

# A Guide to Pain Medicine

*Edited by*

Joseph Chuan Shih YANG

and

Siu Lun TSUI



香港大學出版社  
HONG KONG UNIVERSITY PRESS

**Hong Kong University Press**  
14/F Hing Wai Centre  
7 Tin Wan Praya Road  
Aberdeen  
Hong Kong

© Hong Kong University Press 2002

ISBN 962 209 544 5

All rights reserved. No portion of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopy, recording, or any information storage or retrieval system, without prior permission in writing from the publisher.

British Library Cataloguing-in-Publication Data  
A catalogue record for this book is available from the British Library

Secure On-line Ordering  
<http://www.hkupress.org>

Printed and bound by Liang Yu Printing Factory Limited, Hong Kong, China

# Contents

Contributors	vii
Preface	xi
<u>1</u> Mechanisms of Pain <i>Steve Onsiong</i>	1
<u>2</u> Basic Principles of Pain Assessment and Evaluation <i>Joanne Wai Yee Chung</i>	13
<u>3</u> Acute Pain Management <i>Phoon Ping Chen</i>	33
<u>4</u> Low Back Pain <i>Wing Sang Chan</i>	75
<u>5</u> Neuropathic Pain <i>Jacobus Kwok Fu Ng</i>	95
<u>6</u> Headache <i>Chi Tim Hung</i>	119
<u>7</u> Facial Pain <i>Chi Tim Hung</i>	153
<u>8</u> Chronic Pain Associated With Medical Diseases <i>Cynthia Mun Ling Wong</i>	181
<u>9</u> Cancer Pain <i>Siu Lun Tsui</i>	207

<u>10</u>	Pharmacological Management <i>Joseph Chuan Shih Yang</i>	241
<u>11</u>	Interventional Techniques in Pain Management <i>Tsun Woon Lee</i>	271
<u>12</u>	Radiotherapy in Pain Management in Cancer Patients <i>Gordon Au, Ray Chan, Rico Liu and Yoke Ching Foo</i>	299
<u>13</u>	Psychological, Behavioural and Social Management <i>Peter Wing Ho Lee</i>	321
<u>14</u>	Physiotherapy and Occupational Therapy in Pain Management <i>Stephen Wong and Mary Chu</i>	345
<u>15</u>	Side Effects and Disabilities Management <i>Kwok Key Lam</i>	367
<u>16</u>	Principles of Pain Control in Traditional Chinese Medicine <i>Jie Guang Sun and Joseph Chuan Shih Yang</i>	401
	Index	411

# Contributors

## EDITORS

**Professor Joseph Chuan Shih YANG, 楊卷龍**

MD, Dip Am Board, FFARCSI, FHKCA, FHKAM, Dip Pain Mgt

Formerly Professor and Chairman, Department of Anaesthesiology, The University of Hong Kong. Adjunct Professor of Anaesthesiology, Columbia University.

**Dr. Siu Lun TSUI, 徐兆麟**

MBBS, MD, FANZCA, FFPMANZCA, FHKCA, FHKAM, Dip Pain Mgt

Consultant and Director of Pain Medicine, Department of Anaesthesiology, Queen Mary Hospital, 102 Pokfulam Road, Hong Kong. Honorary Clinical Associate Professor, Department of Anaesthesiology, The University of Hong Kong.

## CONTRIBUTORS

**Dr. Gordon Kwok Hung AU, 歐國雄**

MBBS, FRCR, FHKCR, FHKAM

Consultant and Chief of Service, Department of Clinical Oncology, Queen Mary Hospital, Hong Kong.

**Dr. Ray Tsz Tong CHAN, 陳子棠**

MBBS, FRCR, FHKCR, FHKAM

Medical Officer, Department of Clinical Oncology, Queen Mary Hospital, Hong Kong.

**Dr. Wing Sang CHAN, 陳穎生**

MBChB, FANZCA, FHKCA, FHKAM, Dip Pain Mgt

Senior Medical Officer, Department of Anaesthesia and Intensive Care, Tuen

Mun Hospital, Tuen Mun, Hong Kong. Honorary Clinical Assistant Professor, Department of Anaesthesiology, The University of Hong Kong.

