrusor sphincter	and detrusor sphincter	myotonic dystrophy (MD) 288
dyssynergia 221	dyssynergia 208	naftopidil, applications 211
disease progression, measurement 220	diagnosis 206	National Health and Social Life
and erectile dysfunction 160, 230–1	differential 294	Survey (US) 153
and electric dystalletion 100, 250-1	and erectile dysfunction 217	

More information

National Hospital for Neurology and Neurosurgery (UK) 303	general measures 79–87 investigations 67–9	α-adrenoreceptor antagonists 95–6 antimuscarinics 89–95
National Patient Safety Agency (NPSA) (UK) 83-4	specialist 69 management, algorithms 307	desmopressin 95 forthcoming 96–7
Reporting and Learning System 122	pelvic floor treatments 79–81	intravesical 97–8
National Service Framework (UK) 68	pharmacotherapy 89–104 physical examination 67 and spina bifida 257	in spina bifida, botulinum neurotoxir type A intradetrusor injections 260
natural killer (NK) cells, activation 5	surgical treatments 112–23 goals 112	and spinal cord injury 243–4, 245 treatment 247–9
NBD see neurogenic bowel dysfunction (NBD)	indications 112 selection criteria 112	neurogenic sexual dysfunction
NDO see neurogenic detrusor overactivity (NDO)	symptom scales 66–7 treatment 247–9	evaluation 153–63 management 153–63
neostigmine, applications 33-4	options 112	neuroimaging, bowel function 30–1
nerve axons, roles 3–5	urodynamics 69–71 uro-neurophysiology 72–3	neurological bladder dysfunctions see neurogenic bladder
nerve growth factor (NGF) axonal transport deficiency 278-9	videourodynamics 71–2 see also lower urinary tract dysfunction (LUTD)	dysfunctions neurological control
expression 3 nerves	neurogenic bowel dysfunction (NBD)	of bladder 1-9 of bowel 25-36
afferent 89	anorectal physiology 135	in health 25-6
efferent parasympathetic 1 see also autonomic nerves	approaches 127–36 and cognitive ability 140	of sexual functions 40–56 neurological diseases
nervous system	co-morbidities 138, 139 and constipation 136	and bladder dysfunctions,
autonomic 27 extrinsic 27	etiology 141	correlation 193 bowel symptoms in 32–3
see also central nervous system	evaluations 127–8 algorithms 309	effects on bowel function 32–6
(CNS); enteric nervous system	physical 136	and evacuation 34–5
(ENS)	investigations 134–5	gut physiology in 33–6
Netherlands Pharmacovigilance Foundation 301–2	management 138–49 algorithms 309	neurological disorders, sexual dysfunction in 153–4
neural control, of pelvic organs 167	and care in the community 138–9 clinical assessment 139–40	neurological dysfunction, and urinary retention 293–5
neural groove, defective closure 255	conservative pre-emptive 142–3 diet and 143	neurological patients
neural plasticity, in idiopathic detrusor overactivity 9	future trends 149 investigational assessment 140–1	antimuscarinics in 93 and clean intermittent
neural tube	routines 143	self-catheterization 82–3
closure 255	specific 142–3	neurology
etiology 255 mechanisms 255	surgical interventions 148-9 see also bowel management	human sexual responses 40 sexual functions 56
neuroendocrine disorders, and	programs	neuromuscular disorders 278-88
temporal lobe epilepsy 45	prevalence 127 and quality of life 138–9, 149	and HIV infection 283
neuroendocrine effects, in human sexual cycle 43–4	risk factors 138 scores 128	and pelvic organ dysfunction 278 see also neuropathies
neurogenic bladder dysfunctions	and spinal cord injury 138, 139	neuromuscular junction, disorders 288
approaches 61–76	symptom-based scores 128 symptoms 127	neurons
non-pharmacological 79–87 behavioral retraining 79	· -	enteric 27
blood tests 68	Neurogenic Bowel Dysfunction Score 139–40, 319	in enteric nervous system 26–7 intrinsic primary afferent 188–9
comorbidities 61	neurogenic claudication 271	see also interneurons; motor neurons
differential diagnoses 67–9 electrical stimulation 112–15	neurogenic detrusor overactivity (NDO) 7	neuropathies 278–81
electromyography 72–3	and multiple sclerosis, other	acquired 278-80
evaluation 61–76	measures 225	diabetic 278, 279
and fluid intake 79	pharmacotherapy 89-103, 247	inherited 286–8

