
INDEX

A

- Absorption,
 - chloride,
 - intestinal anion exchangers, 9–11
 - transport, 9
 - electrolyte transport pathways, 3, 4
 - potassium, 12, 13
 - short chain fatty acids,
 - monocarboxylate gene family, 12
 - monocarboxylate transporters, 11
 - sodium,
 - channels, 8
 - human colon, 5, 6
 - sodium-hydrogen exchangers, 6–8
 - types of transport,
 - carrier-mediated, 4
 - diffusion, 4
 - water, 13, 14
 - water soluble vitamins, 14
- Acetylcholine, 44, 45, 47, 54
- Acquired megacolon *see* Megacolon, chronic
- Acute megacolon *see* Megacolon, acute
- Afferent Processes *see* Colonic afferent processes
- Aging,
 - colonic cancer, 99
 - epidemiology, 99
 - neurotransmitters, 100
 - theories,
 - chronic degeneration, 96
 - cross-linkage, 96
 - error catastrophe, 96
 - free radical, 97, 98
 - genetic etiology, 95, 96
 - glycation, 96
 - mitochondrial, 96
 - neuroendocrine, 96
 - rate of living, 96
 - somatic mutation, 96
 - telomeres, 96
- Anal carcinoma, 328, 329
- Anal fissure *see* Anorectal disorders, anal fissure
- Anal pain, 311, 312
- Anal sphincter preservation, 531, 532
- Anorectal disorders,
 - abscess, 539, 540
 - anal fissure,
 - acute, 538, 539

- chronic, 539
 - definition, 537, 538
 - epidemiology, 535
 - fistula in ano, 540, 541
 - hemorrhoids,
 - definition, 535
 - external, 536
 - internal, 536, 537
 - hypertrophied anal papilla, 543
 - pruritus ani, 542
 - skin tags, 543
- Anorectal manometry, *see* Manometry, anorectal
- Antibiotic associated diarrhea, 145, 153, 482
- Antioxidant,
 - components, 181
 - network, 87
 - supplements, 99
 - vitamins, 87
- Appendicitis, 365, 371, 372
- Ascites, 132, 133
- ## B
- Bacteria,
 - activate signaling pathway, 63
 - as treatment *see* Probiotics
 - mucous layer, 55, 57
 - Biofeedback, 314
 - Biopsies, *see* Colonic biopsies
 - Blood supply, 507, 508
- ## C
- Carbohydrate intolerance, 495, 496
 - Carcinoid tumor, 78, 79
 - Catalase, 89
 - Cecal volvulus *see* Volvulus, cecal
 - Chagasic megacolon, 400
 - Chronic ulcerative colitis, *see* Ulcerative colitis
 - Clostridium difficile* colitis *see* Pseudomembranous colitis
 - Colitis, acute, 281–284
 - Colitis, collagenous, 290, 291
 - Colitis, ischemic,
 - blood supply, 507, 508
 - causes,
 - alosetron, 501
 - aortoiliac surgery, 515
 - cardiopulmonary bypass, 516
 - chronic renal failure, 516