**Dr. Phoon Ping CHEN, 曾煥彬**

MBBS, FANZCA, FHKCA, FHKAM, Dip Pain Mgt, MHA

Consultant, Department of Anaesthesiology, Intensive Care & Operating Services, Alice Ho Miu Ling Nethersole Hospital, Tai Po; Adjunct Associate Professor, Department of Anaesthesia & Intensive Care, The Chinese University of Hong Kong..

**Ms. Mary Man Lai CHU, 朱文麗**

PDOT, OTR

Department Manager, Department of Occupation Therapy, Queen Mary Hospital, Hong Kong.

**Dr. Joanne Wai Yee CHUNG, 鍾慧儀**

PhD, RN

Assistant Professor, Department of Nursing and Health Sciences, The Hong Kong Polytechnic University, Hung Hom, Kowloon.

**Dr. Yoke Ching FOO, 胡玉清**

MBBCh, BAO

Medical Officer, Department of Clinical Oncology, Queen Mary Hospital, Hong Kong.

**Dr. Chi Tim HUNG, 熊志添**

MBBS, FANZCA, FHKCA, FHKAM, Dip Pain Mgt

Consultant, Department of Anaesthesia and Intensive Care, Queen Elizabeth Hospital, Wylie Road, Kowloon, Hong Kong. Honorary Clinical Associate Professor, Department of Anaesthesiology, The University of Hong Kong.

**Dr. Kwok Key LAM, 林國基**

MBChB, FANZCA, FHKCA, FHKAM, Dip Pain Mgt

Consultant, Department of Anaesthesia and Intensive Care, Tuen Mun Hospital, Tuen Mun, Hong Kong.

**Professor Peter Wing Ho LEE, 李永浩**

BSocSc, MSocSc (Clin Psy), PhD

Clinical Psychologist, Department of Psychiatry, The University of Hong Kong, 102 Pokfulam Road, Hong Kong.

**Dr. Tsun Woon LEE, 李振垣**

MBBS, FANZCA, FHKCA, FHKAM, Dip Pain Mgt

Consultant, Department of Anaesthesia and Intensive Care, Tuen Mun Hospital, Tuen Mun, Hong Kong.

**Dr. Rico King Yin LIU, 廖敬賢**

MBBS, FACHPM

Medical Officer, Department of Clinical Oncology, Queen Mary Hospital, Hong Kong.

**Dr. Jacobus Kwok Fu NG, 吳國夫**

MBChB, FANZCA, FHKCA, FHKAM, Dip Pain Mgt

Associate Professor, Department of Anaesthesiology, The University of Hong Kong, 102 Pokfulam Road, Hong Kong.

**Dr. Steve ONSIONG, 李孟強**

MBBS, FRCA, FHKCA, FHKAM

Consultant, Department of Anaesthesia and Intensive Care, Pamela Youde Nethersole Eastern Hospital, Hong Kong.

**Dr. Jie Guang SUN, 孫介光**

Researcher, The Jockey Club MRI Engineering Centre, Department of Electrical and Electronic Engineering, The University of Hong Kong, Hong Kong.

**Dr. Cynthia Mun Ling WONG, 黃敏玲**

MBBS, FANZCA, FHKCA, FHKAM, Dip Pain Mgt

Senior Medical Officer, Department of Anaesthesia, Tung Wah Hospital, Hong Kong. Honorary Clinical Assistant Professor, Department of Anaesthesiology, The University of Hong Kong.

**Mr. Stephen Hon Tack WONG, 黃漢德**

Certificate in Physiotherapy, Diploma Biomechanics, MA(SPA)

Department Manager, Physiotherapy Department, Queen Mary Hospital, Hong Kong.

# Index

- μ opioid receptors 248  
μ receptor 249  
6-acetyl morphine 251  
  
abdomen pain 405  
abdominal breathing 336  
abortive therapy 131, 133  
abuse 246  
acetaminophen 249  
acetates 244  
activities of daily living (ADL) 216, 355, 360  
activity diary 339, 358  
acupuncture 288, 293, 347, 351  
acute herpes zoster infection (shingles) 65  
acute pain management algorithm 37  
acute pancreatitis 65  
acute renal failure (ARF) 370  
acute toxicity 253  
addiction 242, 246, 249, 258, 378  
adjuvant analgesics 242, 252  
ADL 355, 359  
adverse effects of epidural analgesia 56  
adverse effects of unrelieved acute pain 34  
adverse effects 59, 134, 253, 258  
aerobic exercises 340  
aetiology 76  
agonist-antagonists 44  
agranulocytosis 158  
AIDS 199  
alcohol 258, 272, 275, 276  
alfentanil 44  
'Algomed' pump 291  
  