More information

neuropeptides in enteric nervous system 27 interactions, with neurotransmitters 5	NPSA see National Patient Safety Agency (NPSA) (UK) NSAIDs (non-steroidal	oxybutynin 94 diffusion 93 and diphenhydramine compared 94
neurosyphilis 283–4	anti-inflammatory drugs) 301–2	efficacy 92 muscarinic receptor selectivity 93
neurotransmitters in erection 159 interactions, with neuropeptides 5	nucleus paragigantocellularis (nPGi), roles 42	side-effects 197 trials 90–1 <i>see also</i> intravesical oxybutynin
neurulation	nucleus pulposus, herniation 267	oxytocin, secretion 42-3
primary 255 secondary 255	OAB see overactive bladder (OAB)	pad tests 69
Newton, A. 30	ON see Onuf's nucleus (ON)	PAF see pure autonomic failure (PAF)
NGF see nerve growth factor (NGF)	Onuf-Onufrowicz, Bronislaw 209	PAG see periaqueductal gray (PAG)
· ·	Onuf's nucleus (ON) 10, 11, 26, 189,	pain
nicotinic receptors 3	209, 212 somatic efferents 4, 1	abdominal 32–3
nifedipine 243		bladder 8 chronic neuropathic 275
nitrates 159	opiates urinary retention studies 303	see also back pain
nitric oxide donors 104	and voiding dysfunction 301-3	pallidotomy 176-7
nitric oxide (NO) 27 in penile erection 41	organomegaly 67	papaverine, in erectile dysfunction
release, in sexual stimulation 159	orgasm	treatment 160
roles 41	females	paracentral lobule 172
NK (natural killer) cells, activation 5	brain activations 50 education 232	paradoxical sphincter contraction
NMSQuest see Non-motor Symptoms	and spinal cord injury 251	on defecation (PSCD)  see anismus
Questionnaire (NMSQuest)	studies 52 functional brain imaging 49–50	paralytic ileus, incidence 189
NO see nitric oxide (NO)	induced 176	
nocturia desmopressin treatment 95, 225	males	parasympathetic innervation, anatomy 27–8
etiology 63	brain activations 50 mechanisms 41	paraventricular nucleus (PVN) 42
evaluation, formulae 65	orgasmic auras 173–4	anatomy 42–3
and lower urinary tract dysfunction 63	orgasmic dysfunction	rat studies 43 roles, in sexual drive 42
and Parkinson's disease 195, 197	females 162	parietal lobe 172
pathophysiology 65, 6–7 and pure autonomic failure 282	treatment 161	and sexual behavior 172
studies 195–6	females 161	and sexual functions 45-6
urgency 62	orthostatic hypotension 210–11 and multiple system atrophy 217	Parkinson's disease (PD) 187-200
nocturnal polyuria 212	overactive bladder (OAB) 9	anorectal videomanometry 191, 215 studies 190–1
bladder diaries 282 and multiple sclerosis 225	antimuscarinic treatment 259–60	antimuscarinics in 94
symptoms 63	trials 90–1	and benign prostatic hyperplasia 192
nomograms 70	approaches, non-pharmacological 79–87	bladder control, brain structures 195 and bladder dysfunctions 192–8
Non-motor Symptoms Questionnaire	and cauda equina syndrome 273-4	bladder symptoms
(NMSQuest) 193, 195	general measures 79–87 immunohistochemical studies 99	future treatments 198 investigations 196–7
applications 193	management 103	management 196–7
non-steroidal anti-inflammatory drugs (NSAIDs) 301–2	fluid intake 79, 222	pathophysiology 194-5
·	posterior tibial nerve stimulation 81–2 symptoms 6–7, 62	pharmacotherapy 197 prevalence 193
noradrenaline see norepinephrine	day-by-day changes 7	treatment 195–6
norepinephrine 27 effects on bladder 1–2	management 79	and bowel dysfunction 187–92
nPGi (nucleus paragigantocellularis),	treatment, physical 222  see also detrusor overactivity (DO)	pharmacotherapy 191–2 bowel symptoms, prevalence 189
roles 42	Overactive Bladder Questionnaire 66	and colonic transit time 33