- table, 506
- chronic, 516, 517
- clinical presentation, 509
- complications,
 - infarction, 513, 514
 - mesenteric vein thrombosis, 514, 515
- definition, 505
- diagnosis,
 - colonoscopy, 510, 511
 - laboratory, 510
 - laparoscopy, 512, 513
 - physical examination, 509, 510
 - radiological imaging, 365, 369, 370, 510, 511, 512
- histopathology, 276, 291–293
- pathophysiology, 507, 509
- treatment, 513
- Colitis, lymphocytic, 278, 287–290
- Colitis, ulcerative *see* Ulcerative colitis
- Collagenous colitis *see* Colitis, collagenous
- Colon cancer,
 - aging, 99
 - detection,
 - barium colon x-ray, 428
 - colonoscopy, 249, 428, 429
 - cross sectional imaging, 374, 375
 - fecal occult blood, 427, 428
 - genetics, 429
 - sigmoidoscopy, 428
 - epidemiology, 191, 423, 424
 - etiology,
 - carcinogenesis, 424
 - geographic distribution, 423, 424
 - risk factors, 424, 425
 - ulcerative colitis, 483, 484
 - evaluation,
 - presentation, 429
 - pathology, 429
 - staging, 430, 431
 - genetics,
 - adenomatous polyposis coli gene mutations, 194, 429
 - counseling, 205, 206
 - DNA mismatch repair gene mutation, 194, 195
 - estimated risk, 197–199
 - germline mutations, 197
 - hamartoma syndromes, 195–197
 - informed consent, 195
 - linkage analysis, 202
 - molecular diagnosis, 191, 193, 200, 201, 205
 - mutation detection, 203, 204
 - sequencing analysis, 201, 202
 - tumor suppressor gene, 193, 194
 - guanylin expression, 81
 - hereditary nonpolyposis, 191, 194–196, 198–200, 203, 204, 426, 429
 - lymphatics, 129, 130
 - micronutrients, 91
 - oxidative stress, 185
 - prevention, 206, 207, 436
 - probiotics, 154, 155
 - recurrence,
 - considerations, 434
 - management, 434, 435
 - screening, 192, 204, 205, 206, 426, 427
 - therapy,
 - adjuvant, 432–434
 - investigational, 435
 - local and regional, 430, 431
 - preoperative, 431, 432
 - radiotherapy, 432
 - surgery, 431
 - Colonic afferent processes,
 - encoding, 166–168
 - gating mechanisms, 168–170
 - irritable bowel syndrome, 493–495
 - measurement, 338, 339
 - mediators, 337
 - stimuli, 163, 164
 - referred pain, 170
 - transmission
 - parasympathetic, 170, 171
 - smooth muscle tone, 171
 - sympathetic, 170, 171
 - visceral pain pathways,
 - C-polymodal afferent, 164
 - fine myelinated, 164
 - organization, 164–166
 - Colonic biopsies,
 - Clostridium difficile colitis, 276
 - colitis, acute,
 - architecture, 282, 283
 - differential diagnosis, 281, 283
 - collagenous colitis, 290, 291
 - Crohn's disease, 466
 - diarrhea, 280, 281
 - inflammation, 280
 - inflammatory bowel disease,
 - Crohn's disease, 285, 286
 - histopathological features, 284, 285
 - infectious etiology, 286, 287
 - ulcerative colitis, 285, 286
 - interpretation, 278, 293, 294
 - ischemic colitis, 276, 291–293
 - lymphocytic colitis, 287–290
 - physician communication,
 - clinical information, 277–279
 - pathway, 275, 276