algorithm for anticonvulsants 254  
algorithm for corticosteroid 253  
algorithm for hypnotics 257  
algorithm for non-opioid 246  
algorithm for opioid usage 251  
algorithm for using anti-depressant 254  
allesthesia 232  
allodynia 3, 97, 98, 101, 109  
alpha-2 adrenergic agonists 230, 252, 257  
alprazolam 256  
amitriptyline 170, 253, 254, 380  
amoxapine 381  
anaesthesia dolorosa 386  
Analgesic Ladder 219, 220, 221, 242  
anesthesia dolorosa 97, 101  
anorexia 212, 215, 234, 390  
anthranilic acids 245  
anti-cancer therapy 209, 214, 217  
anticonvulsants 252, 254, 255, 382  
antidepressants 139, 252, 254, 263, 379  
antiemetics 258, 377  
antihistamine 256  
anxiety 330, 342  
anxiolytics 252, 256  
appetite 252  
aseptic meningitis 372  
aspirin 244, 245, 247, 248, 249, 262  
assessment and evaluation before neuroablative procedures 232  
assessment and evaluation of cancer pain 214  
assessment 214, 324, 349, 355, 358  
assistive devices 360, 361  
asthmatics 371

- Atiq 261  
attitudinal barriers 325  
atypical facial pain 171, 172  
atypical trigeminal neuralgia 156  
aura 123, 127  
autonomic features 141
- background infusion of opioid 53  
baclofen 255, 289, 384  
Beck depression inventory 79  
behavioural rating scale 20  
benign orgasmic headache 134  
benzodiazepine 225, 256, 257, 258  
beta-blockers 138  
biofeedback 147, 337, 347, 350  
bisacodyl 375  
bisphosphonate 225, 226, 256  
blocks 272  
blood circulation 404  
blood stasis 402, 406  
blood 402, 403, 406, 407  
bone marrow damage 254  
bone pain 256, 304  
botulinus toxin Type A 85, 140  
box scale 19  
brachial plexopathy 210  
brain metastases 312, 313  
brain 304, 308  
brain 375  
breakthrough cancer pain 261  
breakthrough pain 250, 260, 261, 262, 264  
Brief Pain Inventory (BPI) 14, 17, 22  
Buerger's disease 188  
bupivacaine 47, 54, 58, 230, 275, 276, 288  
buprenorphine 44, 247, 248  
burn pain management 38  
buspirone 256  
butarphanol 44  
butazones 244  
butyrophenones 384
- cachexia 216  
caesium 302  
calcitonin 225, 227, 255
- calcium channel blockers 138  
cancer pain 208, 210, 212, 255  
capsaicin 171  
carbamazepine 157, 254, 382  
cardiotoxicity 254  
cardiovascular toxicity 47  
categorical rating scale (CRS) 17, 20, 21  
catheter-related infection 388  
ceiling effect 44, 221, 245, 247, 254, 263  
celecoxib 42, 220, 246  
central hypersensitization 7  
central nervous system toxicity 47  
central pain 96, 99, 102, 103, 112, 113  
cervicogenic headache 147  
cervicothoracic sympathetic block 285  
cervicothoracic sympathetic chain 285  
Chassaignac tubercle 285  
chemical lumbar sympathectomy 276  
chemoreceptor triggering zone 376  
chemotherapy 210, 215, 217  
chest pain 182, 183, 185, 405, 406  
Chinese Cancer Pain Assessment Tool (CCPAT) 27, 28  
Chinese pain intensity scale 27  
chlordiazepoxide 256  
chlorpromazine 384  
chronic administration 253  
chronic cluster headache 141  
chronic pain syndrome 347, 352  
chronic paroxysmal hemicrania 134  
chronic urticaria 371  
circulation 402, 404  
classification of headache 120  
clinic environment 334  
cloazepate 256  
clomipramine 256  
clonazepam 254, 255, 383  
clonidine 230, 257, 258, 384  
cluster headache 136, 140  
cobalt 302, 313  
cocaine 255  
codeine 45, 221, 245, 248, 249, 258  
coeliac plexus block 231, 273  
cognitive reframing 338, 339  
cognitive-behavioural interventions 59