More information

colonic transit time, studies 190 and constipation 187, 189 with dementia 197 and detrusor overactivity 194–5 differential diagnosis 206, 210–11, 294 disease progression 187 and dopamine dysregulation syndrome 200 and enteric nervous system 189 and erectile dysfunction 198 Hoehn and Yahr staging 189, 193, 200 and hyperprolactinemia 198 and hypersexuality 176–7 and impulse control disorders 200 lower gastrointestinal tract symptoms 189 motor symptoms 187 and multiple system atrophy, differential diagnosis 193	pedophilia 173–4  pelvic floor 25   anatomy 25   males 26  pelvic floor dysfunction, and spina	lack of, in spina bifida 261 loss of 157  penilo-cavernosus reflex 73, 271 abnormalities 156 mechanisms 73 testing 274  penis and brain activation 172 cortical representation of 45–6 dorsal nerve 54, 73 distribution patterns 54 primary sensory cortex representation 46 stimulation 51–2  percutaneous endoscopic colostomy (PEC) 148  percutaneous nerve evaluation (PNE) 303
and nocturia 195, 197 nocturnal polyuria 63 non-motor symptoms, assessment 193 pelvic organ dysfunctions 187 prevalence 25 and quality of life 188, 200 sacral neuromodulation in 198 and sexual behavior 198–200 sexual dysfunction in 198–200 prevalence 198–200 treatment 200 sexual functions 199 sphincter electromyography studies 190–1 treatment, targets 187 urine storage disorders 194 voiding symptoms, incidence 197	females 80 males 80 in sexual dysfunction, females 162 therapeutic electrical stimulation 81 treatments 80–2 plans 80 pelvic masses 67 pelvic nerve injury 278, 282–3 and bladder dysfunctions 282 pelvic organ dysfunction after cauda equina damage 266 and cauda equina syndrome 272–3 management, algorithms 307 and neuromuscular disorders 278 and quality of life 188, 207 questionnaires 312–19 surveys 312–19	pergolide 195–6, 200  periaqueductal gray (PAG) 2, 11, 172   bladder information 12   control circuits 16   roles 11–12     in defecation 30–1   stimulation 45  perineo-detrusor inhibitory reflex 80  perineum, cutaneous sensory     innervation 285  peripheral control   of micturition 1–2     changes in bladder disease     states 5–9  peripheral innervation, and sexual     functions 53
Patient Reported Outcome Measures (PROMs) applications 66 lower urinary tract dysfunction 66 patients see neurological patients; post-stroke patients Patient's Global Impression of Change 225 Pausinystalia yohimbe (tree) 161, 232 PCOs (polycystic ovaries) 297 PD see Parkinson's disease (PD) PDE5 inhibitors see phosphodiesterase type 5 (PDE5) inhibitors PDE inhibitors see phosphodiesterase (PDE) inhibitors PEC (percutaneous endoscopic colostomy) 148	pelvic organs female, and hysterectomy 55 neural control of 167  pelvic surgery, autonomic nerve damage 282, 281  penile erection apomorphine induction 43 improvement 160 and lower lumbar spine injury 52 mechanisms 41, 159 psychogenic 41, 52 reflexive 41, 52 neurotransmitters in 159 pathways 41 vasodilators 41 see also erectile dysfunction (ED)  penile innervation 53 penile prostheses 160, 250 penile sensation	peripheral neuropathy, and diabetes mellitus 278  peristalsis colonic-induced 30 mechanisms 29–30  Peristeen system 147, 262  PET see positron emission tomography (PET)  PFMs see pelvic floor muscles (PFMs)  pharmacotherapy bladder symptoms, in Parkinson's disease 197  bowel dysfunction, in Parkinson's disease 191–2 detrusor overactivity 89–103, 195–6 detrusor sphincter dyssynergia 104, 249 neurogenic bladder dysfunctions 89–104

More information

pharmacotherapy (cont.)	porphyria 278, 287–8	primates, sexual responses 40
neurogenic detrusor overactivity 89–103, 247	positron emission tomography (PET) applications 12	PRMS (progressive relapsing multiple sclerosis), prevalence 220
phasic rectal contraction, weak spontaneous 214	bladder studies 194 orgasm studies 49	procainamide 288
phentolamine, in erectile dysfunction treatment 160	sacral neuromodulation studies 300–1, 302	progressive relapsing multiple sclerosis (PRMS), prevalence 220
phenylpropanolamine, in sphincter	post-ejaculation, functional brain	prolactin, inhibition 200
functional improvement 104	imaging 50	prolapse, and spinal cord injury 246
phosphodiesterase (PDE) inhibitors clinical efficacy 97	posterior fossa tumors, and voiding symptoms 177	PROMs see Patient Reported Outcome Measures (PROMs)
mechanisms 96–7 in neurogenic detrusor overactivity	posterior tibial nerve stimulation, for overactive bladder 81–2	propiverine 181 efficacy 92
treatment 96–7	postganglionic fibers 1	trials 92
phosphodiesterases 41	postmenopausal low libido, studies 161	prostaglandin E1
phosphodiesterase type 5 (PDE5) inhibitors contraindications 159	post-micturition residual volume see post-void residual volume	administration issues 231 in erectile dysfunction treatment 160
efficacy 158–9 in erectile dysfunction treatment	(PVR)  post-stroke patients  constipation 179–80	prostate laparoscopic views 122 malignancy testing 68
158, 217, 250, mechanisms 158–9	and sexual intercourse 180	prostate cancer, surgery 193
side-effects 159 physically disabled, fecal impaction	postural hypotension 210–11 treatment 212	prostatectomy, and sexual dysfunction 283
and 142 pituitary adenomas 175 brain imaging 174 computed tomography brain scans 174	post-void residual volume (PVR) 271 definition 69 measurement 69, 223 bladder scans 64	prostate disease in aging males 192 screening 192 surgery 192–3
PLISSIT model 154–5, 235	and multiple system atrophy 208	prostate-specific antigen (PSA) 68
PMC see pontine micturition	Pott's disease 271	screening 192
center (PMC)	PPMS (primary progressive multiple sclerosis), prevalence 220	prostheses, penile 160, 250
PNE (percutaneous nerve evaluation) 303	prazosin, effects on detrusor	PSA see prostate-specific antigen (PSA)
PNTML (pudendal nerve terminal	overactivity 96	PSCD see anismus
motor latency) 73, 286	prefrontal cortex activation 15	pseudoephedrine, in sphincter functional improvement 104
polycarbophil 191	and bladder control 14-15	psychotherapy, sexual dysfunction 162
polycystic ovaries (PCOs) 297	studies 14–15 medial, and bladder filling 16	psyllium 191
polyethylene glycol 191, 214 laxatives 146	roles 14	puborectalis
polyuria 197 treatment 247	prefrontal lobotomy, and sexual behavior 172	anatomy 26 functions 26
see also nocturnal polyuria	preganglionic parasympathetic	pudendal nerve, anatomy 284, 6
pontine defecation center 178	fibers 1	pudendal nerve terminal motor latency
pontine micturition center	pregnancy, and spinal cord injury 251–2	(PNTML) 73, 286
(PMC) 2, 178 control circuits 16	pressure flow studies, bladder 70-1	pudendal neuralgia 73, 284–6 diagnosis 286
functional brain imaging studies 12 inhibitory mechanisms 194 roles 11–12	primary progressive multiple sclerosis (PPMS), prevalence 220	Nantes criteria 286 etiology 284 prevalence 284
pontine tumors, and urinary retention 177	primary sensory cortex, representation of penis 46	symptoms 284–6 treatment 286