- Colonic ecosystem, 147
- Colonic endocrine cells,
 - argentaffin, 74, 75
 - argyrophillic, 74, 75
 - distribution, 73, 74
 - embryonic origin, 74
 - enterochromaffin, 74, 75, 77
 - morphology, 73
 - secretion, 74
- Colonic goblet cells,
 - morphology, 53, 54
 - migration, 106
 - mucin glycoproteins, 61
 - secretion, 54, 55, 106
 - secretory products, 63, 64
 - transgenic ablation, 64
- Colonic hypersensitivity *see* Colonic afferent processes
- Colonic lymphatics,
 - cysts, 132
 - drainage, 124, 125
 - fluid removal, 127
 - embryology, 126
 - formation, 129
 - histology, 123–125
 - history, 123
 - infections, 130, 131
 - lamina propria, 124
 - lymphangion, 127, 128
 - physiology, 127, 128
 - smooth muscle, 128
- Colonic motility, *see also* Giant migrating contractions
 - activation of muscle layers, 43
 - chemical control, 29
 - constipation, 340
 - contractility, 336
 - coordination, 32
 - descending excitation, 42
 - disorders, 337, 339
 - electrophysiology, 335, 338
 - irritable bowel syndrome, 493, 494
 - measurement,
 - intraluminal pressure, 337
 - smooth muscle tone, 337
 - myogenic control, 26
 - neural control,
 - autonomic, 28
 - central, 29
 - enteric, 28
 - sensation, 336
 - organized contractions,
 - migrating motor complexes, 30, 40–43, 45, 47
 - rectal motor complexes, 30
 - pacemaker zone, 40
 - phasic contractions, 26
 - principles, 335, 339
 - reflexes, 42
 - rhythmicity, electrical and contractile, 29, 30
 - waves, 40, 44
- Colonic mucins,
 - biochemistry, 60, 61
 - colon cancer, 58, 65
 - gene expression,
 - localization, 61, 62
 - regulation, 62, 63
 - gene knock-out, 65
 - genes, 56
 - inflammatory bowel disease, 65
 - membrane,
 - glycoproteins, 57–59
 - sialomucin, 57
 - secretory, 59, 60
- Colonic nerves, *see* Enteric nerves
- Colonic polyps,
 - colon cancer risk, 425
 - cross sectional imaging, 359, 360, 372
 - polypectomy, 259–263
- Colonic smooth muscle,
 - calcium waves, 45, 46
 - neuromuscular junction, 38
 - postjunctional responses,
 - contractions, 38
 - inhibition, 38, 39
- Colonic transit,
 - aging, 101, 102
 - measurement, 338
- Colonoscopy,
 - biopsies, 253, 254, 279, 280
 - chromoendoscopy, 250–253
 - complications, 247–249
 - decompression, 267, 268, 398, 399
 - dilation of strictures, 266
 - gastrointestinal bleeding,
 - angiodysplasia, 257
 - diverticular hemorrhage, 258
 - radiation proctitis, 258, 259
 - treatment, 256, 258, 259
 - history, 243, 244
 - ischemic colitis, 510, 511
 - inflammatory bowel disease, 254, 255
 - laser induced fluorescence, 255
 - laser photoablation, 264
 - marking sites,
 - clip marking, 267
 - tattooing, 266, 267
 - optical coherence tomography, 253
 - optical fluorescence, 253
 - polypectomy, 259–263

- preparation, 244, 245
 - reliability, 249, 250
 - sedation, 245, 246
 - screening, 428, 429
 - stents, 264–266
 - success rate,
 - alternative instrument, 247
 - predictive factors, 247
 - training, 246, 247
 - Colorectal sensory processes, *see* Colonic afferent processes
 - Common mucosal immune system, 115
 - Computerized tomography *see* Radiological techniques, computerized tomography
 - Congenital megacolon *see* Hirschsprung's disease
 - Constipation,
 - anorectal manometry, 310–311
 - balloon expulsion, 308
 - chemotherapy, 455
 - colonic motility, 340
 - complications, 455, 456
 - defecography, 348–350
 - definition, 441
 - diagnosis, 443–446
 - electromyography, 309
 - epidemiology, 99, 441, 442
 - laxative dependency, 453, 454
 - management, 452, 453
 - origins, 442, 443, 501
 - pelvic floor dysfunction, 497
 - pregnancy, 454
 - probiotics, 149
 - serotonin, 77
 - Sitzmark study, 351, 352
 - spinal cord injury, 454, 455
 - therapy,
 - bulk agents, 447, 448
 - diet, 446, 447
 - osmotic agents, 448, 449
 - prokinetic agents, 451
 - stimulant laxatives, 449, 450
 - suppositories and enemas, 451
 - surgery, 452
 - unproven, 451, 452
 - Continuous quality improvement *see* Outcomes research, practice guidelines
 - Crohn's disease,
 - cytokines, 220
 - diagnosis, 462, 463, 464–466
 - epidemiology, 460
 - etiology, 460, 461
 - glutathione, 90
 - histopathology, 466
 - history, 459, 460
 - pathogenesis, 461, 462
 - presentation, 463, 464
 - superoxide dismutase, 91
 - treatment,
 - adjuvant, 466, 467
 - fistulas, 470, 471
 - fulminant, 469, 470
 - investigational, 472, 473
 - maintenance, 471
 - mild-moderate, 467–469
 - moderate-severe, 469
 - surgery, 472, 523–527
 - Cross-sectional imaging, *see* Radiological techniques
 - Cytokines, 108–111
- D**
- D cells, *see* Somatostatin
 - Defecation reflex,
 - internal anal sphincter, 48
 - continence, 49
 - defecation, 49
 - Defecography, *see* Radiological techniques
 - Diabetes mellitus, 314
 - Diarrhea and somatostatin, 75
 - Diverticular disease,
 - classification, 409
 - cross sectional imaging, 364, 368
 - definition, 409, 410
 - epidemiology, 99
 - giant colonic, 419, 420
 - diverticulitis,
 - cecal, 418, 419
 - diagnosis, 415, 416
 - fistula, 417, 418
 - hemorrhage, 412
 - obstruction, 412, 416, 417
 - presentation, 411, 412
 - treatment, 414–417
 - diverticulosis,
 - diagnosis, 412, 413
 - hemorrhage, 258, 412, 413
 - presentation, 411
 - treatment, 413, 414
 - pathophysiology, 410
- E**
- Electromyography, 309, 310
 - Endocrine cells, *see* Colonic endocrine cells
 - Endoscopic ultrasound,
 - endoanal,
 - anal carcinoma, 328, 329
 - comparison to electromyography, 310
 - fecal incontinence, 325–327
 - fistulas, 327, 328