- cognitive-behavioural therapy 68  
 colic pain 406  
 compensation neurosis 332  
 complete pain free 263  
 complex regional pain syndrome (CRPS) 106, 276, 285  
 complex regional pain syndrome I (CRPS I) 103, 107  
 complex regional pain syndrome II (CRPS II) 103, 107  
 complications 272, 277, 279, 283, 284, 286, 287, 288, 289, 296  
 constipation 211, 212, 215, 218, 234, 263, 374, 391  
 context-sensitive half-life 45  
 continuous neuropathic pain 253, 255  
 controlled-release carbamazepine 158  
 converting factor 261  
 corneal anaesthesia 165, 166, 167  
 corticosteroids 252, 253, 263  
 cortisone 253  
 cough 234  
 COX-1 4, 42, 219, 220, 243, 246, 368  
 COX-2 4, 42, 219, 220, 243, 246, 368  
 creatinine clearance 370  
 cross reactivity 372  
 CRPS I 106, 107, 108, 109  
 CRPS II 106, 107, 108, 109  
 CRPS 107, 109, 110, 111, 113  
 cultural relevancy 26  
 curative 213  
 cyclo-oxygenase (COX) 42, 219, 243, 244, 259, 368  
 deep heat therapy 350  
 deep muscular 335  
 delta opioid receptors 43  
 dependence 258  
 depression 329  
 desensitization 356, 357  
 desipramine 253, 254, 380  
 devaluation 329  
 dexamethasone 252, 253, 263  
 dextroamphetamine sulphate 378  
 dextropropoxyphene 247  
 dextropropoxyphene 45, 247, 248  
 dextropropoxyphene 221, 247  
 diabetes mellitus 189  
 diabetic neuropathy 189  
 diagnostic block 276, 278, 280, 284  
 diamorphine (heroin) 247, 251  
 diazepam 226, 256, 257, 384  
 diclofenac diethylammonium (Voltaren Emulgel 1%) 245  
 diclofenac sodium 243, 259, 260  
 diclofenac 220, 244, 262  
 dilunisal 244  
 dihydrocodeine 221, 247, 248  
 dihydroergotamine 136, 137  
 discogenic back pain 87  
 discomforts 212, 233  
 discs herniation 82  
 disodium pamidronate (Aredia) 227  
 distraction, 338  
 dizziness 404  
 DM 189  
 DNA 301, 303  
 docusate 375  
 dolgesic 247, 248, 263  
 doloxene 247, 248  
 dorsal column stimulation 90  
 dorsal root entry zone (DREZ) 171  
 dothiepin 380  
 doxepin 253, 254, 380  
 drain 407  
 drug dependence 378  
 drug holiday 242  
 drug interactions 373  
 drug therapy 242  
 dry mouth 234  
 dynamic pain 41  
 dysesthesia 97, 98, 99  
 dyspnoea 216, 234, 392  
 education 349, 353  
 electrotherapy 350  
 elements 301  
 elimination half-life 262  
 emesis 215  
 EMG 350  
 EMLA cream 48  
 entonox 40