More information

pudendal somatosensory evoked potentials 73 abnormalities 156	recto-anal videomanometry see anorectal videomanometry	applications 113 in chronic urinary retention 303–5 complications 114
punch-drunk syndrome 175	rectocolic reflex 30	in detrusor sphincter dyssynergia 114
pure autonomic failure (PAF) 282	rectum, functions 25	development 113 efficacy 113–14, 303
and bladder dysfunctions 282	relapsing remitting multiple sclerosis (RRMS), prevalence 220	mechanisms 113, 300
purinergic pathway, changes 5-7	renal failure, and spinal cord injury 244	in multiple sclerosis 114, 226
purinergic receptors 3	renal function, assessment 243	in Parkinson's disease 198 positron emission tomography
P2X <sub>3</sub> 3, levels 6–7	renal stones, and spinal cord injury 244	studies 300–1, 302
	resiniferatoxin (RTX) 6, 9	results 114 in spina bifida 114, 262
PVN see paraventricular nucleus (PVN)	applications 225	in spinal cord injury 114, 248
PVR see post-void residual volume (PVR)	intravesical therapy 99 mechanisms 89	surgical technique 113
pyridostigmine 211	natural sources of 98	in urinary retention outcomes 303
QoL see quality of life (QoL)	potency 98	patient selection 304-5
QST (quantitative sensory testing) 231	retropubic space, laparoscopic views 122	and voiding 301
quadriplegia and mouth-cecum transit time 33 urethral sphincter stents in 121	rhombencephalitis, magnetic resonance imaging 175	sacral parasympathetic nucleus (SPN) 4, 10
and vesicoureteric reflux 246	Rigiscan 180	sacral posterior rhizotomy 115, 116
quadruped man 268	Riley-Day syndrome see familial	sacral root injury 273, 295
quality of life (QoL)	dysautonomia (FD)	St Mark's electrodes 73
and fecal incontinence 128 in lower urinary tract dysfunction 66	rodents, sexual responses 40	St Mark's scores 128
and multiple system atrophy 206	Rome criteria, modified 32	SARS (sacral anterior root stimulator) 148–9
and neurogenic bowel dysfunction 138–9, 149	rostral anterior cingulate cortex (rACC), roles 31–2	Sativex 97, 225
and Parkinson's disease 188, 200	routines, in neurogenic bowel	SCA (spinocerebellar ataxia),
and pelvic organ dysfunction	dysfunction management 143	differential diagnosis 206
188, 207 questionnaires 66	Royal College of Anaesthetists (UK)	scheduled voiding 79
and spinal cord injury 128, 241	269–70	Schwann cells, proliferation 278-9
Qualiveen 66	RP (anal resting pressure) 34	schwannomas 270-1
quantitative sensory testing (QST) 231	RRMS (relapsing remitting multiple sclerosis), prevalence 220	SCI see spinal cord injury (SCI)
quaternary amines 93	RTX see resiniferatoxin (RTX)	sciatica 270–1
quebracho, efficacy 161	sacral anterior root stimulation with	scintigraphy 134-5
Queen Square algorithm 304 questionnaires	sacral de-afferentation 114–15, 116	SCOPE see Spinal Cord Outcomes Partnership Endeavor (SCOPE)
for lower urinary tract symptoms 66	extradural implantation 115	SD see sexual dysfunction (SD)
for quality of life 66	follow-up 115 intrathecal implantation 115	secondary progressive multiple
rACC (rostral anterior cingulate cortex), roles 31–2	mechanisms 114–15 results 115	sclerosis (SPMS), prevalence 220
RAIR see recto-anal inhibitory reflex (RAIR)	in spinal cord injury 248 surgical technique 115	segmental phasic contractions 29
rats, ejaculation studies 52–3	sacral anterior root stimulator	self-stimulation, electrical 176
Raz, S. 295	(SARS) 148–9	sensory homunculus 46
recto-anal inhibitory reflex (RAIR) 35	sacral dermatomes 268	sensory loss, and cauda equina syndrome 272
and fecal incontinence 35	sacral nerve stimulation (SNS) 149	sensory neuropeptides, occurrence 3
measurement 34 mechanisms 35	applications 10	sensory testing, sexual dysfunction
roles 35	sacral neuromodulation (SNM) 113-14	156–7