indications, 324, 352, 353
 endorectal in rectal carcinoma,
 accuracy, 330, 331
 recurrence, 331, 332
 staging, 329
 equipment, 322
 normal imaging, 322–324
 principles, 321, 322
 Enteric nerves,
 characteristics,
 after-hyperpolarization neurons, 36
 spiking neurons, 36, 37
 efferent, 37
 organization, 35, 36
 pathways, 47, 164
 reflexes, 44
 Enteroendocrine cells, *see* Colonic endocrine
 cells
 Epidemiology,
 aging, 99
 application,
 clinical, 231, 232
 disease definition, 231
 environmental risk factors, 232, 233
 definition, 227, 228
 disease prevention, 233–235
 identification of risk factors, 228, 229
 methods,
 analytical, 229–231
 descriptive, 229
 Epiploic appendagitis, 365, 369
 Evacuation proctography *see* Radiological
 techniques, defecography,
 Excitatory junction potentials, 42, 43, 45
F
 Familial adenomatous polyposis, 191, 198, 202,
 203, 372, 373, 425, 426
 Familial amyloidosis and somatostatin, 76
 Fecal incontinence, 99, 101, 231–235, 310,
 312, 313, 325–327
 Fiber *see* Irritable bowel syndrome, therapy and
 Constipation, therapy
 Fistula, 327, 328, 462, 463, 468, 524–526, 540,
 541
 Folic acid, 86
 Free radicals,
 aging, 97, 98
 definition, 179
 measurement, 182, 183
 reactions, 179–182
 sources, 181, 184, 185
 targets, 86
 vitamins as donors and acceptors, 85
 zinc, 87

G

Giant migrating contractions,
 canine, 41, 42
 human colon, 30–32, 101
 Glucagon,
 biosynthesis, 78
 physiologic actions, 80
 secretion, 80
 Glutathione,
 deficiency, 90, 185, 186
 measurement, 183
 Glutathione peroxidase, 88
 Goblet cells, *see* Colonic goblet cells
 Guanylin,
 biosynthesis, 81
 diarrheal disorders, 81
 physiologic action, 81
 Gut immunology *see* Intestinal lymphocytes
 Gut inflammation,
 acute,
 definition, 211, 212
 leukocyte adhesion, 214
 neutrophil transmigration and infiltration,
 213, 214
 physiologic stimulation, 212
 resident epithelial cells, 212, 213
 acute phase response, 219, 220
 adaptive immunity, 220, 221
 chronic,
 cytokines, 222
 origin, 222
 outcomes, 223
 leukocyte function,
 eosinophils, 216
 monocytes and macrophages, 215
 neutrophils, 215
 non-phagocytic cells, 215, 216
 resolution, 221, 222
 soluble mediators,
 arachidonic acid metabolites, 218–219
 cytokines, 216–218
 nitric oxide, 219

