Clinical Pain Management

*Practice and Procedures*
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*Please note: The table of contents and a combined index for all four volumes in the series can be found on the Clinical Pain Management website at: www.clinicalpainmanagement.co.uk.*
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Since the successful first edition of *Clinical Pain Management* was published in 2002, the evidence base in many areas of pain medicine has changed substantially, thus creating the need for this second edition. We have retained the central ethos of the first volume in that we have continued to provide comprehensive coverage of pain medicine, with the text geared predominantly to the requirements of those training and practicing in pain medicine and related specialties. The emphasis continues to be on delivering this coverage in a format that is easily accessed and digested by the busy clinician in practice.

As before, *Clinical Pain Management* comprises four volumes. The first three cover the main disciplines of acute, chronic, and cancer pain management, and the fourth volume covers the practical aspects of clinical practice and research. The four volumes can be used independently, while together they give readers all they need to know to deliver a successful pain management service.

Of the 161 chapters in the four volumes, almost a third are brand new to this edition while the chapters that have been retained have been completely revised, in many cases under new authorship. This degree of change reflects ongoing progress in this broad field, where research and development provide a rapidly evolving evidence base. The international flavor of *Clinical Pain Management* remains an important feature, and perusal of the contributor pages will reveal that authors and editors are drawn from a total of 16 countries.

A particularly popular aspect of the first edition was the practice of including a system of simple evidence scoring in most of the chapters. This enables the reader to understand quickly the strength of evidence which supports a particular therapeutic statement or recommendation. This has been retained for the first three volumes, where appropriate. We have, however, improved the system used for scoring evidence from a three point scale used in the first edition and adopted the five point Bandolier system which is in widespread use and will be instantly familiar to many readers (www.jr2.ox.ac.uk/bandolier/band6/b6-5.html).

We have also retained the practice of asking authors to highlight the key references in each chapter. Following feedback from our readers we have added two new features for this edition: first, there are key learning points at the head of each chapter summarizing the most salient points within the chapter; and second, the series is accompanied by a companion website with downloadable figures.

This project would not have been possible without the hard work and commitment of the chapter authors and we are deeply indebted to all of them for their contributions. The volume editors have done a sterling job in diligently editing a large number of chapters, and to them we are also most grateful. Any project of this magnitude would be impossible without substantial support from the publishers – in particular we would like to acknowledge our debt to Jo Koster and Zelah Pengilley at Hodder. They have delivered the project on a tight deadline and ensured that a large number of authors and editors were kept gently, but firmly, “on track.”

Andrew SC Rice, Douglas Justins, Toby Newton-John, Richard F Howard, Christine A Miaskowski
London, Newcastle, and San Francisco

I would also like to add my personal thanks to the Series Editors who have given their time generously and made invaluable contributions through the whole editorial process from the very outset of discussions regarding a second edition in deciding upon the content of each volume and in selecting Volume Editors. More recently, they have provided an important second view in the consideration of all submitted chapters, not to mention stepping in and assisting with first edits where needed. The timely completion of the second edition would not have been possible without this invaluable input.

Andrew SC Rice
Lead Editor
Introduction to Clinical Pain Management: Practice and Procedures

Despite extensive research into the origins and mechanisms of acute and chronic pain, its management remains a challenge to all involved in health care. This is partly due to our incomplete knowledge of the subject and the plasticity of the mechanisms involved. The need to educate patients and develop therapeutic means that are effective but are well tolerated, are additional problems encountered in daily practice. Each chapter in Practice and Procedures can stand alone or work to complement the chapters in preceding volumes – Acute Pain, Chronic Pain, and Cancer Pain. Authors have been chosen as having a special interest and expertise in the practical applications they describe. They have been invited to present their work in a style that is not only comprehensive but also easy to read, with summaries of key points and evidence-based references. The editors and authors have endeavored to provide the reader with a contemporary text that utilizes our latest knowledge on the management of pain to maximize a favorable outcome.

Practice and Procedures covers various forms of pain assessment in addition to a wide range of therapies that can be provided by a diverse range of healthcare disciplines, including practical procedures and applications in the management of acute, chronic, and cancer pain. The volume concludes with valuable chapters about clinical research methods and writing medicolegal reports.

We trust that this volume will be of value to all healthcare workers, regardless of their discipline, and that it will help them to keep abreast of developments and challenges in the maturing discipline of applied pain medicine.

Harald Breivik, William I Campbell, and Michael K Nicholas
Oslo, Belfast, and Sydney
How to use this book

SPECIAL FEATURES

The four volumes of *Clinical Pain Management* incorporate the following special features to aid the readers’ understanding and navigation of the text.

Key learning points

Each chapter opens with a set of key learning points which provide readers with an overview of the most salient points within the chapter.

Cross-references

Throughout the chapters in this volume you will find cross-references to chapters in other volumes in the *Clinical Pain Management* series. Each cross-reference will indicate the volume in which the chapter referred to is to be found.

Evidence scoring

In chapters where recommendations for surgical, medical, psychological, and complementary treatment and diagnostic tests are presented, the quality of evidence supporting authors’ statements relating to clinical interventions, or the papers themselves, are graded following the Oxford Bandolier system by insertion of the following symbols into the text:

[I] Strong evidence from at least one published systematic review of multiple well-designed randomized controlled trials

[II] Strong evidence from at least one published properly designed randomized controlled trial of appropriate size and in an appropriate clinical setting

[III] Evidence from published well-designed trials without randomization, single group pre-post, cohort, time series, or matched case-controlled studies

[IV] Evidence from well-designed non-experimental studies from more than one center or research group

[V] Opinions of respected authorities, based on clinical evidence, descriptive studies or reports of expert consensus committees.