Index

More information

septum pellucidum, and subcortical lesions 174–5	management, algorithms 308 multifactorial 155	future research 56 neurological control of 40–56
serotonergic pathways, mechanisms 198	and multiple sclerosis 230-5	neurology 56
serotonin (5-HT) 27	diagnosis 231	and parietal lobe 45-6
and sexual reflexes 42	disability 231	in Parkinson's disease 199
	healthcare professional roles 235 investigations 231	and peripheral innervation 53
serum creatinine 68	multifactorial causes 230	physiological 153 physiology 40–1
serum cystatin C 68	pathophysiology 230–1	rats and humans compared 42–3
sex aids 161, 232	prevalence 230	and spinal cord 50
	treatment 230, 231–2	and temporal lobes 44–5
sexual activity	and multiple system atrophy 214-17	and urinary incontinence 162
females 40	females 217	·
functional brain imaging 46–50	management 217	sexual intercourse, post-stroke patients 180
sexual behavior	in neurological disorders 153-4	patients 180
and cerebrovascular disease 180	in Parkinson's disease 198-200	sexuality
and dementia 181	prevalence 198–200	altered 44
and focal frontal lesions 172	treatment 200	asexuality 173
and head injuries 181-2	pathophysiology	see also hypersexuality;
and parietal lobe 172	females 231	hyposexuality
and Parkinson's disease 198-200	males 230-1	sexual motor behaviors 45
and prefrontal lobotomy 172	prevalence 153	sexual reflexes, serotonin and 42
and stroke 180	primary 154, 155	
and subcortical lesions 176	and prostatectomy 283	sexual rehabilitation, in spinal cord
animal studies 176	psychotherapy 162	injury 251
and temporal lesions 172	secondary 154, 155	sexual responses
and temporal lobe epilepsy 45, 173	secondary sources 232	animal studies 40
Sexual Compulsivity Scale 156, 318	sensory testing 156–7	female 41
sexual desire, functional brain	and spasticity 232 and spina bifida 260–1	male 41
imaging 47	assessment 260–1	phases 41
	treatment 261	primates 40
sexual development, and spina bifida 260	and spinal cord injury 250–2	rodents 40
bilida 200	females 251–2	and spinal cord 51
sexual deviations 173-4	males 250-1	see also human sexual responses
sexual drive	surveys 153	sexual stimulation
determinants 42, 43	tertiary 154, 155	brain activity patterns 4
hemispherical asymmetry 45	tertiary sources 232	nitric oxide release 159
	treatment	sexual symptoms, and multiple system
sexual dysfunction (SD) blood tests 156	approaches 157-8	atrophy 214–17
and cauda equina syndrome 274	females 161-3, 232	- '
management 275	future trends 162–3	SF (Short-Form) Qualiveen 66, 314
classification 153–4	general measures 157–8	sheaths 86
co-morbidities 157–8, 230	males 158–61, 231–2	SIADH (syndrome of inappropriate
counseling 162	multidisciplinary 153	secretion of antidiuretic
and cystectomy 283	outcomes 162	hormone) 175
and depression 158	uro-neurophysiology 156	•
and diabetes mellitus 280	use of term 153	SIDP (subacute inflammatory
drug effects 158	see also female sexual dysfunction	demyelinating
and epilepsy 45	(FSD); male sexual	neuropathy) 280
evaluation 154-6	dysfunction; neurogenic sexual dysfunction	sildenafil 200
algorithms 308	·	efficacy 159
patient attitudes 154-5	sexual excitement, functional brain	in erectile dysfunction treatment
patient history 155	imaging 47–9	158, 160, 217, 231, 261
questionnaires 156	sexual functions	in female sexual dysfunction
and hysterectomy 283	and amygdala 44–5	treatment 161, 251
laboratory investigations 156-7	and brainstem 50	side-effects 217
lesion literature for 169	and frontal lobes 45	trials 232