H

Health related quality of life *see* Outcomes
 research, components, health related
 quality of life
 Hemorrhoids, *see* Anorectal disorders, hemor-
 rhoids
 High endothelial vessels, 115
 Hirschsprung's disease,
 diagnosis, 385–387
 enteroendocrine cells, 77
 epidemiology, 383
 genetics, 383–385

- outcome, 388–390
- presentation, 385
- serotonin, 77
- treatment, 387–388
- Histology, 35, 39, 73, 100
- Hypertrophied anal papilla, 543
- Hypoganglionosis, 391
- I**
- Ileal brake, 81
- Ileoanal pouch, 528, 529
- Immunology, *see* Intestinal lymphocytes
- Inflammation, *see* Gut inflammation
- Inflammatory bowel disease,
 - cancer, 425, 483, 484
 - colonoscopy, 254, 255
 - cross-sectional imaging, 363, 364, 366, 367
 - glutathione, 90
 - health related quality of life, 239
 - histopathology, 284–287
 - micronutrients, 91
 - mucin gene expression, 66
 - mucins, 65, 66
 - oxidative stress, 185
 - probiotics, 145, 151
 - serotonin, 78
 - somatostatin, 75, 76
- Inhibitory junction potential,
 - aging, 101
 - origin, 42, 43, 45, 46
- Interstitial cells of Cajal,
 - c-kit immunoreactivity, 30
 - function, 30
 - input from enteric nervous system, 39
- Intestinal epithelial cells, 105, 106, 109, 113, 212, 220, 221
- Intestinal lymphangiectasia, 132, 133
- Intestinal lymphocytes,
 - B cell activation, 111
 - cytotoxic T cells, 108
 - effector B cells, 112
 - effector T cells, 109, 110
 - germinal centers, 111, 112, 114
 - humoral immunity, 113–115, 126
 - lamina propria T cells, 109
 - migration, 115, 116
 - ontogeny, 110
 - subtyping, 106, 107
 - T-helper, 107, 108
 - tolerance, 116
- Intestinal neuronal dysplasia, 390, 391
- Iron, 89
- Irritable bowel syndrome,
 - criteria, 492
 - definition, 491
 - epidemiology,
 - impact, 492, 493
 - natural history, 492
 - prevalence, 100, 491
 - symptom subgroups, 492
 - evaluation,
 - initial, 496, 497
 - specialized, 497
 - symptoms, 496
 - therapeutic trial, 497, 498
 - health related quality of life, 239
 - pathophysiology,
 - abuse, 495
 - biopsychosocial, 493
 - carbohydrate intolerance, 495, 496
 - hypersensitivity, 172, 493–495
 - infectious, 495
 - motility, 493, 494
 - stress, 495
 - serotonin receptors,
 - alosetron, 500, 501
 - prucalopride, 502
 - tegaserod, 501, 502
 - therapy,
 - alternative, 500
 - antispasmodics, 499
 - cholestyramine, 498
 - fiber, 497, 498
 - hypnotherapy, 499, 500
 - investigational, 502
 - loperamide, 498
 - probiotics, 150, 151
 - psychotropic agents, 499
- Irritable colon *see* Irritable bowel syndrome
- Ischemia-reperfusion, 184
- Ischemic colitis, *see* Colitis, ischemic
- L**
- Lactobacillus species *see* Probiotics,
 - preparations, lactic acid bacteria
- L cells, *see* Glucagon
- Lipid peroxidation, 86, 181, 182
- Lymphatics, *see* Colonic lymphatics
- Lymphocytes *see* Intestinal lymphocytes
- Lymphocytic colitis *see* Colitis, lymphocytic
- Lymphoglandular complexes, 131
- Lymphoid tissues,
 - effector, 106
 - gut-associated, 106, 113, 115, 126
 - inductive, 106
- Lynch's syndrome *see* Colon cancer, hereditary
 - nonpolyposis
- M**
- Manometry, anorectal,
 - aging, 101
 - anal pain, 311, 312