- environmental adaptation 354, 355  
 epidemiology 76  
 epidural analgesia 54, 63, 86  
 epidural and intrathecal routes 261  
 epidural opioid 49, 55  
 epidural steroid 90, 288  
 epidural 281, 283, 285, 288, 289, 290, 291, 292, 293, 294, 296  
 episodic cluster headache 141  
 equianalgesia between morphine and methadone 250  
 equi-analgesia effects 244  
 equianalgesic 250  
 ergonomics 360, 361  
 ergot induced headache (rebound) 136  
 ergotamine 135, 137  
 ethanol 231  
 etodolac 244  
 evaluation 75, 78, 349  
 exercise 339  
 exertional migraine 134  
 extradural and intrathecal opioids 228  
 extradural and intrathecal routes 228  
 extradural route 227  
 extrapyramidal signs 258  
 facet joint syndrome 87  
 facet joint 283, 286  
 facet syndrome 87  
 failed back surgery syndrome 77, 82  
 family history 327  
 fenamates 244  
 fenoprofen 244  
 fentanyl citrate 261  
 fentanyl 43, 44, 223, 247, 250, 258, 260  
 fibromyalgia 174, 348  
 fictitious disorder 332  
 Fleet enema 375  
 fludrocortisone 253  
 flufenamic acid 244  
 flunitrazepam 257  
 fluoroscopy 273, 276, 281, 294  
 fluoxetine (Prozac) 254, 381  
 flurazepam 257  
 flurbiprofen 244  
 foramen ovale 162, 163  
 foramen 165  
 fractionation schedules 300  
 fractionation 305, 306, 307, 312, 313, 314  
 fractions 307, 309, 312, 313, 314  
 free radicals 303  
 fulminant hepatic failure 371  
 gabapentin (Neurontin) 158, 159, 170, 226, 254, 383  
 Gaenslen's test 86  
 gamma aminobutyric acid (GABA) 252, 255, 256  
 gamma knife 166  
 ganglion impar 231, 280  
 gastric ulcers 369  
 gastrointestinal bleeding 252, 369  
 Gate Control Theory 322, 350  
 glaucoma 254  
 glossopharyngeal neuralgia 168  
 glycerol gangliolysis 161  
 goose flesh 80  
 gout 195  
 gray (Gy) 303, 306, 307, 308, 309, 310, 312, 313, 314  
 group activities 360, 362  
 haematological disorders 371  
 haloperidol 256, 258, 384  
 headache 127, 405  
 hepatotoxic 245  
 Herbert Benson's relaxation response 336  
 hereditary influence 127  
 herpes zoster 210  
 heterocyclic antidepressants 381  
 histamine-2 receptor 369  
 holistic approach 212, 233  
 Horner's syndrome 286  
 hydrocortisone 253  
 hydroxyzine 256  
 hyperalgesia 4, 97, 98, 100, 109  
 hypersensitivity 371  
 hypertension 370  
 hypnotics 256, 257  
 hypocalcemia 255

- hypochondriacal disorder 331  
 hypophosphatemia 255  
 hypoxemia 141, 142  
 Ibuprofen 243, 244, 245  
 IFT 350  
 imageries 336  
 imipramine 256, 380  
 implanted pumps 291  
 indomethacin 220, 243, 244, 260, 262  
 Infusaid 291  
 inhalational analgesia 62  
 insomnia 208, 212, 216, 256, 257  
 instrumental activities of daily living (IADL) 355, 359  
 intercostal block 281, 282  
 intercostal nerve 281, 282  
 intercostal neuralgia 211  
 inter-disciplinary approach 36  
 interest checklist 360  
 intermediate acting 257  
 interrupted direct current 350  
 interstitial 301, 302  
 intervertebral disc hernia 77  
 intra-articular local anaesthetics and steroid injection 89  
 intracavitory 301, 302  
 intradiscal electrothermal modulation (IDET) 87, 90  
 intramuscular (i.m.) 48, 244  
 intranasal fentanyl 223  
 intrathecal analgesia 229  
 intrathecal drug delivery 90, 289  
 intrathecal morphine 227  
 intrathecal neurolysis 231  
 intrathecal opioid 64  
 intravenous boluses 49  
 intravenous PCA opioids 64  
 intravenous routes 259  
 iodine 302  
 iridium 302  
 ischaemic chest pain 183, 185  
 'Isomed' pump 291  
 itchiness 261  
 job-site visit 359, 361  
 joint dysfunction 351  
 jump sign 174  
 kappa 43  
 keratitis 165  
 ketamine 40, 170, 226, 230, 255  
 ketoprofen 220, 244, 245, 259  
 ketorolac 244, 245, 259, 260, 262  
 kinisophobia 325  
 labour costs 250  
 lactulose 375  
 laser therapy 347, 350  
 laxatives 263, 374  
 leisure activities 360  
 lens 308  
 levo-bupivacaine 47, 48  
 life events 328  
 life roles 354, 355, 358  
 lignocaine (lidocaine) 47, 226, 255  
 linear accelerators 302  
 lionine facial appearance 141  
 liver injury 371  
 local anaesthetic 47, 48, 230, 252, 255  
 local-field 305, 309  
 lorazepam 226, 256, 257  
 low molecular weight heparin 57  
 lumbago 405  
 lumbosacral plexopathy 210  
 lumbosacral sprain 85  
 lung 308  
 Lyell's syndrome 372  
 Madison Scale 332, 333  
 malaise 252  
 malignant ascites 391  
 malignant infiltration 209  
 malingering 332  
 Maprotiline 381  
 McGill Pain Questionnaire (MPQ) 14, 17, 22, 23, 25, 215  
 Meckel's cave 161, 164, 165  
 mefenamic acid 244, 245  
 meloxicam 246  
 membrane stabilizers 225, 226  
 menstrual migraine 134, 136