More information

silodosin, effects on detrusor overactivity 96	sphincter weakness 210 and multiple system atrophy 213–14	and bladder cancer 246 and bladder dysfunctions 241–9
single photon emission computed tomography (SPECT) applications 12, 207–8 dopamine transporter studies 193	spina bifida 255–63 and bladder dysfunctions 256 and bowel dysfunction 256, 261–2 assessment 261	chronic phase 242 assessment 243-4 investigations 243-4 follow-up 249 spinal shock phase 241
Siroky nomogram 70	treatment 261–2	treatment 247
slings 121	co-morbidities 257 definition 255	and bladder stones 244
<del>-</del>	and fecal incontinence 257, 261	and bladder symptoms 242-3
small intestine, roles 25	treatment 262	and bowel dysfunction 32, 249–50
SNARE proteins 100, 101	fetal surgery 257	bowel function outcome measures 134
SNM see sacral neuromodulation (SNM)	folic acid supplementation 255–6 mixed dysfunctional patterns 257	studies 128 classification 241
SNS see sacral nerve stimulation (SNS)	and neurogenic bladder dysfunctions 257	and colonic transit time 33
social brain, concept of 167	and neurogenic detrusor	co-morbidities 127
social control, of voiding 17–19	overactivity, botulinum	and compliance 36
	neurotoxin type	and constipation 32 and defecation 36
social inhibition, loss of 172	A intradetrusor injections	and detrusor sphincter
sodium bicarbonate suppositories 145	258, 260 pathogenesis 255–7	dyssynergia 242
sodium citrate/sorbitol enemas 145-6	and pelvic floor dysfunction 256	and ejaculation 250-1
solabegron, in detrusor overactivity	penile sensation, lack of 261	epidemiology 241
treatment 96	prevalence 25, 255	and erectile dysfunction 160, 250 etiology 241
solifenacin, diffusion 93	risk factors 255	and fertility 251
somatostatin 27	sacral neuromodulation in 114, 262 and sexual development 260	and incomplete bladder voiding 242
spasticity 257	and sexual dysfunction 260-1	infrasacral lesions 242
and sexual dysfunction 232	assessment 260-1	international standards 128 and kidney stones 244
SPCs see suprapubic catheters (SPCs)	treatment 261	life-expectancy 241
	symptoms 255 and tethered cord syndrome 262	and neurogenic bowel dysfunction
specialist investigations indications 66	types of 256	138, 139
in neurogenic bladder	and urinary incontinence 257	and neurogenic detrusor overactivity 243–4, 245
dysfunctions 69	and urinary tract dysfunctions 257–60	and orgasm 251
SPECT see single photon emission	assessment 257–8 surgical treatments 260	and pregnancy 251-2
computed tomography	treatment 258	prevalence 25
(SPECT)	use of term 255	and prolapse 246
sphincter	spina bifida aperta 255	and quality of life 128, 241 remaining autonomic functions,
botulinum neurotoxin for 104	spina bifida occulta 255	international standards 128
functional improvements, pharmacotherapy 104, 249	spinal canal ependymomas 271	and renal failure 244
relaxation 194–5	1 ,	and renal stones 244
see also anal sphincter complex; detrusor sphincter	spinal canal stenosis, and cauda equina syndrome 271	sacral anterior root stimulation with sacral de-afferentation in 248
dyssynergia (DSD); urethral sphincter	spinal control, of bladder function 9–11 spinal cord	sacral neuromodulation in 114, 248 and sexual dysfunction 250–2
sphincter denervation 273, 295	central pattern generators 50–1	females 251–2
sphincter electromyography	development 266	males 250-1
neurogenic changes, in multiple	normal 256	sexual rehabilitation 251
system atrophy 209-10	formation 255 and sexual functions 50	suprasacral lesions 242 and ureteric reflux 244
Parkinson's disease studies 190–1	and sexual responses 51	and urinary frequency 242
sphincterotomy 120	spinal cord injury (SCI) 241–52	and urinary incontinence 242
sphincter relaxation, uninhibited 179	and autonomic dysreflexia 242–3	urinary tract complications 244-6
sphincter surgery 120-1	and bladder augmentation 248-9	and urinary tract infections 244

Index

More information

spinal cord injury (SCI) (cont.) and urinary urgency 242 and vaginal lubrication 251	subcortical disorders 167–82 subcortical inputs to human sexual cycle 42–3	in erectile dysfunction treatment 158, 217 tamsulosin
see also tethered cord syndrome	animal studies 42	applications 211
spinal cord lesions 11 Spinal Cord Outcomes Partnership Endeavor (SCOPE) 134	subcortical lesions 174-6 and bladder 176 and bowel 176	effects on detrusor overactivity 96 trials 96, 104 vs placebo 96
recommendations 243	and hypothalamus 174-5	tegaserod, applications 192
spinal defects, occurrence 256 spinal fracture, and cauda equina	and septum pellucidum 174–5 and sexual behavior 176 animal studies 176	temporal lesions, and sexual behavior 172
syndrome 267	submucosal plexus 26, 27	temporal lobectomy, epilepsy 173
spinal reflexes and bladder pathophysiology 10 forebrain activation 43	substance, P. 6, 27 occurrence 3	temporal lobe epilepsy (TLE) and asexuality 173 and hyposexuality 44–5, 173
spinal stenosis 271	suburothelium 3-5, 90	and neuroendocrine
spinocerebellar ataxia (SCA), differential diagnosis 206	suppositories 145–6 efficacy 146	disorders 45 and sexual behavior 45, 173
SPMS (secondary progressive multiple sclerosis), prevalence 220	types of 145 suprapubic catheterization 83–4 advantages 84	temporal lobe resection (TLR) and hypersexuality 173 outcomes 171
SPN (sacral parasympathetic nucleus) 4, 10	suprapubic catheters (SPCs) 122–3 advantages 122	temporal lobes libidinous 172
SQ (anal squeeze pressure) 34	applications 249	roles 172–3 and sexual functions 44–5
stomach, roles 25	contraindications 122 long-term usage issues 122–3	tenia coli 25
stoma formation 148	suprapubic vibrators, and detrusor	tertiary amines 93
stones	overactivity 224	testosterone
kidney 244 see also bladder stones	suprasacral injuries, bladder dysfunctions in 247	assays 156 deficiency 198
stools see feces	suprasacral lesions, in spinal cord	exogenous transdermal 161
storage symptoms, in lower urinary tract dysfunction 62	injury 242 supraspinal network, functions 11	tethered cord syndrome 262–3 definition 262
straining, and defecation 30, 191	surgical treatments	etiology 262 and fecal incontinence 263
strength training, pelvic floor muscles 80	in multiple sclerosis 226–7 neurogenic bladder dysfunctions	and spina bifida 262 symptoms 262–3
stress tests 67	112–23 pelvic 281, 282	THC (delta-9-tetrahydrocannabinol),
stress urinary incontinence assessment 67	in spina bifida 257, 260	applications 225
management 121-3	urge incontinence 227	therapeutic electrical stimulation in detrusor overactivity treatment 81
pad tests 69 symptoms 63–4	Swedish Pharmaceutical Insurance 270	pelvic floor muscles 81
therapeutic electrical stimulation 81	sympathetically mediated reflex 9	in pelvic floor therapy 81
striatum, electrical stimulation 194 stroke	sympathetic innervation 1–2 anatomy 28–32	stimulation parameters 81 in stress urinary incontinence treatment 81
acute hemispheric 179	symptom scales for neurogenic bladder	tibolone, efficacy 161
and bowel dysfunction 179–80	dysfunction 66–7	TLE see temporal lobe epilepsy (TLE)
and erectile dysfunction 180 and fecal incontinence 180	for urinary disorders 66-7	TLR see temporal lobe resection (TLR)
prevalence 25	syndrome of inappropriate secretion of antidiuretic hormone	toileting
and sexual behavior 180  see also post-stroke patients	(SIADH) 175	and dementia 181
subacute inflammatory demyelinating	tadalafil	timing 79 tolterodine 197
neuropathy (SIDP) 280	efficacy 159, 231	toneroune 19/