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Where no grade is inserted, the quality of supporting evidence, if any exists, is of low grade only (e.g. case reports, clinical experience, etc).

Other textbooks devoted to the subject of pain include a tremendous amount of anecdotal and personal recommendations, and it is often difficult to distinguish these from those with an established evidence base. This text is thus unique in allowing the reader the opportunity to do this with confidence.
Reference annotation

The reference lists are annotated with asterisks, where appropriate, to guide readers to key primary papers, major review articles (which contain extensive reference lists), and clinical guidelines. We hope that this feature will render extensive lists of references more useful to the reader and will help to encourage self-directed learning among both trainees and practicing physicians.

A NOTE ON DRUG NAMES

The authors have used the international nonproprietary name (INN) for drugs where possible. If the INN name differs from the US or UK name, authors have used the INN name followed by the US and/or UK name in brackets on first use within a chapter.
<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Full Form</th>
<th>Definition</th>
<th>Abbreviation</th>
<th>Full Form</th>
<th>Definition</th>
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<tbody>
<tr>
<td>5-HT</td>
<td>5-hydroxytryptamine</td>
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<td>CHEOPS</td>
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<td>AC</td>
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<td>CIDP</td>
<td>chronic inflammatory demyelinating polyradiculoneuropathy</td>
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<td>ACC</td>
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<td>CK</td>
<td>creatine kinase</td>
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<td>ACMP</td>
<td>Access to Controlled Medicines Program</td>
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<td>CLBP</td>
<td>chronic low back pain</td>
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<td>ACR</td>
<td>American College of Rheumatology</td>
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<td>CMT</td>
<td>Charcot–Marie–Tooth</td>
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<td>ACT</td>
<td>acceptance and commitment therapy</td>
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<td>CNS</td>
<td>central nervous system</td>
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<td>AD</td>
<td>Alzheimer’s disease</td>
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<td>COMT</td>
<td>catechol-O-methyltransferase</td>
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<td>Consolidated Standard of Reporting Trials</td>
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<td>nowi</td>
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<td>anterior insula</td>
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<td>alanine aminotransfer</td>
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<td>COX</td>
<td>cyclooxgenase</td>
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<td>COX-2</td>
<td>cyclooxygenase-2</td>
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<td>clinical practice guidelines</td>
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<td>ANCA</td>
<td>antineutrophil cytoplasmic antibody</td>
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<td>CPNB</td>
<td>continuous peripheral nerve blockade</td>
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<td>ANS</td>
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<td>CPS</td>
<td>chronic pain service</td>
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<tr>
<td>anti-CCP</td>
<td>anti-cyclic citrullinated protein</td>
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<td>CPVI</td>
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<tr>
<td>AP</td>
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<td>CQI</td>
<td>continuous quality improvement</td>
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<tr>
<td>APS</td>
<td>American Pain Society; or acute pain service</td>
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<td>CRP</td>
<td>C-reactive protein</td>
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<td>APTT</td>
<td>activated partial thromboplastin time</td>
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<td>CRPS</td>
<td>complex regional pain syndrome</td>
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<td>American Society of Anesthesiologists</td>
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<td>CSCI</td>
<td>continuous subcutaneous infusion</td>
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<td>aspartate aminotransfer</td>
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<td>CSF</td>
<td>cerebrospinal fluid</td>
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<tr>
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<td>CSQ</td>
<td>Coping Strategies Questionnaire</td>
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<td>CUA</td>
<td>cost-utility analysis</td>
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<td>Bath Adolescent Pain Questionnaire</td>
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<td>DAPOS</td>
<td>Depression, Anxiety, and Positive Outlook</td>
<td>Scale</td>
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<td>BNF</td>
<td>British National Formulary</td>
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<td>DASS</td>
<td>Depression, Anxiety and Stress Scale</td>
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<td>BOLD</td>
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<td>DESS</td>
<td>Echelle Douleur Enfant San Salvador</td>
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<td>BP</td>
<td>blood pressure</td>
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<td>DLPFC</td>
<td>dorsolateral prefrontal cortex</td>
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<tr>
<td>BPI</td>
<td>Brief Pain Inventory</td>
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<td>DNIC</td>
<td>diffuse noxious inhibitory control</td>
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<td>CARF</td>
<td>Commission on Accreditation of Rehabilitation Facilities</td>
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<td>DRG</td>
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<td>CBF</td>
<td>cerebral blood flow</td>
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<td>DSM</td>
<td>Diagnostic and Statistical Manual of Mental Disorders</td>
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<tr>
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<td>cognitive-behavioral therapy</td>
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<td>DTI</td>
<td>diffusion tensor imaging</td>
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<tr>
<td>CCBT</td>
<td>contextual cognitive-behavioral therapy</td>
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<td>electrocardiogram</td>
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<td>cholecystokinin</td>
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<td>EDTA</td>
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<tr>
<td>CCP</td>
<td>content, context, and process</td>
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<td>EEG</td>
<td>ethylenediaminetetraacetic acid</td>
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<td>Chief Executive Officer</td>
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<td>electroencephalography</td>
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<tr>
<td>CGH</td>
<td>cervicogenic headache</td>
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<td>enzyme-linked immunosorbent assay</td>
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<tr>
<td>CGRP</td>
<td>calcitonin gene-related peptide</td>
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