- balloon expulsion, 308
- biofeedback, 314
- compliance, 306, 307
- continence test, 308
- constipation, 310, 311
- diabetes mellitus, 314
- fecal incontinence, 312, 313
- history, 298
- indications, 301
- inhibitory reflex, 305, 306
- physiology, 297, 298, 304
- post partum, 313
- principles, 298–301
- resting anal pressure, 302, 303
- spinal cord injury, 313
- voluntary contractions, 303–305
- Megacolon,
 - acute,
 - associated conditions, 396
 - definition, 395
 - diagnosis, 397
 - pathophysiology, 395, 396
 - presentation, 396, 397
 - risks, 399
 - treatment, 267, 268, 398, 399
 - chronic,
 - associated conditions, 399
 - definition, 399
 - glutathione, 90
 - pathophysiology, 399–401
 - presentation, 401
 - treatment, 401, 402
 - volvulus, 403
 - congenital, 384, 385
- Metallothioneins, 87, 88
- Microflora associated characteristics, 145
- Micronutrients,
 - classes, 85
 - dietary vitamins, 87
 - recommended dietary allowances, 88
 - supplements, 85, 86, 89–91
 - trace elements, 87–89
- Mitogen keratinocyte growth factor, 111
- Motility, *see* Colonic motility
- Mucins, *see* Colonic mucins
- Mucosal addressin cell adhesion molecule, 115
- Mucous gel, 53, 64
- Myenteric potential oscillations, 43
- Myotonic dystrophy and endocrine cells, 76
- N**
- National polyp study, 249, 250
- Neoplasia, *see* Colon cancer and Colonic polyps
- Neural regulation, *see* Enteric nerves
- Neuropeptide Y, 80
- Neurotensin, 55
- Nitric oxide,
 - binding, 38, 39
 - blocking agents, 45
 - inflammatory bowel disease, 254, 255
 - megacolon, 401
 - regulation of motility, 42, 45, 47
 - soluble mediator of inflammation, 219
- Nonsteroidal anti-inflammatory drug colitis, 462
- O**
- Outcomes research,
 - components,
 - economic analyses, 239, 240
 - health related quality of life, 238, 239
 - patient satisfaction, 237, 238
 - definition, 235
 - disease management, 236, 237
 - origins, 236
 - practice guidelines, 235–237
 - research designs, 236
- Oxidative stress,
 - associated conditions, 183, 184
 - targets, 180, 181
- P**
- Pain *see* Colonic afferent processes
- Paneth cells, 106
- Pelvic floor dysfunction *see* Constipation, pelvic floor dysfunction
- Peptide YY,
 - biosynthesis, 80
 - physiologic actions, 80
- Peyer's patches, 106–108, 111, 115, 126
- Pouchitis,
 - probiotics, 150
 - treatment, 486
- Primary hyperalgesia, 171, 172
- Probiotics,
 - constipation, 149
 - dairy products, 146
 - definition, 141
 - diarrheal diseases, 148, 149
 - fecal infusions, 152, 153
 - function, 144, 145
 - history, 142
 - inflammatory bowel disease, 151
 - irritable bowel syndrome, 150, 151
 - monitoring, 145, 146
 - pouchitis, 150
 - preventative therapy, 153, 154
 - preparations,
 - lactic acid bacteria, 143, 144, 146, 147, 155
 - nonlactic acid bacteria, 143, 144
 - safety, 146, 147
 - selection criteria, 142, 143
- Pruritus ani, 542