More information

diffusion 93 efficacy 89, 92	UDI-6 (Urogenital Distress Inventory) 66, 312	urgency urinary incontinence, symptoms 63–4
trials 90–1 tramadol 301–2	ultrasound scans in spinal cord injury 243	urge syndrome <i>see</i> overactive bladder (OAB)
transanal irrigation 147	in upper urinary tract damage	Urge Urological Distress Inventory 66
transient receptor potential menthol	investigations 69 UPP see urethral pressure profile (UPP)	urinals, hand-held 87
8 (TRPM8) 3	upper motor neuron lesions,	urinalysis
transient receptor potential (TRP) receptor antagonists 97	concept of 294	risk factors 223 see also dipstick urinalysis
roles 97	upper urinary tract damage risk factors, in multiple sclerosis 223	urinary disorders
transient receptor potential vanilloid 1 (TRPV1)	symptoms 65 ultrasound scans 69	and acute hemispheric stroke 179 symptom scales 66–7
activation 3 antibodies 6 depletion 99	upper urinary tract function, preservation 258	urinary diversion, and indwelling catheters 227
expression 97, 98	urapidil, trials 104	urinary frequency 62, 271
levels 7 receptors 5	ureteric reflux, and spinal cord	and spinal cord injury 242
regulatory mechanisms 3	injury 244	urinary incontinence and acute stroke 179
roles 3	urethra, functional brain imaging studies 12	and Alzheimer's disease 180
transient receptor potential vanilloid 4 (TRPV4), roles 97	urethral catheterization 83–4	appliances for 85–7 absorbent 86 males 86
transurethral resection of the prostate (TURP), indications 193	urethral pressure profile (UPP) 72 Fowler's syndrome 298	and cauda equina syndrome 273 definition 63
transverse myelitis 235 studies 235	urethral sphincter electromyography 298	and dementia 180 and dementia with Lewy bodies 180
Treponema pallidum (bacterium) 283–4	external 210 internal 208	differential diagnosis 64 and frontal lobe tumors 171
trospium 197 diffusion 93	striated 296 and voiding dysfunction 65	and hydrocephalus 171 and lower urinary tract
efficacy 92	urethral sphincter stents 120	dysfunction 63 mixed 63–4
TRPM8 (transient receptor potential menthol 8) 3	complications 120–1 development 120	and multiple sclerosis 221 and multiple system atrophy 206
TRP receptor antagonists see transient	permanent 120, 121 temporary 120, 121	overflow 63–4 and sexual functions 162
receptor potential (TRP)	urethral sphincter-to-bladder	and spina bifida 257
receptor antagonists TRPV1 see transient receptor potential	inhibitory reflex, activation 10	and spinal cord injury 242 urgency 63–4
vanilloid 1 (TRPV1)	urethrocystoscopy 293	urodynamics 259
TRPV4 (transient receptor potential vanilloid 4), roles, 97	urge-frequency syndrome  see overactive bladder (OAB)	and white matter lesions 171 see also stress urinary incontinence
TTR gene, mutations 286	urge incontinence	urinary infections 271
tuberculosis, and cauda equina syndrome 271	and bladder filling 14 females 17	urinary retention 175, 293–305 acute complete 293 antimuscarinics and 90
tumors	surgery 227	and cauda equina syndrome 272, 273
pontine 177 posterior fossa 177	Urge Incontinence Impact Questionnaire 66	and cerebrovascular disease 179 clean intermittent self-
resection 271  see also brain tumors; frontal lobe	urgency 13–14	catheterization in 297–8 clinical investigations 297–8
tumors; pituitary adenomas	definition 6 pathophysiology 6–7	complete 293, 296
TURP (transurethral resection of the prostate),	see also urinary urgency urgency incontinence 62	Queen Square algorithm 304 etiology 293–303 structural 293
indications 193	61	Structural 273