- metastatic bone pain 253  
 methadone (physeptone) 222, 247, 249,  
     250  
 methotripteneprazine 256, 258  
 methyl salicylate (analgesic balm) 245  
 methylmorphine 248  
 methylphenidate 257, 378  
 methylprednisolone 253  
 methysergide 139  
 mexiletine 226, 255, 383  
 miacalcic nasal spray 256  
 microvascular decompression (MVD)  
     160, 166, 167  
 midazolam 226, 256  
 migraine 127  
 mild pain 242  
 mild to moderate pain 242  
 mind set 341  
 minimal effective analgesic concentration  
     (MEAC) 217, 218  
 misoprostol, proton pump inhibitors 369  
 moderate pain 242, 247  
 moderate to severe pain 242  
 monoamine oxidase inhibitors 251  
 mood 252  
 morphine 43, 44, 45, 51, 221, 222, 244,  
     245, 247, 249, 250, 251, 254, 258, 260,  
     261, 264  
 morphine-3-glucuronide 249  
 morphine-6-glucuronide 249  
 MST Continus 221, 222  
 mu 43  
 multidimensional scales 25, 215  
 multidisciplinary clinic 213  
 multidisciplinary works 36, 213  
 multimodal postoperative rehabilitation  
     programme 36  
 multiple sclerosis 155, 168  
 mu-opioid receptors 46  
 muscle rigidity 46  
 muscle spasm 84  
 muscle tension and fatigue 84  
 muscular function restoration 349  
 myofascial pain syndrome 85, 173  
 myofascial pain 348, 351  
 myopathy 252  
 nabumetone 244  
 nalbuphine 44  
 naloxone 46, 248, 379  
 naproxen 244, 245, 262  
 narcotics 246  
 nasal polyps 371  
 nausea 212, 215, 218, 233, 252, 376,  
     391  
 nerve entrapment syndrome 348  
 nerve plexus 308, 314  
 neural blocks and interventional pain  
     procedures 89  
 neuraxial analgesia 227, 234  
 neuraxial medications 229  
 neuroablative chemical 231  
 neuroablative procedures 230, 231, 233  
 neurogenic theory 129  
 neuroleptics 252, 256, 258  
 neurolytic block 231, 271, 272, 273,  
     276, 281, 285  
 neurolytic coeliac plexus block 231  
 neurolytic intercostal nerve block using  
     phenol 231  
 neuropathetic pain 96, 97, 99, 100, 101,  
     102, 103, 106, 107, 113, 254, 255, 256,  
     258  
 neuropathy 189, 190, 210  
 neurostimulatory techniques 293  
 nimesulide 246  
 nitrazepam 384  
 nitroglycerin 255  
 N-methyl-D-aspartate (NMDA) 100, 101,  
     102, 106, 109, 226  
 NMDA antagonist 222  
 NMDA receptor blockers 252  
 nociceptor 2, 3  
 non-malignant pain 251  
 non-specific back pain 75, 77, 83  
 nonsteroidal anti-inflammatory drugs  
     (NSAIDs) 4, 8, 42, 65, 78, 88, 219,  
     220, 221, 225, 243, 244, 245, 246, 248,  
     252, 259, 262, 263, 368  
 norepinephrine 253  
 norpethidine 45, 251  
 norpropoxyphene 248  
 nortriptyline 170, 253, 254, 380