Pseudomembranous colitis, 152, 276, 462
Pseudomyxoma peritonei, 372

R

Radiation proctitis and colitis, 258, 259, 365
Radiological techniques,
 barium colon x-ray, 428
 computerized tomography,
 adenocarcinoma of colon, 374, 375
 appendicitis, 365, 371, 372
 diverticulitis, 364, 368
 epiploic appendagitis, 365, 369
 familial polyposis coli, 372, 373
 hamartoma, 373
 inflammatory bowel disease, 366, 367
 infectious colitis, 364
 ischemia, 365, 369, 370
 mesenteritis, 372
 methodology, 357–360
 non-carcinoma tumors, 375, 376
 polyp, 359, 360, 372
 pseudomyxoma peritonei, 372
 pseudopolyp, 373
 radiation colitis, 365
 rectal carcinoma, 529, 530
defecography,
 colonic inertia, 348, 349
 cystocele, 351
 normal, 347
 pelvic floor disorder, 349, 350
 rectal prolapse, 348
 rectocele, 347, 348, 350, 351
 technique, 310, 345–347
magnetic resonance imaging,
 congenital malformations, 363
 defecatory disorders, 353, 354, 446
 diverticulitis, 364
 limitations, 353
 methodology, 360–363
 rectal cancer, 530
 ulcerative colitis, 363, 364
sitzmark study, 351, 352, 444, 445
Reactive oxygen species, *see* Free radicals
Recommended dietary allowance, 86, 88
Rectal carcinoma,
 epidemiology, 529
 evaluation,
 computerized tomography, 529, 530
 endoscopic ultrasound, 329–332, 530
 magnetic resonance imaging, 530
 management,
 goals, 530, 531
 surgery, 531–533
Rectal prolapse, 348
Rectoanal inhibitory reflex, 305, 306
Rectocele, 347, 348, 350, 351

S

Secretion,
 bicarbonate, 16
 chloride channel, 14, 15
 potassium, 15, 16
Selenium, *see* Micronutrients, trace elements
Serotonin,
 biosynthesis, 76, 77
 colonic, 36, 41, 55
 physiologic actions, 77
 receptors, 451, 500–502
Sigmoid volvulus *see* Volvulus, sigmoid
Skin tags, 543
Somatostatin,
 aging, 100
 biosynthesis, 75
 colonic, 36, 55
 physiologic actions, 75
Spastic colon, *see* Irritable bowel syndrome
Spinal pathways, 166
Stricture, 463–465, 524–526
Substance P,
 aging, 100
 neurotransmitter, 36, 45, 55
Superoxide dismutase, 88, 90, 91
Surgical treatments,
 colon cancer, 431
 constipation, 452
 Crohn's disease,
 colitis, 525, 526
 indications, 472, 524
 locations, 523
 nutritional considerations, 523, 524
 operative approaches, 524, 525
 perianal, 526, 527
 ischemic colitis, 512, 513, 514
 rectal cancer,
 approach, 529
 evaluation, 529, 530
 management, 530–533
 ulcerative colitis,
 indications, 527
 principles, 527
 options, 528, 529

T

Toxic megacolon, 466, 524, 527
Trace elements, *see* Micronutrients
Transit, *see* Colonic transit
Traveler's diarrhea, 154
Trefol peptides, 222

U

Ulcerative colitis,
 complications,
 colon cancer, 483, 484

- extraintestinal, 482, 483
- progression, 482
- diagnosis,
 - differential, 481, 482
 - endoscopy, 480, 481
 - signs and symptoms, 480
- disease activity, 481
- management,
 - aminosalicylates, 484, 485
 - corticosteroids, 485
 - immunosuppressives, 485, 486
 - pouchitis, 486
 - supportive and dietary, 484
 - surgery, 527–529
- environmental factors, 480
- epidemiology, 479
- probiotics, 152
- susceptibility, 479, 480

Ultrasound, *see* Endoscopic ultrasound

V

Vascular endothelial growth factor C, 126

Vasoactive intestinal peptide,

aging, 100

megacolon, 399, 401

neurotransmitter, 36, 39, 46, 55

Virtual colonoscopy *see* Radiological techniques, computerized tomography and magnetic resonance imaging

Visceral pain *see* Colonic afferent processes

Vitamin C, 86, 89, 90

Vitamin E, 86, 89, 90

Vitamin K, 89

Vitamins, *see* Micronutrients

Volvulus,

- cecal, 403, 405
- definition, 402, 403
- diagnosis, 404, 405
- etiology, 403
- presentation, 403
- sigmoid, 403–405
- treatment, 405

Z

Zinc, *see* Micronutrients, trace elements