Index

More information

urinary retention (cont.)	urine cytology 68	vanilloid pathway, changes 5-7
females 17, 295, 297 and focal frontal lesions 171	urine dipsticks see dipstick urinalysis	vanilloids (intravesical) see intravesical
investigations 297–8 males 295	urine drainage bags, for indwelling catheters 84–5	vanilloids vardenafil
mechanisms 298 and neurological dysfunction 293–5 opiate studies 303	urine storage 4, 13, 61 disorders, in Parkinson's disease 194 mechanisms 10	efficacy 159, 231 in erectile dysfunction treatment 158, 217
partial 293	see also bladder storage	variegate porphyria (VP) 287-8
pathogenesis 298–301 and pontine tumors 177 sacral neuromodulation	urine testing, in multiple sclerosis 223 urodynamics 177–8	vasoactive intestinal peptide (VIP) 27 roles 41
outcomes 303	applications 70–1	vasopressin, secretion 42-3
patient selection 304–5 treatment 10	bladder filling and voiding 70–1 in diabetes mellitus 279	VCDs see vacuum constriction devices (VCDs)
see also chronic urinary retention Urinary Symptom Profile (USP)	in multiple sclerosis 223 in neurogenic bladder dysfunctions	VCMGs (video-cystometrograms) 243-4
66, 314 coverage 66	69–71 non-compressive myelopathies 233, 235	ventral tegmental area (VTA) ejaculation studies 52–3 orgasm studies 49–50
urinary symptoms and brainstem lesions 177–8	in spina bifida 257–8	ventriculoperitoneal shunts 176
and brain tumors 171	in urinary incontinence 259 use of term 223	vertebrae, numbering systems 266
and cauda equina syndrome 273–4 and multiple system atrophy	see also videourodynamics	vertebral column, formation 255
206, 211 surveys 212	uroflow curves, familial amyloid polyneuropathy 287	vesico-ureteric reflux, and quadriplegia 246
prevalence, and multiple system atrophy 212	uroflowmetry 70 for voiding functions 65	Viagra see sildenafil
urinary tract complications, in spinal cord injury 244–6	Urogenital Distress Inventory (UDI-6) 66, 312	vibrators Ferticare 250–1 sex aids 161, 232
urinary tract dysfunctions 15 and spina bifida 257–60	uro-neurophysiology neurogenic bladder dysfunctions 72–3	suprapubic 224 vibratory stimulation 161
assessment 257–8 surgical treatments 260	sexual dysfunction 156 urothelial cells 6	vibro-ejaculation 250–1
treatment 258	urothelial dysfunction 278–9	video-cystometrograms (VCMGs)
see also lower urinary tract dysfunction (LUTD)	urothelium 3–5, 90	243–4
urinary tract infections (UTIs)	roles 7	videourodynamics applications 71–2
and botulinum neurotoxin 102–3 dipstick urinalysis 63, 67–8, 223	USP see Urinary Symptom Profile (USP)	bladder filling 65 in neurogenic bladder dysfunctions
and indwelling catheters 83–4 mid-stream urine test 68	UTIs see urinary tract infections (UTIs)	71–2
recurrent 122, 227 risk reduction 82	vacuum constriction devices (VCDs) 159–60	procedures 71–2 in spina bifida 257–8
and spinal cord injury 244 urinary tract reconstructive surgery	in erectile dysfunction treatment 231–2, 250	VIP see vasoactive intestinal peptide (VIP)
115–17	vacuum devices (sex aids) 161	visceral enteropathy 295
urinary urgency 194–5	vaginal atrophy 161	voiding
and multiple system atrophy 206 and spinal cord injury 242	vaginal lubricants 161, 232	frequency/voiding charts 79 functions, uroflowmetry 65
urine flow rate, nomograms 70	vaginal lubrication, and spinal cord injury 251	mechanisms 4 motivation 13–14
residual, and bladder dysfunction 82	valproic acid 255	and sacral neuromodulation 301 scheduled 79
withholding of, peak activation areas 13	Valsalva maneuver 26, 30, 67, 82, 191, 249, 295	social control of 17–19 see also bladder voiding

urine bags 85



More information

Index

voiding cystourethrography 257–8
voiding dysfunction
brainstem lesions for 177
and brain tumors 177
incidence 194
management 82
clean intermittent self-catheterization
82–4, 223–4, 259
indwelling catheterization 83, 224
and multiple sclerosis, management
223–4
opiates and 301–3

and pure autonomic failure 282 urethral sphincter and 65
voiding reflex 11 control circuits 11, 16
voiding symptoms incidence, in Parkinson's disease 197 and lower urinary tract dysfunction 65 multiple system atrophy 208 and posterior fossa tumors 177
von Frey hairs 157

VP (variegate porphyria) 287-8

VTA see ventral tegmental area (VTA)
Wexner scores 128
white matter lesions, and urinary
incontinence 171
Wolfram syndrome 288
X-rays, pelvic 113
Yang-Monti procedure 119
yohimbine
efficacy 161, 232
side-effects 232