- numerical rating scale (NRS) 14, 17, 19, 20, 21, 24, 25
- obstetric pain management 61
- occupational performance history interview 358
- occupational therapy intervention 355, 359
- occupational therapy 242
- opioids 225, 230, 242, 243, 244, 245, 247, 248, 249, 256, 260, 262, 263, 374
- opioid-sparing effect 42
- optimum pain relief 242
- oral mucositis 210
- oral routes 259
- oral to intramuscular potency 260
- oral transmucosal fentanyl citrate 223
- osseous metastases 300, 305, 309
- osteoarthritis 192, 193, 194
- osteoclast inhibitors 252, 255
- osteoclastic activities 226
- osteoporotic fracture 83
- Oucher scale 21
- oxicams 244
- oxycodone 249, 259
- oxytocin 249
- pain assessment 14–32
- pain disorder 331
- pain intensity 242, 264
- pain management 347, 348, 409
- pain rehabilitation 346, 347
- pain 300, 305, 306, 307, 308, 309, 311, 312, 314, 402, 403, 406, 408
- palliative anti-cancer therapy 213, 233
- palliative care 233
- pancreatic 273
- pancreatitis 191, 192
- paracetamol 243, 244, 245, 247, 248, 259, 263, 271
- parecoxib 42, 246
- paroxysmal hemiцranea (CPH) 141
- pathogenesis 155
- pathological fractures 226
- patient monitoring 60
- patient-controlled analgesia (PCA) 39, 49, 51, 224, 260
- patient-controlled epidural opioid plus 64
- patient-controlled intranasal analgesia (PCINA) 224
- Patrick test 86
- PCA concept 51
- PCA device 229
- PCA morphine 64
- PCA opioid 51, 65
- PCA 53, 65, 260
- Pentazocine 249
- peptic ulcer 369
- percutaneous anterolateral cordotomy 231, 232
- percutaneous trigeminal ganglion compression 165
- peripheral nerve block 58
- peripheral sensitization 4
- peripheral vascular disease 187
- personality 328, 341
- pethidine 43, 44, 45, 247, 250
- phantom pain 102, 103, 105, 276, 285
- Phenazocine 247
- phenol 3 231, 272, 276, 277, 278, 280, 281
- phenothiazines 384
- phenylbutazone 244
- phenytoin 254
- photons 301, 302
- physeptone 221, 250
- physiotherapists 346, 347, 348, 349, 352
- physiotherapy 242, 348, 352, 353
- piroxicam 244, 245, 262
- placebo factor 326
- plasma concentration 262
- plexopathy 210, 314
- pneumothorax 276, 283, 286
- polypharmacy 243
- post herpetic neuralgia (PHN) 66, 102, 103, 105, 156, 159, 169, 170, 171, 210
- postdrome 127
- postoperative pain 244, 259, 260, 262
- postoperative shivering 251
- postural sense 351
- prednisolone 253

- Prednisone 253  
 pre-emptive analgesia 7, 35, 36  
 pressure sores 394  
 pressure therapy 357, 358  
 prevalence for episodic tension headache 145  
 prevalence of migraine 120  
 preventive measures 374  
 prilocaine 47  
 primary or secondary tumors 77  
 procedural pain 40, 48  
 prodrome 127  
 prognostic blocks 277  
 prophylactic therapy 133, 137  
 propionic acids 245  
 propoxyphene 247, 248  
 propriionates 244  
 proproxyphene 247  
 prostaglandin biosynthesis 243  
 prostaglandin 246  
 provocative discography 90  
 Prozac 254  
 psychological assessment 323  
 psychological treatment 333  
 psychosis 331  
 psychotherapy 242  
 psyllium (metamucil) 375  
 pulse generator 294, 295  
 purposeful activities 354, 355  
 pyrazolones 244  
 pyrrolacetic acids 245
- qi 402, 403, 406, 407, 408, 409  
 quality of life 354, 356
- RA 197, 198  
 radiation therapy 210  
 radicular pain 90  
 radiobiology 303  
 radiofrequency coagulation of the trigeminal ganglion 283  
 radiofrequency gangliolysis 162, 164  
 radiofrequency lesion 89  
 radiofrequency thermocoagulation 142  
 radiofrequency 144, 167, 272, 283, 284, 286, 292
- radionecrosis 166  
 radiosurgery 166, 167  
 radiotherapy 210, 215, 217, 242, 301, 302, 303, 304, 305, 306, 307, 308  
 radium 301, 302  
 Raynaud's disease 189  
 Raynaud's phenomenon 189  
 rebound headache 133  
 red flags 78, 80  
 reflex sympathetic 348  
 relative anti-inflammatory potency 253  
 relaxation response 336  
 relaxation techniques 147  
 relaxation 335, 336  
 remifentanil 44  
 renal toxicity 369  
 resolution 127  
 respiratory depression 379  
 rest pain 41  
 Reye's syndrome 372  
 rheumatoid arthritis 196, 197  
 rofecoxib 42, 220, 246  
 role checklist 358  
 ropivacaine 47, 54  
 routes of drug administration 259  
 RTOG 306
- s.c. (subcutaneous) 259  
 s.l. (sublingual) 259  
 sacroiliac sprain 86  
 salicylates 244  
 saline laxatives 375  
 schedule 301, 305, 307, 312  
 SCS (spinal cord stimulation) 293, 295  
 secondary amine 254  
 secondary hyperalgesia 4  
 senna 375  
 serotonin 253  
 sertraline 254  
 serum concentration 261, 263  
 severe pain 242, 249  
 short wave diathermy (SWD) 350  
 sickle cell disease 66  
 Sickness Impact Profile (SIP) 79  
 side effects of non-opioid analgesics 242

- side effects 242, 255, 263, 305, 308, 309, 314  
 simplification 354  
 slow-release morphine 250  
 sodium channels 254  
 sodium valproate (Epilim) 226, 254, 255  
 somatization disorder 330  
 specific back pain 75, 77, 81  
 spinal abscess 387  
 spinal cord compression 387  
 spinal cord stimulation (SCS) 293, 294  
 spinal cord 310, 311, 312  
 spinal drug delivery systems 228  
 spinal haematoma 387  
 spinal morphine 229  
 spinal opioid 49  
 spinal routes 261  
 spinal stenosis 77, 81, 90  
 splanchnic nerves 273  
 splinting 355  
 splints 356, 357, 360  
 spondylolisthesis 77, 82  
 spread 329  
 steady serum concentration 262  
 steady state 262  
 steady-state blood concentration 261  
 stellate ganglion block 285, 286  
 Stevens-Johnson syndrome 372  
 stimulants 252, 257  
 stomachache 404  
 stress management 329, 340  
 strong opioids 242, 247, 263  
 strontium 302  
 subarachnoid 289, 290, 292  
 subcutaneous (SC) route 224  
 sublingual buprenorphine (Temgesic) 223  
 substance abuse 68  
 sufentanil 44, 258  
 sulindac 220, 243, 244  
 sulphate 250  
 sumatriptan 134, 135, 137  
 superior hypogastric plexus block 231, 277, 278, 279  
 surgical decompression 82  
 swelling sensation 405  
 sympathetic nervous system 347  
 sympathetically maintained pain (SMP) 100, 107  
 'synchromed' pump 292  
 syrup morphine 261  
 systemic analgesia 217  
 systemic opioid 62  
 tapering schedule 258  
 TCA (tricyclic antidepressant) 225  
 temazepam 257  
 temporal arteritis 148  
 temporo-mandibular joint (TMJ) 173  
 temporomandibular 348  
 tenoxicam 244  
 tension-type headache 145, 146  
 tertiary amine 254  
 therapeutic rapport 326  
 thioridazine 256  
 tolmetin 244  
 tonify 407  
 toxic epidermal necrolysis 372  
 tramadol 46, 221, 222, 247, 248, 373  
 transcutaneous electrical nerve stimulation (TENS) 59, 347, 350  
 transdermal fentanyl patch 221, 227, 250, 260, 261  
 transmucosal fentanyl citrate 264  
 transmucosal routes 261  
 trauma pain management 38  
 trazodone 381  
 trial stimulation 90  
 triamcinolone 253  
 triazolam 257  
 tricyclic antidepressants 170, 172, 225, 253, 256, 379  
 trigeminal neuralgia 154, 159, 254  
 trigger area 156  
 trigger point 85, 90, 174, 285, 287, 288  
 uni-dimensional scale 23, 24, 215  
 uranium series 301  
 valdecoxib 42  
 valproate 138

- valproic acid 382  
variable half-life 250  
vascular theory 129  
vasospastic side effects 136  
verbal rating scale (VRS) 14, 20, 23, 24,  
  25, 27, 215  
visual analogue scale (VAS) 14, 17, 18,  
  19, 20, 23, 24, 25, 215  
visual analogue thermometer (VAT) 19  
vomiting 212, 218, 377
- Waddell's signs 81  
weak opioids 242, 247  
weight gain 252  
wide-field radiotherapy 309, 310  
wind up 7  
Wisconsin Brief Pain Inventory (BPI)  
  215
- withdrawal of steroids 253  
withdrawal symptoms 258  
withdrawal 257  
work capacity evaluation 359  
work capacity 355  
work rehabilitation 355, 360  
work retraining 359, 362  
work simplification 359, 360  
work site adaptation 359  
worker role interview 358
- Yin and yang 403, 406  
Yin-qi 404
- zoloft 254  
zolpidem 257  
zygapophyseal joints 87, 283, 284, 286,  
  287